SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Subsequent Environmental Assessment for:

Proposed Amended Rule 1171 – Solvent Cleaning Operations and

Proposed Amended Rule 1122 – Solvent Degreasers

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PREFACE

The Draft Subsequent Environmental Assessment (SEA) for the Proposed Amended Rules 1171 – *Solvent Cleaning Operations*, and 1122 – *Solvent Degreasers*, was circulated for a 45-day public review and comment period from March 3, 2009 to April 16, 2009. No public comment letters were received and minor modifications were made to the Draft SEA so it is now a Final SEA. Deletions and additions to the text of the SEA are denoted using ~~strikethrough~~ and underlined, respectively. No changes to the proposed project were made since the release of the Draft SEA that would change the conclusions made in the Draft SEA or significantly worsen the environmental impact analyzed in the Draft SEA. One exemption in Alternative D is now being included as part of the proposed project. Since the exemption was analyzed under an alternative, no further analysis is necessary. Therefore, pursuant to CEQA Guidelines §15088.5, recirculation is not necessary since the information provided does not result in new avoidable significant effects.

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EXECUTIVE SUMMARY

INTRODUCTION

The South Coast Air Quality Management District (SCAQMD) is the agency principally responsible for comprehensive air pollution control within the SCAQMD's jurisdiction (referred to as district). Specifically, the SCAQMD is responsible for monitoring air quality and planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards in the district. Such programs include air quality rules and regulations that regulate stationary source emissions, including area and point sources and certain mobile source emissions. The SCAQMD is also responsible for establishing permitting requirements for stationary sources and ensuring that new, modified, or relocated stationary sources do not create net emissions increases and, therefore, are consistent with the region's air quality goals. The SCAQMD enforces air quality rules and regulations through a variety of means, including inspections, educational or training programs, or fines, when necessary.

There are no state or federal ambient air quality standards for volatile organic compounds (VOCs) because they are not classified as criteria pollutants. VOCs are regulated, however, because a reduction in VOC emissions reduces certain chemical reactions that contribute to the formation of ozone (ozone precursors). VOCs are also transformed into organic aerosols in the atmosphere, contributing to higher PM10 (particulate matter less than or equal to 10 microns) and PM2.5 (particulate matter less than or equal to 2.5 microns) and lower visibility levels.

Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOCs because of interference with oxygen uptake. In general, ambient VOC concentrations in the atmosphere are suspected to cause coughing, sneezing, headaches, weakness, laryngitis, and bronchitis, even at low concentrations. Some hydrocarbon components classified as VOC emissions are thought or known to be toxic air contaminants.

SCAQMD Rules 1171 – Solvent Cleaning Operations and 1122 – Solvent Degreasers, are part of SCAQMD's overall effort to control VOC emissions in its area of jurisdiction. Rule 1171 controls VOC emissions by establishing VOC content limits for production, repair, maintenance, and equipment cleaning activities, as well as cleaning operations during servicing of parts, products, tools, machinery, equipment, or general work areas. Also regulated are storage, usage, and disposal practices for solvent laden materials. Industries subject to the provisions of Rule 1171 include any facility that must operate and maintain machinery or must remove contaminants as part of its production process. Rule 1122 controls the VOC emissions from all types of degreasers, including open-top, conveyorized, air-tight and airless, that carry out solvent degreaser operations. Degreasing operations include the removal of contaminants from parts, products, tools, machinery, and equipment.

Due to reported difficulties in working with the compliant cleaning solvents in certain applications, SCAQMD staff is proposing to: 1) extend the Rule 1171 final compliance date to lower the VOC content limit until January 1, 2010 for cleaning solvents used in ultraviolet or electron beam (UV/EB) ink application equipment; 2) extend the Rule 1171 exemption to comply with a lower VOC content limit until January 1, 2010 for: a) cleaning of UV/EB lamps and reflectors; b) cleaning of metering rollers, dampening rollers, and printing plates applicable only to UV/EB ink application equipment; and c) on-press cleaning of screens subject to an interim limit of 300 grams per liter effective on date of adoption; ~~and~~ 3) permanently exempt cleaning products for photocurable resins from stereolithography equipment from complying with any VOC content limit in both Rule 1171 and 1122 and 4) exempt cleaning of application equipment used to apply solvent-based flouropolymer coating provided the clean-up solvent does not contain more than 900 grams of VOC per liter. Although there is a delay in some VOC emission reductions, overall both the rules have achieved 77 tons per day of VOC emission reductions (90 percent of the total inventory). In addition, the affected solvent cleaning categories are relatively low-volume use activities, which limit the research and development efforts of large suppliers.

Extending the final compliance date and the exemptions will result in 280 pounds of VOC per day emission reductions delayed until January 1, 2010, when the proposed final lower VOC content limits become effective. The foregone emission reductions from the permanent exemptions will total 5.56 ~~1.66~~ pounds of VOC per day. The total peak foregone emission reductions of 286 ~~282~~ pounds of VOC per day will exceed the SCAQMD's daily significance operational threshold of 55 pounds of VOC per day and, thus, adverse air quality impacts have been determined to be significant. No other environmental topic area is considered to be adversely affected as a result of the proposed project.

LEGISLATIVE AUTHORITY

The California Legislature created the SCAQMD in 1977 (Lewis-Presley Air Quality Management Act, Health and Safety Code §§ 40400 et seq.), as the agency responsible for developing and enforcing air pollution control rules and regulations within the SCAQMD's area of jurisdiction. By statute, the SCAQMD is required to adopt an Air Quality Management Plan (AQMP) demonstrating compliance with all state and national ambient air quality standards for the SCAQMD's area of jurisdiction [Health and Safety Code § 40460(a)]. Furthermore, the SCAQMD must adopt rules and regulations that carry out the AQMP [Cal. Health and Safety Code, § 40440(a)]. The 2007 AQMP concluded that major reductions in emissions of VOC and NOx are necessary to attain the air quality standards for ozone and PM10. Rules 1171 and 1122 were originally prepared pursuant to these mandates.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

PARs 1171 and 1122 are a "project" as defined by the California Environmental Quality Act (CEQA) (Cal. Public Resources Code §§ 21000 et seq.). The SCAQMD is the lead agency for this project and is preparing the appropriate environmental analysis pursuant to its certified regulatory program (SCAQMD Rule 110). California Public Resources Code § 21080.5 allows public agencies with regulatory programs to prepare a plan or other written document in lieu of an environmental impact report once the Secretary of the Resources Agency has certified the regulatory program. The Secretary of the Resources Agency certified the SCAQMD's regulatory program on March 1, 1989.

A Notice of Preparation and an Initial Study (NOP/IS), including an environmental checklist, were prepared for the 1999 amendments to Rule 1171, which lowered the VOC content limits for the affected solvent cleaning categories. The proposed amendments modify Rule 1171 as amended in 1999 by extending the final compliance date for specified categories of solvents. Because the environmental impacts from the September 2001 amendments for Rule 1122 were not significant, an NOP/IS was not required. The proposed amendments represent a modification of the Rule 1171 amendments adopted in 1999 and the Rule 1122 amendments adopted in 2001 that delay the final compliance date for specified cleaning solvents and no new requirements are proposed that would trigger the need to solicit guidance from responsible and/or trustee parties. Pursuant to CEQA Guidelines § 15060(d), a Notice of Preparation (NOP) is not required when preparing a subsequent EIR or Negative Declaration. Thus, a NOP of an SEA for the proposed project was deemed not required and was not prepared for this project.

CEQA requires that the potential environmental impacts of proposed projects be evaluated and that feasible methods to substantially reduce or avoid any significant adverse environmental impacts of these projects be identified. To fulfill the purpose and intent of CEQA (California Public Resources Code §§ 21000 et seq.), the SCAQMD has prepared this Draft Subsequent Environmental Assessment (SEA) to address the potential adverse environmental impacts associated with implementing PARs 1171 and 1122. The reasons for combining the analysis of impacts from implementing both PARs 1171 and 1122 are the following: 1) both rules regulate the cleaning of photocurable resins from stereolithography equipment and models; 2) the users of cleaning solvents and degreasers are likely to overlap and, thus, are subject to both rules; 3) SCAQMD staff is proposing to exempt the cleaning of photocurable resins from stereolithography equipment and models from complying with a VOC content limit, which is regulated by both rules; and 4.) piece-mealing the potential environmental impacts from separate individual analyses is avoided.

In accordance with CEQA Guidelines § 15162 a Draft SEA was prepared because the modifications to the previously approved projects consist of substantial changes which

will require major revisions to the previously certified EAs due to a substantial increase in the severity of previously identified effects.

The proposed project modifies components of the following previously approved projects: the 1999 amendments to Rule 1171 and the 2001 amendments to Rule 1122, which is when the final compliance limits that would be modified by the currently proposed project were originally adopted. The September 1999 Final EA for Rule 1171 (SCAQMD No. 1171082099JDN) was prepared and certified by the Governing Board on October 8, 1999. Afterwards, three SEAs for Rule 1171 were prepared in February 2005, April 2006 and November 2007 (certified by the Governing Board on May 6, 2005, July 14, 2006, and February 1, 2008, respectively) to analyze the impacts from delaying the final compliance dates for certain solvent cleaning categories including those in the current PAR 1171. The exemption from rule requirements for stereolithography equipment under Rule 1122 was originally provided in the September 2001 Final EA for Rule 1122 (SCAQMD No. 070301JDN). This exemption expired December 31, 2008. Staff is proposing to reinstate this exemption.

SCAQMD's review of the proposed project shows that the project would have a significant adverse effect on the environment. Therefore, pursuant to CEQA Guidelines § 15126.4, feasible mitigation measures which could minimize significant adverse impacts are required if available. In addition, a range of reasonable alternatives to the proposed project is required in accordance with CEQA Guidelines § 15126.6. The analysis in Chapter 4 concludes that adverse air quality impacts are significant. Discussions of the remaining environmental topics support the finding of no significant adverse impacts to these environmental topic areas. Because no feasible mitigation measures were identified to reduce air quality impacts to less than significant, a Statement of Findings and a Statement of Overriding Considerations will be prepared in accordance with CEQA Guidelines §§ 15091 and 15093.

This Draft SEA is intended to: (a) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental effects of the proposed project; and (b) be used as a tool by decision makers to facilitate decision making on the proposed project.

All comments received during the public comment period on the analysis presented in the Draft SEA will be responded to and included in the Final SEA. Prior to making a decision on the proposed amended rule, the SCAQMD Governing Board must review and certify the SEA as providing adequate information on the potential adverse environmental impacts of the proposed amended rule.

CEQA DOCUMENTATION FOR RULES 1171 AND 1122

In addition to this Draft SEA, a number of relevant CEQA documents have been prepared for Rules 1171 and 1122 when they were originally adopted and for subsequent rule amendments. Copies of these documents are available by calling the SCAQMD's Public Information Center at (909) 396-2039. The following subsections briefly summarize the previously prepared relevant CEQA documents for Rules 1171 and 1122.

Rule 1171

Final Subsequent Environmental Assessment for PAR 1171, February 2008: Due to reported difficulties in working with the compliant cleaning solvents in certain applications, SCAQMD staff extended the final compliance with a lower VOC content limit for UV/EB ink application equipment until January 1, 2009; created a new solvent coating subcategory called on-press cleaning of screens and extended the final compliance date by one year; and created a new metering roller, dampening roller, and printing plate category applicable only to UV/EB ink application equipment and extended the final compliance date by one year. Other amendments included new requirements for labeling and reporting from suppliers, as well as removing outdated rule requirements. The analysis of the proposed project showed that the delay in emission reductions would have a significant adverse effect on the environment.

Final Subsequent Environmental Assessment for PAR 1171, July 2006: Because the technology assessment for the cleaning of screen printing, lithographic/letterpress, and ultraviolet or electron beam ink application equipment was still on-going, SCAQMD staff proposed a one-year delay in the implementation of low-VOC limits originally scheduled for July 1, 2006 for these cleaning applications. A new subcategory of lithographic/letter press solvent cleaning activity was being proposed for newsprint and the VOC content limit lowered to 100 grams per liter by July 1, 2006. Other amendments included adding clarifying language to the exemption for aerosol products, establishing a new completion date for the technology assessments and removing outdated rule requirements. The analysis of the proposed project showed that the delay in emission reductions would have a significant adverse effect on the environment.

Final Subsequent Environmental Assessment for PAR 1171, May 2005: The proposed amendments delayed the implementation of low-VOC limits for one year, from July 1, 2005 to July 1, 2006, for the cleaning of screen printing, lithographic/letterpress, and ultraviolet or electron beam ink application equipment and established an interim VOC limit to take advantage of existing products in the market, which have lower VOC content limits than the current rule limit. The proposed amendments also eliminated the exemption for cleaning of solar cells, laser hardware, scientific instruments, and high-precision optics; extended the exemption for the cleaning of stereolithography equipment and models and UV lamps used for curing UV inks or coatings; modified the rule

language to include the most current test methods for determining the efficiency of an emission control system; and eliminated the general prohibition exemption for methylene chloride and perchloroethylene. The analysis of the proposed project showed that the delay in emission reductions would have a significant adverse effect on the environment.

Final Environmental Assessment for PAR 1171, November 2003: The proposed amendments lowered the VOC limit for clean-up solvents used in this industry to the same level expected in 2005 from other industries' coating and adhesive application equipment clean-up. The proposed amendments also clarified rule intent and removed obsolete rule provisions. The analysis of the proposed project showed that the project would not have a significant adverse effect on the environment.

Addendum to the October 1999 Final Environmental Assessment for PAR 1171, July 2002: The Addendum for PAR 1711 was prepared in response to modifications to the previously approved project. The proposed project consisted of advancing the final compliance date from July 1, 2005 to January 1, 2003, which lowered the VOC content limit from 50 grams per liter to 25 grams per liter, for cleaning materials used in certain solvent cleaning activities. Other amendments included compliance with the state airborne toxic control measure, removing obsolete rule provisions and adding clarifying language to enhance rule effectiveness. Accelerating the final compliance date to comply with the lower VOC content limit for solvents used for specified cleaning activities did not result in new or more severe significant adverse effects requiring substantial revisions in the previous EA. An addendum was the appropriate CEQA document for the proposed project because the proposed project constituted a minor change to the previously adopted rule amendments and the changes did not trigger any conditions identified in CEQA Guidelines § 15162. The addendum was not circulated for public review because, pursuant to CEQA Guidelines § 15164(c), an addendum need not be circulated for public review.

Final Environmental Assessment for PAR 1171, October 1999: The 1999 amendments created new subcategories for solvent cleaning activities, including the two-step roller wash process, and reduced the VOC content limits for these new categories. The vapor pressure requirement was deleted, the technology assessment was delayed and exemptions were expanded to include solvents used for architectural coatings, paper-based gaskets and clutch assemblies, photcurable resins, UV lamps, radiation effect coatings and satellite coatings. The environmental topics analyzed in the EA included air quality, water resources, hazards/risk of upset, public services (fire departments), and solid/hazardous waste. The analysis concluded that the amendments would not result in any significant adverse environmental impacts.

Final Subsequent Environmental Assessment for PAR 1171, August 1996: The 1996 amendments reduced the allowable VOC content level of cleaning solvents and composite partial pressure for the general repair and maintenance category. The environmental topics analyzed in the Subsequent EA were air quality, water resources,

risk of upset, public services (fire departments), and energy resources. The analysis concluded that the amendments may result in significant air quality and water resource impacts.

The potential air quality impacts were associated with the electrical heating of certain wash solutions and possibly the rinse water. Drying is also sometimes carried out with electrically heated forced air (low-end applications, such as automotive parts cleaning, typically do not include rinsing and drying). An estimate of the emissions associated with the production of the electricity for use with aqueous cleaning operations was derived based on conservative assumptions. The emissions from electricity production were estimated to be approximately 290 pounds per day (lbs/day), which exceeds the 55 lbs/day NO_x significant threshold and, therefore, was considered significant.

The 1996 EA concluded that the illegal disposal of hazardous wastewater (i.e., spent aqueous cleaning baths) had the potential to exceed regulatory effluent limits set by the state and implemented by publicly owned treatment works (POTWs). It was concluded that these amendments may result in significant adverse water quality impacts even though: 1) proper treatment or disposal would preclude this effect, 2) some solvent cleaning operators may currently be illegally disposing of spent cleaning materials, and 3) the magnitude of the impact on sanitation districts, if any, is unknown. Mitigation for potential water quality impacts from aqueous cleaning materials was set forth as part of the adoption of the 1996 amendments to Rule 1171[1].

Final Supplemental Environmental Assessment for PAR 1171, April 1995: The 1995 amendments corrected deficiencies identified by the United States Environmental Protection Agency (U.S. EPA) and addressed concerns identified by SCAQMD staff and various affected industries. Highlights of the 1995 amendments include: addition of medical device and special flexographic printing categories; clarification of the polyester resin application equipment cleaning provision; removal of the size limitation of hand-held spray bottles; removal of draft rate for remote reservoir cleaners; addition of several exemptions; and the addition of new and modified test methods.

The amendments had no effect on the actual emissions resulting from solvent cleaning operations. Revised emission calculations performed during the 1995 amendment process indicated that baseline emissions and predicted emission reductions were slightly underestimated during the initial rulemaking. The net effect of the revised calculations demonstrated that Rule 1171 obtained 0.2 ton per day greater VOC emission reductions than originally anticipated.

[1] Subsequent to the 1996 analysis for amendments to Rule 1171, similar water quality impacts were identified for proposed amendments to SCAQMD Rule 1122 – Solvent Degreasers. Based upon discussions with local POTWs, the EA for those amendments incorporated and expanded upon the mitigation measures included in the 1996 Rule 1171 EA.

Since the amendments to Rule 1171 did not increase emissions and had no adverse impact in any other environmental area, their implementation did not result in any significant adverse environmental impacts.

Final Environmental Assessment, August 1991, included as part of the document entitled: Final Staff Report for Proposed Rule 1171 – Solvent Cleaning Operations (Rule Development Assessment; Environmental Assessment; Socio-Economic Assessment): The 1991 EA was prepared for the original adoption of Rule 1171 and identified and analyzed the proposed rule's potential environmental impacts in the following categories: air quality, global warming and stratospheric ozone depletion, water resources, noise, risk of upset, public services, energy, solid waste, and public health. None of the potential impacts analyzed were determined to be significant. The 1991 EA also analyzed the relationship between short-term uses and long-term productivity, irreversible environmental changes, growth inducing impacts, cumulative impacts, and the relative merits of potential project alternatives.

Rule 1122

Final Environmental Assessment for PAR 1122, October 2004: The amendments allowed for continued use, beyond January 1, 2005, of degreasers with open-top surface areas less than one square foot, or with a capacity less than two gallons only for certain applications, provided such degreasers are vented to a VOC emission control system capable of collecting at least 90 percent, by weight, of the emissions generated by the solvent degreaser and a destruction efficiency of at least 95 percent by weight. In addition, a permanent exemption was established for small-sized degreasers used for research and development programs, or laboratory tests in quality assurance laboratories, as well as an exemption for batch-loaded cold cleaners and vapor degreasers with open-top surface areas less than one square foot, or with a capacity of less than two gallons used only to clean electronic parts designed to travel over 100 miles above the earth's surface. Further, the exemption for cleaning up photocurable resins from stereolithography equipment and models was extended to December 31, 2008. The EA concluded that the delay and foregone emission reductions would not exceed the SCAQMD's significance thresholds and therefore the air quality impacts were considered not significant.

Final Environmental Assessment for PAR 1122, December 2002: The Rule 1122 amendments extended the sunset date of January 1, 2005, for the existing exemption of small batch-loaded cold cleaners and vapor degreasers from the requirements of Rule 1122. In addition, the amendments added the definition of "high precision optics" to clarify that it has the same meaning as that in Rule 1171. Further, the rule required a Technology Assessment by year 2004 to determine whether to retain the exemption of small batch-loaded cold cleaners and vapor degreasers from the requirements of Rule 1122. The EA concluded that the delay and foregone emission reductions would not

exceed the SCAQMD's significance thresholds and therefore the air quality impacts were considered not significant.

Final Environmental Assessment for PAR 1122, September 2001: The proposed amendments lowered the material VOC limit to 25 g/l for VOC cold cleaners and vapor degreasers and changed equipment requirements for NESHAP degreasers. In addition, rule language was being modified to delete obsolete requirements, add new definitions, and add new exemptions including the cleaning of photocurable resins from stereolithography equipment and models. The EA concluded that the delay and foregone emission reductions would not exceed the SCAQMD's significance thresholds and therefore the air quality impacts were considered not significant.

INTENDED USES OF THIS DOCUMENT

In general, a CEQA document is an informational document that informs a public agency's decision-makers, and the public generally, of potentially significant adverse environmental effects of a project, identifies possible ways to avoid or minimize the significant effects, and describes reasonable alternatives to the project (CEQA Guidelines § 15121). A public agency's decision-makers must consider the information in a CEQA document prior to making a decision on the project. Accordingly, this Draft SEA is intended to: (a) provide the SCAQMD Governing Board and the public with information on the environmental effects of the proposed project; and (b) be used as a tool by the SCAQMD Governing Board to facilitate decision making on the proposed project.

Additionally, CEQA Guidelines § 15124(d)(1) requires a public agency to identify the following specific types of intended uses of a CEQA document:

1. A list of the agencies that are expected to use the EA in their decision-making;
2. A list of permits and other approvals required to implement the project; and
3. A list of related environmental review and consultation requirements required by federal, state, or local laws, regulations, or policies.

To the extent that local public agencies, such as cities, county planning commissions, etc., are responsible for making land use and planning decisions related to projects that must comply with the proposed amendments to Rules 1171 and 1122, any of them could possibly rely on this SEA during their decision-making process. Similarly, other single purpose public agencies approving projects at facilities complying with the proposed amendments to Rules 1171 and 1122 may rely on this SEA. However, no additional approvals or permits are required to implement the project and no additional environmental review or consultation requirements exist.

AREAS OF CONTROVERSY

In accordance with CEQA Guidelines § 15123(b)(2), the areas of controversy known to the lead agency including issues raised by agencies and the public shall be identified in the EA. Table 1-1 highlights the areas of controversy raised by the public during the rule development process either in public meetings or in written comments.

TABLE 1-1

Areas of Controversy

	Area of Controversy	Topics Raised by Public	SCAQMD Evaluation
1.	Compliance with final VOC content limit requirement	Extend exemption for the cleaning of application equipment using solvent-borne fluoropolymer coating	The SCAQMD believes the affected solvent activity is able to comply with the final VOC content limit and an extension is not warranted. However, Alternative D in Chapter 5 permanently extends the exemption for the cleaning of equipment using solvent-borne fluoropolymer coating provided solvent contains no more than 900 g/l ~~to 1/01/10~~.
2.	Compliance with final VOC content limit requirement	Extend exemption for the automatic cleaning equipment used in screen reclamation	The SCAQMD believes the affected solvent activity is able to comply with the final VOC content limit and an extension is not warranted. However, Alternative D in Chapter 5 extends the exemption for the automatic cleaning equipment used in screen reclamation provided solvents contain no more than 500 g/l to 1/01/10.

EXECUTIVE SUMMARY

CEQA Guidelines § 15023 requires a CEQA document to include a brief summary of the proposed actions and their consequences. The organization of this Draft SEA is as follows: Chapter 1 –Executive Summary; Chapter 2 – Project Description; Chapter 3 – Existing Setting; Chapter 4 – Environmental Impacts and Mitigation Measures; Chapter 5 – Project Alternatives; and Chapter 6 – Other CEQA Topics. The following subsections briefly summarize the contents of each chapter.

Summary of Chapter 1 –Executive Summary

This chapter contains a discussion of the legislative authority of the SCAQMD to adopt rules and regulations to implement the current AQMP, identifies general CEQA requirements, the intended uses of this CEQA document, areas of controversy, and summarizes the remaining five chapters that comprise this Draft SEA.

Summary of Chapter 2 – Project Description

In addition to including a description of the project location, Chapter 2 also includes a rule development background and project description of PARs 1171 and 1122. Briefly, the proposed amendments to Rules 1171 and 1122 would:

- extend the final compliance date to lower the VOC content limit for cleaning solvents used in UV/EB ink application equipment;
- extend the exemption to comply with a lower VOC content limit for cleaning of UV/EB lamps and reflectors used for curing of UV/EB ink or coatings;
- extend the exemption to comply with a lower VOC content limit for the cleaning of metering rollers, dampening rollers, and printing plates applicable only to UV/EB ink application equipment;
- <u>exempt cleaning of application equipment used to apply solvent-based flouropolymer coating provided the clean-up solvent does not contain more than 900 grams of VOC per liter;</u>
- extend the exemption to comply with a lower VOC content limit for on-press cleaning of screens subject to an interim limit of 300 grams per liter effective on date of adoption; and
- reinstate the exemption for the cleaning of photocurable resins from stereolithography equipment from compliance with a VOC content limit.

For a complete description of the proposed amendments to Rules 1171 and 1122 the reader is referred to Appendix A.

Summary of Chapter 3 – Existing Setting

Pursuant to the CEQA Guidelines § 15125, Chapter 3 – Existing Setting, includes descriptions of those environmental areas that could be adversely affected by PARs 1171 and 1122. The following subsection briefly highlights the existing setting for air quality, which is the only environmental area that could be adversely affected by implementing the proposed project.

Air Quality

Over the last two decades, there has been significant improvement in air quality within the area of the SCAQMD's jurisdiction. Nevertheless, several air quality standards are still exceeded frequently and by a wide margin. Of the National Ambient Air Quality Standards (NAAQS) established for seven criteria pollutants (ozone, lead, sulfur dioxide, nitrogen dioxide, carbon monoxide, PM10 and PM2.5), the area within the SCAQMD's jurisdiction is in attainment with the sulfur dioxide, nitrogen dioxide, carbon monoxide

and lead standards. Chapter 3 provides a brief description of the existing air quality setting for each criteria pollutant, as well as the human health effects resulting from each criteria pollutant.

Baseline Emission Inventory

To assess the emissions impacts of PARs 1171 and 1122, staff used the emissions data presented in the staff report for the July 2006 amendment to Rule 1171 and the October 2004 staff report for PAR 1122 in evaluating the emissions impact of the proposed project. The emissions inventory analysis in this section is based on years 2006 and 2004 currency; therefore, no growth factors are included in the emissions inventory.

Summary of Chapter 4 – Environmental Impacts and Mitigation Measures

CEQA Guidelines § 15126.2(a) requires a CEQA document to "identify and focus on the significant environmental effects of the proposed project…Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects."

The following subsection briefly summarizes the analysis of potential adverse environmental impacts from the adoption and implementation of PARs 1171 and 1122.

Air Quality

The proposed rule will delay compliance for one solvent cleaning category, extend an existing exemption from the rule requirements for three solvent cleaning categories and permanently exempt cleaning solvents used in stereolithography equipment. The analysis concludes that the delay in VOC emission reductions, along with the extended/permanent exemptions, will result in significant adverse air quality impacts.

Mitigation

Table 1-2 summarizes the impacts and mitigation measures associated with the environmental impact areas that the SCAQMD analyzed for PARs 1171 and 1122.

TABLE 1-2

Environmental Impacts from the Proposed Project

Environmental Impact Area	Significance Determination	Mitigation Measures
Air Quality – Criteria Pollutants (VOCs)	Significant (due to delay in VOC emission reductions)	No mitigation measures identified.
Non-Criteria Pollutants (TACs)	Not Significant	None required.

Environmental Impacts Found Not To Be Significant

Although the proposed project delays the final compliance date for specified solvent products, the final VOC content limit will not change. As a result, implementing the proposed project will not change the analysis and conclusions made in the Final EA prepared for the 1999, 2005, 2006 and 2008 amendments to Rule 1171 and the 2004, 2002 and 2001 amendments to Rule 1122 when the final VOC content limits were originally introduced. As such, no direct or indirect adverse impacts will result for the remaining 16 environmental topic areas. Chapter 4 includes discussions that confirm there will be no significant adverse impacts to the following environmental resources in the SCAQMD's jurisdiction as a result of implementing PARs 1171 and 1122:

- Aesthetics
- Agricultural Resources
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Solid/Hazardous Waste
- Transportation/Circulation

Summary of Chapter 5 – Project Alternatives

Chapter 5 provides a discussion of alternatives that could feasibly attain most of the basic objectives of the project but would avoid or substantially lessen significant adverse effects of the proposed project. The alternatives analyzed provide a means for evaluating the comparative merits of each alternative. The alternatives are viable options to the proposed project and all, or parts, of the alternatives can be chosen by the decision-making body (e.g., SCAQMD Governing Board) to become the proposed project. For this reason, the public is encouraged to review the environmental analysis since the potential environmental impacts from implementing all, or parts, of the alternatives may

be generated if chosen to become the proposed project. Table 1-3 lists the description of the alternatives considered by the SCAQMD compared to PARs 1171 and 1122. Table 1-4 lists the potentially significant environmental impacts resulting from implementing the alternatives as compared to the proposed project.

Summary of Chapter 6 – Other CEQA Topics

The CEQA Guidelines require a CEQA document to address the potential for irreversible environmental changes (§ 15126.2(c)), growth-inducing impacts (§ 15126.2(d)), and inconsistencies with regional plans (§ 15125(d)). Analysis of the proposed project confirms that it would not result in irreversible environmental changes or the irretrievable commitment of resources, foster economic or population growth or the construction of additional housing (see Chapter 4). Since the proposed project ultimately achieves originally anticipated VOC emission reductions it is not considered to be inconsistent with the 2007 AQMP. As explained in Chapter 4, the proposed project is also not inconsistent with the Southern California Association of Governments' (SCAG) Regional Comprehensive Plan and Guide (RCPG).

TABLE 1-3

Comparison of Proposed Project to the Alternatives

Proposed Project	**Alternative A** (No Project)	**Alternative B** (Interim Limits Alternative)	**Alternative C** (Two-Year Delay in Final Compliance Deadlines Alternative)	**Alternative D** (More Solvent Cleaning Activities Alternative)
R E Q U I R E M E N T S [subdivision (c)]				
Delay final compliance date for cleaning solvents used in UV/EB ink application equipment to 1/01/10.	Maintain final compliance date of 1/01/09 to lower VOC content for UV/EB ink application equipment.	Interim limit of 500 g/l for cleaning solvents used in UV/EB ink application equipment until 1/01/10.	Delay final compliance date for cleaning solvents used in UV/EB ink application equipment to 1/01/11.	Same as Proposed Project
E X E M P T I O N S [subdivision (g)]				
Extend exemption for the cleaning of UV/EB lamps and reflectors used in curing of UV/EB ink or coatings to 1/01/10.	Exemption expired at 1/01/09 for the cleaning of UV/EB lamps and reflectors used in curing of UV/EB ink or coatings.	Interim limit of 650 g/l for the cleaning of UV/EB lamps and reflectors used in curing of UV/EB ink or coatings until 1/01/10.	Extend exemption for the cleaning of UV/EB lamps and reflectors used in curing of UV/EB ink or coatings to 1/01/11.	Same as Proposed Project
Extend exemption for the cleaning of metering rollers, dampening rollers and printing plates in UV/EB ink application equipment to 1/01/10.	Exemption expired at 1/01/09 for the cleaning of metering rollers, dampening rollers and printing plates in UV/EB ink application equipment.	Interim limit of 650 g/l for the cleaning of metering rollers, dampening rollers and printing plates in UV/EB ink application equipment until 1/01/10.	Extend exemption for the cleaning of metering rollers, dampening rollers and printing plates in UV/EB ink application equipment to 1/01/11.	Proposed Project and permanently exempt the cleaning of equipment using solvent- borne fluoropolymer coating upon date of adoption provided solvents contain no more than 900 g/l.
Extend exemption for on-press cleaning of screens provided solvent contains no more than 300 g/l to 1/01/10.	Exemption expired at 1/01/09 for on-press cleaning of screens.	Same as Proposed Project	Extend exemption for on-press cleaning of screens provided solvent contains no more than 300 g/l to 1/01/11.	Extend exemption for on-press cleaning of screens and automatic cleaning used in screen reclamation provided solvents contain no more than 500 g/l to 1/01/10.
Permanently exempt cleaning of photocurable resins from stereolithography equipment.	Exemption expired on 12/31/08 for the cleaning of photocurable resins from stereolithography equipment.	Impose 900 g/l VOC content limit for cleaning of photocurable resins from stereolithography equipment upon date of adoption.	Same as Proposed Project	Same as Proposed Project

TABLE 1-4

Comparison of Adverse Environmental Impacts of Proposed Project to the Alternatives

Environmental Topic	**Proposed Project**	**Alternative A** (No Project)	**Alternative B** (Interim Limits)	**Alternative C** (Two-Year Delay in Final Compliance Deadlines)	**Alternative D** (More Solvent Cleaning Activities)
Air Quality – Criteria Pollutants (VOCs)	Significant (280 pounds/day delay in VOC emission reductions until 1/01/10; 5.56 ~~1.66~~ pounds/day permanently foregone)	Significant, Same as Proposed Project (282 pounds/day delay in VOC emission reductions until enforcement discretion is lifted)	Significant, Less than Proposed Project (220 pounds/day delay in VOC emission reductions until 1/01/10)	Significant, Greater than Proposed Project (280 pounds/day delay in VOC emission reductions until 1/01/11; 1.66 pounds/day permanently foregone)	Significant, Greater than Proposed Project (420 pounds/day delay in VOC emission reductions until 1/01/10; 6.66 pounds/day permanently foregone)
Non-Criteria Pollutants (TACs)	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant

CHAPTER 2

PROJECT DESCRIPTION

Project Location

Background

Project Objectives

Project Description

PROJECT LOCATION

PARs 1171 and 1122 would apply within the SCAQMD's entire jurisdiction. The SCAQMD has jurisdiction over an area of 10,473 square miles (referred to hereafter as the district), consisting of the four-county South Coast Air Basin (Basin) and the Riverside County portions of the Salton Sea Air Basin (SSAB) and the Mojave Desert Air Basin (MDAB). The Basin, which is a subarea of the SCAQMD's jurisdiction, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The 6,745 square-mile Basin includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB and MDAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. The federal nonattainment area (known as the Coachella Valley Planning Area) is a subregion of both Riverside County and the SSAB and is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (Figure 2-1).

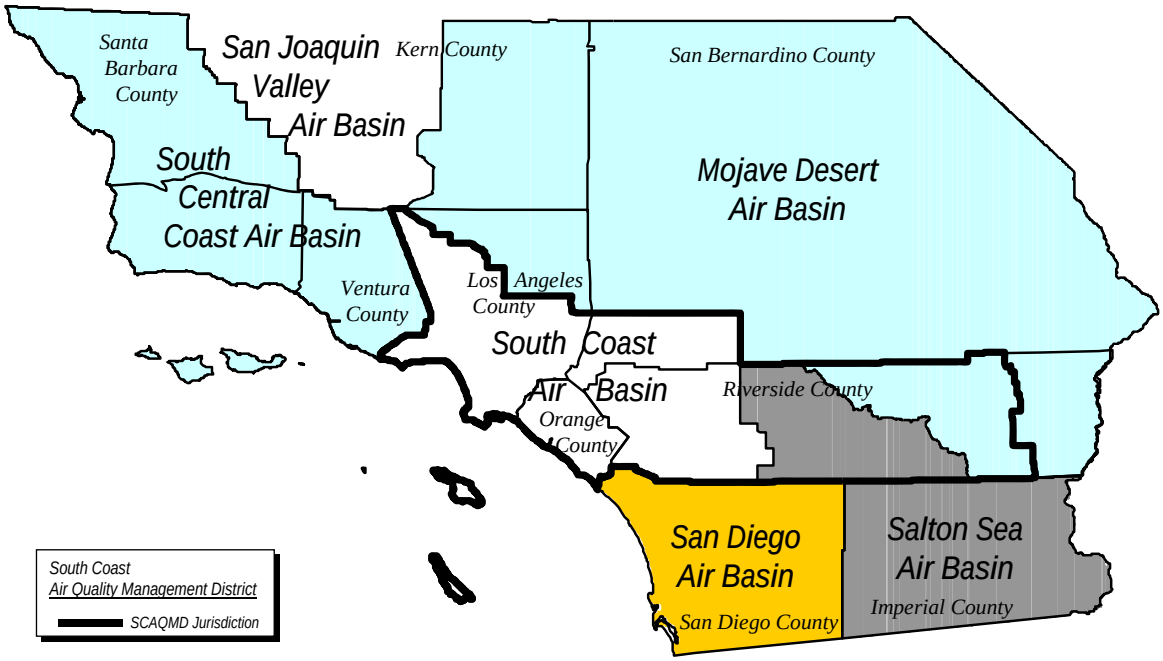

FIGURE 2-1

South Coast Air Quality Management District

BACKGROUND

Rule Development

Rule 1171: Rule 1171 – Solvent Cleaning Operations, a key component of SCAQMD ozone reduction strategy, was originally adopted on August 2, 1991 to reduce VOC emissions from the use of solvents and solvent wastes generated during the production, repair, maintenance, or servicing of products, tools, machinery, and general work areas. Subsequent rule amendments expanded the scope of the rule to cover all solvent cleaning activities, except cleaning activities using solvent degreasers, at all facilities.

The October 1999 amendment to Rule 1171, which implement the 1999 AQMP amendment control measure CTS-02C(P2), established a two-tiered approach in lowering the VOC content limits for all solvent cleaning activities. Tier I requirements were implemented on December 1, 2001, and reduced VOC emissions by six tons per day from solvent cleaning activities. The second tier compliance requirements became effective July 1, 2005, with an estimated emission reduction of nine tons per day. These emission reductions were expected to be achieved through greater use of aqueous cleaning technologies and VOC-exempt solvents, or through the development of new low-VOC cleaning materials. In addition, the 1999 amendment to Rule 1171 required that a technology assessment be conducted for specific cleaning categories in order to determine the feasibility of the Tier II VOC content limits for affected categories. The amendment also required a study of the effect of vapor pressure on the total mass emissions of VOCs from the use of cleaning solvents.

In August 2002, Rule 1171 was further amended to accelerate the reduction of 1.94 tons per day of the VOC emissions from general solvent cleaning activities by two and one-half years by requiring compliance with the VOC content limits in 2003 instead of 2005. At that time, many available low-VOC cleaning materials were already meeting the Tier II VOC content limit of 25 grams per liter for general cleaning applications. As a result, the compliance date for the 25 grams per liter VOC limit for general cleaning applications was advanced to January 1, 2003.

The November 2003 amendment to Rule 1171 achieved an expected VOC emission reduction of about seven and one-half tons per day by eliminating the exemption for the cleaning of architectural coating application equipment starting July 1, 2005. This amendment implemented the clean-up solvent portion of two control measures (CM#2003CTS-07 and CTS-10 (P1)) in the 2003 AQMP.

The May 2005 amendment of Rule 1171 extended to July 1, 2006, the compliance date for the Tier II VOC content limits for the category of cleaners used by ink application equipment used for lithography/letterpress, screen printing and UV/EB inks. In addition to extending the compliance date, the May 2005 amendment established an interim VOC limit of 500 grams per liter beginning July 1, 2005, for cleaning of lithographic/letterpress, screen printing, and UV/EB ink application equipment.

The 2008 amendments allowed a one-year delay of the final compliance date for cleaning solvents used in UV/EB ink application equipment and established two new subsets from an existing regulated solvent cleaning category. One new subcategory was the on-press cleaning of screens in the screen printing activity and the other was the cleaning of metering rollers, dampening rollers and printing plates used in UV/EB ink application equipment only (as opposed to all application equipment). These two new subcategories provided a one-year extension from the original existing solvent category compliance date to comply with the lower VOC content limit of 100 grams per liter, provided that the VOC content limit did not exceed the currently required VOC content limit then in effect.

Prior amendments to Rule 1171 have extended the effective dates for the use of low-VOC cleanup solvents for UV/EB inks, on-press screens, and stereolithography equipment to December 31, 2008. A recently completed evaluation by the printing industry concluded that the currently available solvents do not meet industry's performance criteria. Consequently, industry has requested an extension of the compliance date to allow additional time for reformulation and testing. Staff plans to propose amendments to Rule 1171 to the Board at a later date to address this request. In the meantime, staff proposes to exercise enforcement discretion for the low-VOC limits that went into effect January 1, 2009.

Although there is a delay in some VOC emission reductions from the proposed project, Rule 1171 has achieved 38 tons per day of VOC emission reductions since adoption.

Rule 1122: Rule 1122 - Solvent Degreasers, was adopted on March 2, 1979 primarily to control VOC emissions from solvent degreasing operations. The rule establishes both equipment and operating requirements for any type of solvent degreasing operation conducted at industrial, commercial or institutional facilities.

Solvent degreasing can be conducted as either a batch or conveyorized operation. With each of these methods, the solvent can be used in either the liquid or vapor state. When solvent is used as a liquid (cold cleaning), the part to be cleaned is lowered into and raised from the bath, and allowed to drain and dry. The cleaning process can be facilitated by the use of agitation or solvent spray.

When the solvent is used as a vapor (vapor degreasing), the hot vapors condense on the cold article, transferring the dirt and grease to the solvent. When the article reaches the temperature of the vapor, no further condensation occurs. The clean article dries and is removed from the degreaser. This vapor cleaning process has been used for many extensive and difficult cleaning operations.

Many industrial facilities use various solvents for cleaning and degreasing. Facilities that use VOC-containing solvents fall under the provisions of Rule 1122. They vary from small users to major manufacturing operations that may have very sophisticated cleaning and degreasing facilities. Among the small users are machine shops, which use batch-loaded cold cleaners for their degreasing operations. A batch-loaded cold cleaner is a degreaser that is designed to contain liquid solvent at a temperature below its boiling point.

The 1997 amendments to Rule 1122 required that cleaning materials used in cold cleaning operations contain no more than 50 grams per liter of VOC. The 1997 amendments also included a limited exemption that allowed the continued use of high VOC solvents until January 1, 2003 for small[2] batch-loaded cold cleaners and vapor degreasers for specific types of cleaning applications. These cleaning applications included electrical, high precision optics or electronics applications; or aerospace and military applications for cleaning solar cells, laser hardware, space vehicle components, fluid systems and components used solely in research and development programs, or laboratory tests in quality assurance laboratories. The solvents used in these categories of equipment are limited to less than five gallons per calendar month.

In 2001, Rule 1122 was further amended to reduce the VOC content limit to 25 grams per liter for cold cleaning materials used in cleaning operations by January 1, 2003. In 2002, the exemption for small batch-loaded cold cleaners and vapor degreasers was extended for two years from January 1, 2003 to January 1, 2005. The 2004 amendments to Rule 1122 implemented recommendations from a technology assessment, such as allowing the use of an alternative emission control system if the equipment is used only for: 1) cleaning high-precision optics, electrical or electronic components; or 2) aerospace and military applications. The 2004 amendments further exempted cleaning solar cells, laser hardware, fluid systems, and space vehicle components. The 2004 amendments to Rule 1122 also exempted from the VOC control requirements small batch-loaded cold cleaners and vapor degreasers used solely for research and development programs, laboratory tests in quality assurance laboratories, or used only for cleaning electronic parts that are designed to travel over 100 miles above the earth's surface.

Prior amendments to Rule 1122 have extended the effective dates for the use of low-VOC cleanup solvents for stereolithography equipment to December 31, 2008. A recently completed evaluation by the printing industry concluded that the currently available solvents do not meet industry's performance criteria. Consequently, industry has requested a permanent exemption. Staff plans to propose amendments to Rule 1122 to the Board at a later date to address this request. In the meantime, staff proposes to exercise enforcement discretion for the low-VOC limits that went into effect January 1, 2009.

Although there is a delay in some VOC emission reductions from the proposed project, Rule 1171 has achieved 39 tons per day of VOC emission reductions since adoption.

PROJECT OBJECTIVES

The objectives of PARs 1171 and 1122 are to:

1. Provide sufficient time for industry to complete longer-term performance testing, solve the challenges presented by using the reformulated cleaning solvents, and transition to the new cleaning solvents used in UV/EB ink application equipment; the

[2] Open-top surface area less than one square foot or a capacity of less than two gallons.

cleaning of UV/EB lamps and reflectors; metering rollers, dampening rollers and printing plates in UV/EB ink application equipment; and on-press cleaning of screens in screen printing by extending the current exemptions until January 1, 2010.

2. Reinstate an exemption for the cleaning of photocurable resins from stereolithography equipment and models that expired December 31, 2008.

PROJECT DESCRIPTION

The printing industry conducted test programs, including lithography and UV/EB studies by the Printing Industries of California (PIC) and screen printing testing by Specialty Graphics Imaging Association (SGIA). The test programs, which analyzed low-VOC formulations performed in actual production environment, involved printers and solvent formulators. Quarterly progress reports were sent to the SCAQMD. The test results revealed that the currently available 100 g/l VOC solvents do not meet performance criteria for lithographic UV/EB inks and on-press screens in screen printing. Low-VOC solvents worked well for final VOC content limit for the automatic cleaning used in screen reclamation and the 300 g/l VOC range was successful for the cleaning of on-press cleaning of screens. The affected industry has requested for an extension of 100 g/l VOC requirement and, for stereolithography, research by manufacturers failed to find acceptable low-VOC alternative cleaners.

After continuing site visits and studies, SCAQMD staff concluded that more time was warranted for the manufacturers of certain cleaning solvent categories to reformulate specific categories of cleaing solvents. Thus, the 2009 amendments to Rule 1171 will delay the compliance until January 1, 2010 to achieve the final VOC content limit for cleaning solvents used in UV/EB ink application equipment to January 1, 2010 and reinstate exemptions for three coating categories – UV/EB lamps and reflectors; metering rollers, dampening rollers and printing plates; and on-press cleaning of screens. In addition, cleaning of photocurable resins from stereolithography equipment will be permanently exempt from any VOC content limit in both Rules 1171 and 1122 <u>as well as the cleaning of application equipment used to apply solvent-based flouropolymer coating provided the clean-up solvent does not contain more than 900 grams of VOC per liter</u>.

Rule 1171

The proposed amendments to Rule 1171 include the following components, listed in the order they appear in the rule:

Purpose and Applicability (subdivision a)

No changes are proposed to this subdivision.

Definitions (subdivision b)

- Definition for "Newsprint" [paragraph (b)(32)] has been deleted because the specific listing of newsprint as a separate solvent cleaning activity has been removed from the rule. Newsprint is now subject to the requirements of the roller wash, blanket wash and on-press component solvent cleaning category.

Requirements (subdivision c)

- The currently January 1, 2009 compliance date has been extended to January 1, 2010 to implement low-VOC solvent requirements (100 grams per liter or less of VOC) for solvents used in cleaning UV/EB ink application equipment [clause (c)(1)(D)(vi)].

TABLE 2-1

Proposed VOC Content Limits for Rule 1171

Solvent Cleaning Activity	**Current VOC Content Limit** (grams/liter)	**January 1, 2010 VOC Content Limit** (grams/liter)
(vi) UV/EB Ink Application Equipment	650	100

- Outdated compliance dates have been deleted for the following cleaning solvent activities:
    - Roller wash, blanket wash and on-press components [subclause (c)(1)(D)(iv)(A)].
    - Screen printing equipment [clause (c)(1)(D)(v)].
- Outdated compliance dates have been deleted for existing requirements [paragraphs (c)(7) and (c)(8)].

General Prohibitions (subdivision d)

No changes are proposed to this subdivision.

Test Methods (subdivision e)

No changes are proposed to this subdivision.

Rule 442 Applicability (subdivision f)

No changes are proposed to this subdivision.

Exemptions (subdivision g)

- Remove compliance date, thereby, providing a permanent exemption from complying with a VOC content limit for the cleaning of photocurable resins from stereolithography equipment and models [subparagraph (g)(3)(G)].

- Delete the exemption for cleaning of UV/EB lamps and reflectors used for curing of UV/EB ink or coatings [subparagraph (g)(3)(H)] and move to exemption paragraph (g)(10).

- Reinstate ~~Remove~~ the exemption for the cleaning of application equipment used to apply solvent-borne fluoropolymer coatings ~~because the exemption~~ that expired December 31, 2008 provided the clean up solvent used for such cleaning contains no more than 900 grams of VOC per liter [subparagraph (g)(5)(C)].

- Remove two exemptions for metering rollers, dampening rollers, printing plates, automatic roller and blanket cleaning systems because the exemption expired December 31, 2007 [paragraphs (g)(7) and (g)(8)].

- Extend the exemption for cleaning solvents used for on-press cleaning of screens provided the clean up solvent used for such cleaning activity contains no more than 300 g/l of VOC, which is lower than the current 500 g/l of VOC [paragraph (g)(9)].

- Remove the exemption for automatic cleaning equipment used in screen reclamation, making it subject to the 100 g/l VOC content limit [paragraph (g)(9)].

For a complete description of PAR 1171, the reader is referred to Appendix A of this Draft SEA.

Rule 1122

The proposed amendments to Rule 1122 include the following components, listed in the order they appear in the rule:

Purpose and Applicability (subdivision a)

No changes are proposed to this subdivision.

Definitions (subdivision b)

No changes are proposed to this subdivision.

Work Practice Requirements (subdivision c)

No changes are proposed to this subdivision.

Control Standards for Batch-Loaded and Conveyorized (In-Line) Cold Cleaners (subdivision d)

No changes are proposed to this subdivision.

Design Requirements and Control Standards for Open-Top and Conveyorized (In-Line) Vapor Degreasers (subdivision e)

- Delete outdated compliance date for an existing requirement [paragraph (e)(3)].

Airless/Air-tight Cleaning System Requirements (subdivision f)

No changes are proposed to this subdivision.

Degreasers using NESHAP Halogenated Solvents (subdivision g)

No changes are proposed to this subdivision.

Compliance Test Methods (subdivision h)

No changes are proposed to this subdivision.

Monitoring, Recordkeeping and Reporting (subdivision i)

No changes are proposed to this subdivision.

General Prohibitions (subdivision j)

No changes are proposed to this subdivision.

Exemptions (subdivision k)

- Remove the exemption for vapor degreasers using materials that contain 50 g/l of VOC that expired January 1, 2006 [subparagraph (k)(1)(A)].
- Delete an outdated effective date for an existing exemption [subparagraph (k)(1)(B)].
- Remove the exemption for the batch-loaded cold cleaners and vapor degreasers with open top surface areas less than 1.0 square foot or capacity less than two gallons because the various expiration dates have passed [subparagraph (k)(1)(C)].
- Delete outdated effective date for an existing exemption [subparagraph (k)(1)(D)].

- Add a new exemption option to an existing exemption, which currently requires 90 percent VOC emission collection, etc., or extend the exemption to equipment where the output is 50 parts per million or less calculated as carbon with no dilution [clause (k)(1)(D)(ii)].

- Delete outdated effective dates for three existing exemptions [subparagraphs (k)(1)(E), (k)(1)(F), and (k)(1)(H)].

For a complete description of PAR 1122, the reader is referred to Appendix A of this Draft SEA.

CHAPTER 3

EXISTING SETTING

Existing Setting

Air Quality

Baseline Emission Inventory

EXISTING SETTING

In order to determine the significance of the impacts associated with a proposed project, it is necessary to evaluate the project's impacts against the backdrop of the environment as it exists at the time the notice of preparation is published or at the time the environmental review is commenced. The CEQA Guidelines defines "environment" as "the physical conditions that exist within the area which will be affected by a proposed project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance" (CEQA Guidelines § 15360; see also Public Resources Code § 21060.5). Furthermore, a CEQA document must include a description of the physical environment in the vicinity of the project from both a local and regional perspective (CEQA Guidelines § 15125). Therefore, the "environment" or "existing setting" against which a project's impacts are compared consists of the contemporaneous physical conditions, rather than some hypothetical conditions reflecting build-out under existing land use designations (Remy, et al; 2007).

Staff has evaluated the proposed amendments to Rules 1171 and 1122 and has concluded that air quality is the only environmental topic area that has the potential of being adversely affected as a result of implementing the proposed project. Since air quality is the only environmental topic area that could be adversely affected by the proposed project, only the existing setting for air quality is described in the following section.

AIR QUALITY

It is the responsibility of the SCAQMD to ensure that state and federal ambient air quality standards are achieved and maintained in its geographical jurisdiction. Health-based air quality standards have been established by California and the federal government for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), particulate matter less than 10 microns (PM10), particulate matter less than 2.5 microns (PM2.5), and lead. These standards were established to protect sensitive receptors with a margin of safety from adverse health impacts due to exposure to air pollution. The California standards are more stringent than the federal standards and in the case of PM10 and SO2, far more stringent. California has also established standards for sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride. The state and national ambient air quality standards for each of these pollutants and their effects on health are summarized in Table 3-1.

The SCAQMD monitors levels of various criteria pollutants at 34 monitoring stations. The 2007 air quality data, the last year of data available, from SCAQMD's monitoring stations are presented in Table 3-2.

TABLE 3-1

State and Federal Ambient Air Quality Standards

AIR POLLUTANT	STATE STANDARD	FEDERAL PRIMARY STANDARD	MOST RELEVANT EFFECTS
	CONCENTRATION, AVERAGING TIME		
Carbon Monoxide (CO)	20 ppm, 1-hour average > 9.0 ppm, 8-hour average >	35 ppm, 1-hour average > 9 ppm, 8-hour average >	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and, (d) Possible increased risk to fetuses.
Ozone (O_3)	0.09 ppm, 1-hour average > 0.07 ppm, 8-hour average >	0.12 ppm, 1-hour average > 0.075 ppm, 8-hour average >	(a) Short-term exposures: 1) Pulmonary function decrements and localized lung edema in humans and animals; and, 2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; and, (d) Property damage.
Nitrogen Dioxide (NO_2)	0.18 ppm, 1-hour average > 0.030 ppm, annual average >	0.0534 ppm, AAM >	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and, (c) Contribution to atmospheric discoloration.
Sulfur Dioxide (SO_2)	0.25 ppm, 1-hour average > 0.04 ppm, 24-hour average >	0.03 ppm, AAM > 0.14 ppm, 24-hour average > 0.50 ppm, 3-hour average >	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
Suspended Particulate Matter (PM10)	20 µg/m^3, AAM > 50 µg/m^3, 24-hour average >	150 µg/m^3, 24-hour average >	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; and, (b) Excess seasonal declines in pulmonary function, especially in children.
Suspended Particulate Matter (PM2.5)	12 µg/m^3, AAM >	15 µg/m^3, AAM > 35 µg/m^3, 24-hour average >	(a) Increased hospital admissions and emergency room visits for heart and lung disease; (b) Increased respiratory symptoms and disease; and, (c) Decreased lung functions and premature death.
Lead	1.5 µg/m^3, 30-day average >=	1.5 µg/m^3, calendar quarterly average >	(a) Increased body burden; and, (b) Impairment of blood formation and nerve conduction.

KEY:

ppm = parts per million parts of air, by volume	AAM = Annual Arithmetic Mean
µg/m^3 = micrograms per cubic meter	

TABLE 3-1 (CONCLUDED)
State and Federal Ambient Air Quality Standards

AIR POLLUTANT	STATE STANDARD	FEDERAL PRIMARY STANDARD	MOST RELEVANT EFFECTS
	CONCENTRATION, AVERAGING TIME		
Sulfates (SOx)	25 µg/m^3, 24-hour average >=		(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and, (f) Property damage.
Visibility-Reducing Particles	Insufficient amount to give an extinction coefficient >0.23 inverse kilometers (visual range to less than 10 miles) with relative humidity less than 70 percent, 8-hour average (10am – 6pm PST)		Nephelometry and AISI Tape Sampler; instrumental measurement on days when relative humidity is less than 70 percent.
Hydrogen Sulfide	0.03 ppm, 1-hour average >=		Odor annoyance.
Vinyl Chloride	0.010 ppm, 24-hour average >=		Known carcinogen.

KEY:

ppm = parts per million parts of air, by volume	AAM = Annual Arithmetic Mean
µg/m^3 = micrograms per cubic meter	

TABLE 3-2

2007 Air Quality Data – South Coast Air Quality Management District

CARBON MONOXIDE (CO)					No. Days Standard Exceeded[a]	
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. (ppm, 1-hour)	Max. Conc. (ppm, 8-hour)	Federal > 9.0 ppm, 8-hour	State > 9.0 ppm, 8-hour
LOS ANGELES COUNTY (Co)						
1	Central Los Angeles	359	3	2.2	0	0
2	Northwest Coast Los Angeles Co	365	3	2.0	0	0
3	Southwest Coast Los Angeles Co	361	3	2.4	0	0
4	South Coastal Los Angeles Co1	347*	3	2.6	0	0
4	South Coastal Los Angeles Co2	--	--	--	--	--
6	West San Fernando Valley	358	4	2.8	0	0
7	East San Fernando Valley	365	4	2.8	0	0
8	West San Gabriel Valley	365	3	2.3	0	0
9	East San Gabriel Valley 1	365	3	1.8	0	0
9	East San Gabriel Valley 2	365	2	2.0	0	0
10	Pomona/Walnut Valley	365	3	2.0	0	0
11	South San Gabriel Valley	365	5	2.9	0	0
12	South Central LA County	365	8	5.1	0	0
13	Santa Clarita Valley	361	2	1.2	0	0
ORANGE COUNTY						
16	North Orange County	360	6	2.9	0	0
17	Central Orange County	346*	4	2.9	0	0
18	North Coastal Orange County	362	5	3.1	0	0
19	Saddleback Valley	364	3	2.2	0	0
RIVERSIDE COUNTY						
22	Norco/Corona	--	--	--	--	--
23	Metropolitan Riverside County 1	364	4	2.9	0	0
23	Metropolitan Riverside County 2	365	4	2.1	0	0
23	Mira Loma	359	3	2.1	0	0
24	Perris Valley	--	--	--	--	--
25	Lake Elsinore	365	2	1.4	0	0
29	Banning Airport	--	--	--	--	--
30	Coachella Valley 1**	365	2	0.8	0	0
30	Coachella Valley 2**	--	--	--	--	--
SAN BERNARDINO COUNTY						
32	NW San Bernardino Valley	365	2	1.7	0	0
33	SW San Bernardino Valley	--	--	--	--	--
34	Central San Bernardino Valley 1	359	3	1.8	0	0
34	Central San Bernardino Valley 2	365	4	2.3	0	0
35	East San Bernardino Valley	--	--	--	--	--
37	Central San Bernardino Mountains	--	--	--	--	--
38	East San Bernardino Mountains	--	--	--	--	--
DISTRICT MAXIMUM			8	5.1	0	0
SOUTH COAST AIR BASIN			8	5.1	0	0

KEY:

ppm = parts per million parts of air, by volume	* Less than 12 full months of data. May not be representative.
-- = Pollutant not monitored	** Salton Sea Air Basin

a) The federal 8-hour standard (8-hour average CO > 9 ppm) and state 8-hour standard (8-hour average CO > 9.0 ppm) were not exceeded. The federal and state 1-hour standards (35ppm and 20 ppm) were not exceeded, either.

TABLE 3-2 (CONTINUED)

2007 Air Quality Data – South Coast Air Quality Management District

OZONE (O_3)						No. Days Standard Exceeded					
						Health	Federal [b]			State [c]	
Source/Receptor Area		No. Days of Data	Max. Conc. in ppm 1-hour	Max. Conc. in ppm 8-hour	Fourth High Conc. ppm 8-hour	Advisory ≥ 0.15 ppm 1-hour	> 0.12 ppm 1-hour	> 0.084 ppm 8-hour	> 0.075 ppm 8-hour	> 0.09 ppm 1-hour	> 0.070 ppm 8-hour
No.	Location										
LOS ANGELES COUNTY (Co)											
1	Central LA	355	0.115	0.102	0.072	0	0	2	3	3	6
2	Northwest Coastal LA Co	360	0.117	0.087	0.067	0	0	1	2	2	2
3	Southwest Coastal LA Co	361	0.087	0.074	0.066	0	0	0	0	0	1
4	South Coastal LA Co 1	365	0.099	0.073	0.056	0	0	0	0	1	1
4	South Coastal LA Co 2	--	--	--	--	--	--	--	--	--	--
6	West San Fernando Valley	358	0.129	0.104	0.092	0	1	8	28	21	43
7	East San Fernando Valley	365	0.116	0.096	0.088	0	0	6	13	13	19
8	West San Gabriel Valley	365	0.149	0.100	0.089	0	3	6	11	13	21
9	East San Gabriel Valley 1	365	0.158	0.112	0.096	1	3	13	20	22	28
9	East San Gabriel Valley 2	364	0.147	0.116	0.104	0	3	14	26	25	40
10	Pomona/Walnut Valley	365	0.153	0.108	0.102	1	2	10	18	19	25
11	South San Gabriel Valley	364	0.135	0.100	0.079	0	2	2	5	6	9
12	South Central LA County	365	0.102	0.077	0.056	0	0	0	1	1	2
13	Santa Clarita Valley	357	0.135	0.110	0.101	0	2	16	44	31	64
ORANGE COUNTY											
16	North Orange County	365	0.152	0.107	0.082	1	1	2	8	7	9
17	Central Orange County	365	0.127	0.099	0.073	0	1	1	1	2	7
18	North Coastal Orange Co	362	0.082	0.072	0.065	0	0	0	0	0	2
19	Saddleback Valley	365	0.108	0.089	0.080	0	0	2	5	5	10
RIVERSIDE COUNTY											
22	Norco/Corona	--	--	--	--	--	--	--	--	--	--
23	Metro. Riverside Co1	365	0.131	0.111	0.099	0	2	15	46	31	69
23	Metro. Riverside Co2	--	--	--	--	--	--	--	--	--	--
23	Mira Loma	360	0.118	0.104	0.092	0	0	10	23	16	48
24	Perris Valley	365	0.139	0.116	0.103	0	4	37	73	66	88
25	Lake Elsinore	359	0.130	0.108	0.097	0	3	19	35	26	55
29	Banning Airport	365	0.129	0.113	0.095	0	1	12	43	28	63
30	Coachella Valley 1**	365	0.126	0.101	0.097	0	1	20	58	29	83
30	Coachella Valley 2**	365	0.106	0.094	0.087	0	0	6	29	8	48
SAN BERNARDINO COUNTY											
32	NW San Bernardino Valley	365	0.145	0.115	0.112	0	7	18	35	32	55
33	SW San Bernardino Valley	--	--	--	--	--	--	--	--	--	--
34	Central San Bernardino V1	359	0.144	0.122	0.112	0	9	19	43	40	60
34	Central San Bernardino V2	365	0.153	0.121	0.117	1	8	24	51	48	74
35	E. San Bernardino Valley	365	0.149	0.124	0.112	0	7	25	58	54	79
37	Central San Bernardino Mtn	365	0.171	0.137	0.126	4	13	59	93	67	115
38	East San Bernardino Mtns	--	--	--	--	--	--	--	--	--	--
	DISTRICT MAXIMUM		0.171	0.137	0.126	4	13	59	93	67	115
	SOUTH COAST AIR		0.171	0.137	0.126	5	18	79	108	96	128

ppm - Parts Per Million parts of air, by volume. AAM = Annual Arithmetic Mean -- - Pollutant not monitored. * Less than 12 full months of data; may not be representative.** Salton Sea Air Basin.

b) The federal 1-hour ozone standard was revoked and replaced by the 8-hour average ozone standard effective June 15, 2005. U.S. EPA has revised the federal 8-hour ozone standard from 0.084 ppm to 0.075 ppm, effective May 27, 2008.

c) The 8-hour average California ozone standard of 0.070 ppm was established effective May 17, 2006.

TABLE 3-2 (CONTINUED)

2007 Air Quality Data – South Coast Air Quality Management District

NITROGEN DIOXIDE (NO_2)				
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. (ppm, 1-hour[d])	Annual Average[d] AAM Conc. (ppm)
LOS ANGELES COUNTY (Co)				
1	Central Los Angeles	360	0.10	0.0299
2	Northwest Coastal Los Angeles Co	353	0.08	0.0200
3	Southwest Coastal Los Angeles Co	331*	0.08	0.0140
4	South Coastal Los Angeles Co1	365	0.11	0.0207
4	South Coastal Los Angeles Co2	--	--	--
6	West San Fernando Valley	358	0.08	0.0186
7	East San Fernando Valley	363	0.09	0.0289
8	West San Gabriel Valley	365	0.09	0.0246
9	East San Gabriel Valley 1	365	0.12	0.0253
9	East San Gabriel Valley 2	365	0.11	0.0227
10	Pomona/Walnut Valley	365	0.10	0.0318
11	South San Gabriel Valley	361	0.11	0.0249
12	South Central LA County	365	0.10	0.0291
13	Santa Clarita Valley	339*	0.08	0.0196
ORANGE COUNTY				
16	North Orange County	365	0.08	0.0219
17	Central Orange County	359	0.10	0.0208
18	North Coastal Orange County	362	0.07	0.0132
19	Saddleback Valley	--	--	--
RIVERSIDE COUNTY				
22	Norco/Corona	--	--	--
23	Metropolitan Riverside County 1	364	0.07	0.0206
23	Metropolitan Riverside County 2	--	--	--
23	Mira Loma	349*	0.07	0.0181
24	Perris Valley	--	--	--
25	Lake Elsinore	358	0.06	0.0174
29	Banning Airport	363	0.08	0.0147
30	Coachella Valley 1**	365	0.06	0.0103
30	Coachella Valley 2**	--	--	--
SAN BERNARDINO COUNTY				
32	Northwest SB Valley	327*	0.10	0.0276
33	Southwest SB Valley	--	--	--
34	Central SB Valley 1	358	0.09	0.0239
34	Central SB Valley 2	351	0.08	0.0245
35	East SB Valley	--	--	--
37	Central SB Mountains	--	--	--
38	East SB Mountains	--	--	--
	DISTRICT MAXIMUM		0.12	0.0318
	SOUTH COAST AIR BASIN		0.12	0.0318

KEY:

ppm = parts per million parts of air, by volume	* Less than 12 full months of data. May not be representative.
AAM = Annual Arithmetic Mean	** Salton Sea Air Basin
-- = Pollutant not monitored	

d) The federal standard is annual arithmetic mean NO2 > 0.534 ppm. CARB has revised the NO2 1-hour standard from 0.25 ppm to 0.18 ppm and has established a new annual standard of 0.030 ppm , effective March 20, 2008.

TABLE 3-2 (CONTINUED)

2007 Air Quality Data – South Coast Air Quality Management District

SULFUR DIOXIDE (SO_2)					
Source Receptor Area No.	L Location of Air Monitoring Station	No. Days of Data	Maximum Concentration[e)]		Annual Average, AAM (ppm)
			(ppm, 1-hour)	(ppm, 24-hour)	
LOS ANGELES COUNTY					
1	Central Los Angeles	351	0.01	0.003	0.0009
2	Northwest Coast Los Angeles County	--	--	--	--
3	Southwest Coast Los Angeles County	361	0.02	0.009	0.0028
4	South Coastal Los Angeles County 1	365	0.11	0.011	0.0027
4	South Coastal Los Angeles County 2	--	--	--	--
6	West San Fernando Valley	--	--	--	--
7	East San Fernando Valley	365	0.01	0.003	0.0010
8	West San Gabriel Valley	--	--	--	--
9	East San Gabriel Valley 1	--	--	--	--
9	East San Gabriel Valley 2	--	--	--	--
10	Pomona/Walnut Valley	--	--	--	--
11	South San Gabriel Valley	--	--	--	--
12	South Central LA County	--	--	--	--
13	Santa Clarita Valley	--	--	--	--
ORANGE COUNTY					
16	North Orange County	--	--	--	--
17	Central Orange County	--	--	--	--
18	North Coastal Orange County	358	0.01	0.004	0.0010
19	Saddleback Valley	--	--	--	
RIVERSIDE COUNTY					
22	Norco/Corona	--	--	--	
23	Metropolitan Riverside County 1	323*	0.02	0.002	0.0017
23	Metropolitan Riverside County 2	--	--	--	--
23	Mira Loma	--	--	--	--
24	Perris Valley	--	--	--	--
25	Lake Elsinore	--	--	--	--
29	Banning Airport	--	--	--	--
30	Coachella Valley 1**	--	--	--	--
30	Coachella Valley 2**	--	--	--	--
SAN BERNARDINO COUNTY					
32	Northwest San Bernardino Valley	--	--	--	--
33	Southwest San Bernardino Valley	--	--	--	--
34	Central San Bernardino Valley 1	359	0.01	0.004	0.0019
34	Central San Bernardino Valley 2	--	--	--	--
35	East San Bernardino Valley	--	--	--	--
37	Central San Bernardino Mountains	--	--	--	--
38	East San Bernardino Mountains	--	--	--	--
	DISTRICT MAXIMUM		0.11	0.011	0.0028
	SOUTH COAST AIR BASIN		0.11	0.011	0.0028

KEY:

ppm = parts per million parts of air, by volume	* Less than 12 full months of data. May not be representative.
-- = Pollutant not monitored	** Salton Sea Air Basin

e) The state standards are 1-hour average SO_2 > 0.25 ppm and 24-hour average SO_2 > 0.04 ppm. The federal standards are annual arithmetic mean SO_2 > 0.03 ppm, 24-hour average > 0.14 ppm, and 3-hour average > 0.50 ppm. The federal and state SO_2 standards were not exceeded.

TABLE 3-2 (CONTINUED)

2007 Air Quality Data – South Coast Air Quality Management District

SUSPENDED PARTICULATE MATTER PM10 [f]						
				No. (%) Samples Exceeding Standard		Annual Average[g] AAM Conc. ($\mu g/m^3$)
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. ($\mu g/m^3$, 24-hour)	Federal > 150 $\mu g/m^3$, 24-hour	State > 50 $\mu g/m^3$, 24-hour	
LOS ANGELES COUNTY						
1	Central Los Angeles	56	78	0	5(9)	33.3
2	NW Coastal Los Angeles County	--	--	--	--	--
3	SW Coast Los Angeles County2	56	128	0	3(5)	29.3
4	South Coastal Los Angeles County1	57	75+	0+	5(9)+	30.2+
4	South Coastal Los Angeles County2	29*	123+	0+	11(38)+	41.3+
6	West San Fernando Valley	--	--	--	--	--
7	East San Fernando Valley	27*	109	0	5(19)	40.4
8	West San Fernando Valley	--	--	--	--	--
9	East San Gabriel Valley 1	55	83+	0+	11(20)+	35.6+
9	East San Gabriel Valley 2	--	--	--	--	--
10	Pomona/Walnut Valley	--	--	--	--	--
11	South San Gabriel Valley	--	--	--	--	--
12	South Central LA County	--	--	--	--	--
13	Santa Clarita Valley	57	131+	0+	5(9)+	29.9+
ORANGE COUNTY						
16	North Orange County	--	--	--	--	--
17	Central Orange County	58	75+	0+	5(9)+	31.0+
18	North Coastal Orange County	--	--	--	--	--
19	Saddleback Valley	57	74	0	3(5)	23.0
RIVERSIDE COUNTY						
22	Norco/Corona	58	93+	0+	10(17)+	39.6+
23	Metropolitan Riverside County 1	116	118+	0+	66(57)+	54.6+
23	Metropolitan Riverside County 2	--	--	--	--	--
23	Mira Loma	55	142	0	41(75)	68.5
24	Perris Valley	57	120+	0+	32(56)+	54.8+
25	Lake Elsinore	--	--	--	--	--
29	Banning Airport	48*	78	0	7(15)	33.3
30	Coachella Valley 1**	54	83	0	6(11)	30.5
30	Coachella Valley 2**	84*	146+	0+	51(61)+	53.5+
SAN BERNARDINO COUNTY-						
32	NW San Bernardino Valley	--	--	--	--	--
33	SW San Bernardino Valley	58	115+	0+	14(24)+	43.4+
34	Central San Bernardino Valley 1	56	111+	0+	33(59)+	54.9+
34	Central San Bernardino Valley 2	57	136+	0+	28(49)+	51.4+
35	East San Bernardino Valley	60	97	0	19(32)	39.7
37	Central San Bernardino Mountains	46*	89	0	2(4)	26.1
38	East San Bernardino Mountains	--	--	--	--	--
	DISTRICT MAXIMUM		146+	0+	66+	68.5+
	SOUTH COAST AIR BASIN		142+	0+	79+	68.5+

KEY:

$\mu g/m^3$ = micrograms per cubic meter of air	-- = Pollutant not monitored
AAM = Annual Arithmetic Mean	** Salton Sea Air Basin

f) PM10 samples were collected every 6 days at all sites except for Station Number 4144 and 4157 where samples were collected every 3 days.

g) Federal annual PM 10 standard (AAM > 50 $\mu g/m^3$) was revoked effective December 17, 2006. State standard is annual average (AAM) >20 µg/m3.

TABLE 3-2 (CONTINUED)

2007Air Quality Data – South Coast Air Quality Management District

SUSPENDED PARTICULATE MATTER PM2.5 [h]					No. (%) Samples Exceeding Federal Standard [i]		Annual Averages[j]
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. ($\mu g/m^3$, 24-hour)	98th Percentile Conc. in $\mu g/m^3$ 24-hr	Current > 35 $\mu g/m^3$, 24-hour	Old > 65 $\mu g/m^3$, 24-hour	AAM Conc. ($\mu g/m^3$)
LOS ANGELES COUNTY (Co)							
1	Central Los Angeles	324	64.2	51.2	20(6)	0	16.8
2	NW Coastal Los Angeles Co	--	--	--	--	--	--
3	SW Coastal Los Angeles Co	--	--	--	--	--	--
4	South Coastal Los Angeles Co 1	332	82.9	40.8	12(3.6)	1(0.3)	14.6
4	South Coastal Los Angeles Co2	326	68.0	33.7	6(1.8)	1(0.3)	13.7
6	West San Fernando Valley	95	43.3	33.4	1(1.1)	0	13.1
7	East San Fernando Valley	98	56.5	47.7	9(9.2)	0	16.8
8	West San Gabriel Valley	108	68.9	45.4	3(2.8)	1(0.9)	14.3
9	East San Gabriel Valley 1	292*	63.8	49.3	19(6.5)	0	15.9
9	East San Gabriel Valley 2	--	--	--	--	--	--
10	Pomona/Walnut Valley	--	--	--	--	--	--
11	South San Gabriel Valley	101	63.6	49.5	5(5.0)	0	16.7
12	South Central LA County	106	49.0	46.1	4(3.8)	0	15.9
13	Santa Clarita Valley	--	--	--	--	--	--
ORANGE COUNTY							
16	North Orange County	--	--	--	--	--	--
17	Central Orange County	336	79.4	46.5	14(4.2)	1(0.3)	14.5
18	North Coastal Orange County	--	--	--	--	--	--
19	Saddleback Valley	98	46.9	35.0	2(2.0)	0	11.3
RIVERSIDE COUNTY							
22	Norco/Corona	--	--	--	--	--	--
23	Metropolitan Riverside County 1	295*	75.7	54.3	33(11.2)	3(1.0)	19.1
23	Metropolitan Riverside County 2	101	68.6	57.3	8(7.9)	1(1.0)	18.1
23	Mira Loma	110	69.7	60.1	13(11.8)	1(0.9)	21.0
24	Perris Valley	--	--	--	--	--	--
25	Lake Elsinore	--	--	--	--	--	--
29	Banning Airport	--	--	--	--	--	--
30	Coachella Valley 1**	104	32.5	20.5	0	0	8.7
30	Coachella Valley 2**	97	26.8	26.5	0	0	9.8
SAN BERNARDINO COUNTY							
32	Northwest San Bernardino	--	--	--	--	--	--
33	Southwest San Bernardino	102	72.8	53.0	6(5.9)	1(1.0)	17.9
34	Central San Bernardino Valley1	107	77.5	64.9	10(9.3)	2(1.9)	19.0
34	Central San Bernardino Valley2	99	72.1	68.4	11(11.1)	3(3.0)	18.3
35	East San Bernardino Valley	--	--	--	--	--	--
37	Central San Bernardino Mtns	--	--	--	--	--	--
38	East San Bernardino Mountains	54	45.4	34.0	1(1.9)	0	10.4
DISTRICT MAXIMUM			82.9	68.4	33	3	21.0
SOUTH COAST AIR BASIN			82.9	68.4	48	8	21.0

KEY:

$\mu g/m^3$ = micrograms per cubic meter of air	-- = Pollutant not monitored
AAM = Annual Arithmetic Mean	** Salton Sea Air Basin

h) PM2.5 samples were collected every 3 days at all sites except for the following sites: Station Numbers 060, 072, 077, 087, 3176, and 4144 where samples were taken every day, and Station Number 5818 where samples were taken every 6 days.

i) U.S. EPA has revised the federal 24-hour PM2.5 standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$; effective December 17, 2006.

j) Federal PM2.5 standard is annual average (AAM) > 15 $\mu g/m^3$. State standard is annual average (AAM) > 12 $\mu g/m^3$.

TABLE 3-2 (CONTINUED)

2007 Air Quality Data – South Coast Air Quality Management District

TOTAL SUSPENDED PARTICULATES TSP [k]				
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. ($\mu g/m^3$, 24-hour)	Annual Average AAM Conc. ($\mu g/m^3$)
LOS ANGELES COUNTY (Co)				
1	Central Los Angeles	58	194	73.5
2	Northwest Coastal Los Angeles Co	57	180	53.8
3	Southwest Coast Los Angeles Co 2	55	286	51.8
4	South Coastal Los Angeles Co 1	59	732	76.5
4	South Coast Los Angeles Co 2	58	694	79.4
6	West San Fernando Valley	--	--	--
7	East San Fernando Valley	--	--	--
8	West San Gabriel Valley	56	123	46.3
9	East San Gabriel Valley 1	58	243	78.8
9	East San Gabriel Valley 2	--	--	--
10	Pomona/Walnut Valley	--	--	--
11	South San Gabriel Valley	55	196	76.0
12	South Central LA County	57	327	78.8
13	Santa Clarita Valley	--	--	--
ORANGE COUNTY				
16	North Orange County	--	--	--
17	Central Orange County	--	--	--
18	North Coastal Orange County	--	--	--
19	Saddleback Valley	--	--	--
RIVERSIDE COUNTY				
22	Norco/Corona	--	--	--
23	Metropolitan Riverside County 1	57	237	111.0
23	Metropolitan Riverside County 2	60	674	88.9
23	Mira Loma	--	--	--
24	Perris Valley	--	--	--
25	Lake Elsinore	--	--	--
29	Banning Airport	--	--	--
30	Coachella Valley 1**	--	--	--
30	Coachella Valley 2**	--	--	--
SAN BERNARDINO COUNTY				
32	NW San Bernardino Valley	60	206	63.5
33	SW San Bernardino Valley	--	--	--
34	Central San Bernardino Valley 1	58	242	96.2
34	Central San Bernardino Valley 2	59	536	106.9
35	East San Bernardino Valley	--	--	--
37	Central San Bernardino Mountains	--	--	--
38	East San Bernardino Mountains	--	--	--
DISTRICT MAXIMUM			732	111.0
SOUTH COAST AIR BASIN			732	111.0

KEY:

$\mu g/m^3$ = micrograms per cubic meter of air	-- = Pollutant not monitored
AAM = Annual Arithmetic Mean	** Salton Sea Air Basin

k) Total suspended particulates, lead, and sulfate were determined from samples collected every 6 days by the high volume sampler method, on glass fiber filter media.

TABLE 3-2 (CONCLUDED)

2007 Air Quality Data – South Coast Air Quality Management District

Source Receptor Area No.	Location of Air Monitoring Station	LEAD[l)] Max. Monthly Average Conc[k)] (µg/m^3)	LEAD[l)] Max. Quarterly Average Conc.[k)] (µg/m^3)	SULFATES (SOx)[l)] Max. Conc. (µg/m^3, 24-hour)	SULFATES (SOx)[l)] No. (%) Samples Exceeding State Standard ≥ 25 µg/m^3, 24-hour
LOS ANGELES COUNTY (Co)					
1	Central Los Angeles	0.04	0.03	10.5	0
2	Northwest Coastal Los Angeles Co	--	--	9.7	0
3	Southwest Coastal Los Angeles Co 2	0.01	0.01	10.5	0
4	South Coastal Los Angeles Co 1	0.02	0.01	11.1	0
4	South Coastal Los Angeles Co 2	0.02	0.01	11.7	0
6	West San Fernando Valley	--	--	--	--
7	East San Fernando Valley	--	--	--	--
8	West San Gabriel Valley	--	--	22.4	0
9	East San Gabriel Valley 1	--	--	37.0++	1(1.7)++
9	East San Gabriel Valley 2	--	--	--	--
10	Pomona/Walnut Valley	--	--	--	--
11	South San Gabriel Valley	0.05	0.02	25.4++	1(1.7)++
12	South Central LA County	0.03	0.02	12.5	0
13	Santa Clarita Valley	--	--	--	--
ORANGE COUNTY					
16	North Orange County	--	--	--	--
17	Central Orange County	--	--	--	--
18	North Coastal Orange County	--	--	--	--
19	Saddleback Valley	--	--	--	--
RIVERSIDE COUNTY					
22	Norco/Corona	--	--	--	--
23	Metropolitan Riverside County 1	0.02	0.01	13.0	0
23	Metropolitan Riverside County 2	0.02	0.01	9.3	0
23	Mira Loma	--	--	--	--
24	Perris Valley	--	--	--	--
25	Lake Elsinore	--	--	--	--
29	Banning Airport	--	--	--	--
30	Coachella Valley 1**	--	--	--	--
30	Coachella Valley 2**	--	--	--	--
SAN BERNARDINO COUNTY					
32	NW San Bernardino Valley	0.02	0.01	7.6	0
33	SW San Bernardino Valley	--	--	--	--
34	Central San Bernardino Valley 1	--	--	20.3	0
34	Central San Bernardino Valley 2	0.04	0.02	13.6	0
35	East San Bernardino Valley	--	--	--	--
37	Central San Bernardino Mountains	--	--	--	--
38	East San Bernardino Mountains	--	--	--	--
DISTRICT MAXIMUM		0.05	0.03	37.0	1++
SOUTH COAST AIR BASIN		0.05	0.03	37.0	1++

KEY:

µg/m^3 = micrograms per cubic meter of airF	** Salton Sea Air Basin
-- = Pollutant not monitored	

l) - Federal lead standard is quarterly average > 1.5 µg/m^3; and state standard is monthly average ≥ 1.5 µg/m^3.

++ - High sulfate concentrations were recorded on July 5, 2008, due to the 4th of July firework activities.

Carbon Monoxide

CO is a colorless, odorless, relatively inert gas. It is a trace constituent in the unpolluted troposphere, and is produced by both natural processes and human activities. In remote areas far from human habitation, carbon monoxide occurs in the atmosphere at an average background concentration of 0.04 ppm, primarily as a result of natural processes such as forest fires and the oxidation of methane. Global atmospheric mixing of CO from urban and industrial sources creates higher background concentrations (up to 0.20 ppm) near urban areas. The major source of CO in urban areas is incomplete combustion of carbon-containing fuels, mainly gasoline. In 2002, approximately 98 percent of the CO emitted into the Basin's atmosphere was from mobile sources. Consequently, CO concentrations are generally highest in the vicinity of major concentrations of vehicular traffic.

CO is a primary pollutant, meaning that it is directly emitted into the air, not formed in the atmosphere by chemical reaction of precursors, as is the case with ozone and other secondary pollutants. Ambient concentrations of CO in the Basin exhibit large spatial and temporal variations due to variations in the rate at which CO is emitted and in the meteorological conditions that govern transport and dilution. Unlike ozone, CO tends to reach high concentrations in the fall and winter months. The highest concentrations frequently occur on weekdays at times consistent with rush hour traffic and late night during the coolest, most stable portion of the day.

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of worsening oxygen supply to the heart.

Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport by competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include patients with diseases involving heart and blood vessels, fetuses (unborn babies), and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes.

Reductions in birth weight and impaired neurobehavioral development have been observed in animals chronically exposed to CO resulting in COHb levels similar to those observed in smokers. Recent studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels. These include pre-term births and heart abnormalities.

Carbon monoxide concentrations were measured at 25 locations in the Basin and neighboring SSAB areas in 2007. Carbon monoxide concentrations did not exceed the standards in 2007. The highest eight-hour average carbon monoxide concentration recorded (5.1 ppm in the

South Central Los Angeles County area) was 57 percent of the federal carbon monoxide standard.

The 2003 AQMP revisions to the SCAQMD's CO Plan served two purposes: it replaced the 1997 attainment demonstration that lapsed at the end of 2000; and it provided the basis for a CO maintenance plan in the future. In 2004, the SCAQMD formally requested the U.S. EPA to re-designate the Basin from non-attainment to attainment with the CO National Ambient Air Quality Standards. On February 24, 2007, U.S. EPA published in the Federal Registrar its proposed decision to re-designate the Basin from non-attainment to attainment for CO. The comment period on the re-designation proposal closed on March 16, 2007 with no comments received by the U.S. EPA. On May 11, 2007, U.S. EPA published in the Federal Registrar its final decision to approve the SCAQMD's request for re-designation from non-attainment to attainment for CO, effective June 11, 2007.

Ozone

Ozone (O3), a colorless gas with a sharp odor, is a highly reactive form of oxygen. High ozone concentrations exist naturally in the stratosphere. Some mixing of stratospheric ozone downward through the troposphere to the earth's surface does occur; however, the extent of ozone transport is limited. At the earth's surface in sites remote from urban areas ozone concentrations are normally very low (0.03-0.05 ppm).

While ozone is beneficial in the stratosphere because it filters out skin-cancer-causing ultraviolet radiation, it is a highly reactive oxidant. It is this reactivity which accounts for its damaging effects on materials, plants, and human health at the earth's surface.

The propensity of ozone for reacting with organic materials causes it to be damaging to living cells and ambient ozone concentrations in the Basin are frequently sufficient to cause health effects. Ozone enters the human body primarily through the respiratory tract and causes respiratory irritation and discomfort, makes breathing more difficult during exercise, and reduces the respiratory system's ability to remove inhaled particles and fight infection.

Individuals exercising outdoors, children and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible subgroups for ozone effects. Short-term exposures (lasting for a few hours) to ozone at levels typically observed in southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in high ozone communities. Elevated ozone levels are also associated with increased school absences.

Ozone exposure under exercising conditions is known to increase the severity of the abovementioned observed responses. Animal studies suggest that exposures to a combination of pollutants which include ozone may be more toxic than exposure to ozone alone. Although lung volume and resistance changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.

In 2007, the SCAQMD regularly monitored ozone concentrations at 29 locations in the Basin and SSAB. All areas monitored were below the stage 1 episode level (0.20 ppm), but the maximum concentrations in the Basin exceeded the health advisory level (0.15 ppm). Maximum ozone concentrations in the SSAB areas monitored by the SCAQMD were lower than in the Basin and were below the health advisory level.

In 2007, the maximum ozone concentrations in the Basin continued to exceed federal standards by wide margins. Maximum one-hour and eight-hour average ozone concentrations were 0.171 ppm and 0.137 ppm (both the one-hour and the eight-hour were recorded in Central San Bernardino Mountains area). The federal one-hour ozone standard was revoked and replaced by the eight-hour average ozone standard effective June 15, 2005. USEPA has revised the federal eight-hour ozone standard from 0.084 pppm to 0.075 ppm, effective May 27, 2008. The maximum eight-hour concentration was 183 percent of the new federal standards.

The objective of the 2007 AQMP is to attain and maintain ambient air quality standards. Based upon the modeling analysis described in the Program Environmental Impact Report for the 2007 AQMP implementation of all control measures contained in the 2007 AQMP is anticipated to bring the district into compliance with the federal eight-hour ozone standard by 2024 and the state eight-hour ozone standard beyond 2024.

Nitrogen Dioxide

NO2 is a reddish-brown gas with a bleach-like odor. Nitric oxide (NO) is a colorless gas, formed from the nitrogen (N2) and oxygen (O2) in air under conditions of high temperature and pressure which are generally present during combustion of fuels; NO reacts rapidly with the oxygen in air to form NO2. NO2 is responsible for the brownish tinge of polluted air. The two gases, NO and NO2, are referred to collectively as Nox. In the presence of sunlight, NO2 reacts to form nitric oxide and an oxygen atom. The oxygen atom can react further to form ozone, via a complex series of chemical reactions involving hydrocarbons. Nitrogen dioxide may also react to form nitric acid (HNO3) which reacts further to form nitrates, components of PM2.5 and PM10.

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposures to NO2 at levels found in homes with gas stoves, which are higher than ambient levels found in southern California. Increase in resistance to air flow and airway contraction

is observed after short-term exposure to NO2 in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma and/or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups. More recent studies have found associations between NO2 exposures and cardiopulmonary mortality, decreased lung function, respiratory symptoms and emergency room asthma visits.

In animals, exposure to levels of NO2 considerably higher than ambient concentrations results in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of ozone exposure increases when animals are exposed to a combination of ozone and NO2.

In 2007, nitrogen dioxide concentrations were monitored at 24 locations. No area of the Basin or SSAB exceeded the federal or state standards for nitrogen dioxide. The Basin has not exceeded the federal standard for nitrogen dioxide (0.0534 ppm) since 1991, when the Los Angeles County portion of the Basin recorded the last exceedance of the standard in any U.S. county. In 2007, the maximum annual average concentration was recorded at 0.0318 ppm in the Pomona/Walnut Valley area. In addition, the nitrogen dioxide state one-hour standard was not exceeded at any SCAQMD monitoring location in 2007. Effective March 20, 2008, CARB has revised the nitrogen dioxide one-hour standard from 0.25 ppm to 0.18 ppm and established a new annual standard of 0.30 ppm. The highest one-hour average concentration recorded (0.12 ppm in East San Gabriel Valley) was 66 percent of the new state one-hour standard. NOx emission reductions continue to be necessary because it is a precursor to both ozone and PM (PM2.5 and PM10) concentrations.

Sulfur Dioxide

SO2 is a colorless gas with a sharp odor. It reacts in the air to form sulfuric acid (H2SO4), which contributes to acid precipitation, and sulfates, which are components of PM10 and PM2.5. Most of the SO2 emitted into the atmosphere is produced by burning sulfur-containing fuels.

Exposure of a few minutes to low levels of SO2 can result in airway constriction in some asthmatics. All asthmatics are sensitive to the effects of SO2. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, is observed after acute higher exposure to SO2. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO2.

Animal studies suggest that despite SO2 being a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract.

Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO2 levels. In these studies, efforts to separate the effects of SO2 from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

No exceedances of federal or state standards for sulfur dioxide occurred in 2007 at any of the seven SCAQMD locations monitored. Though sulfur dioxide concentrations remain well below the standards, sulfur dioxide is a precursor to sulfate, which is a component of fine particulate matter, PM10, and PM2.5. Standards for PM10 and PM2.5 were both exceeded in 2007. Sulfur dioxide was not measured at SSAB sites in 2007. Historical measurements showed concentrations to be well below standards and monitoring has been discontinued.

Particulate Matter (PM10 and PM2.5)

Of great concern to public health are the particles small enough to be inhaled into the deepest parts of the lung. Respirable particles (particulate matter less than about 10 micrometers in diameter) can accumulate in the respiratory system and aggravate health problems such as asthma, bronchitis and other lung diseases. Children, the elderly, exercising adults, and those suffering from asthma are especially vulnerable to adverse health effects of PM10 and PM2.5.

A consistent correlation between elevated ambient fine particulate matter (PM10 and PM2.5) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. Studies have reported an association between long term exposure to air pollution dominated by fine particles (PM2.5) and increased mortality, reduction in life-span, and an increased mortality from lung cancer.

Daily fluctuations in fine particulate matter concentration levels have also been related to hospital admissions for acute respiratory conditions, to school and kindergarten absences, to a decrease in respiratory function in normal children and to increased medication use in children and adults with asthma. Studies have also shown lung function growth in children is reduced with long-term exposure to particulate matter.

The elderly, people with pre-existing respiratory and/or cardiovascular disease and children appear to be more susceptible to the effects of PM10 and PM2.5.

The SCAQMD monitored PM10 concentrations at 21 locations in 2007. The federal 24-hour PM10 standard (150 $\mu g/m^3$) was not exceeded at any of the locations monitored in 2007. Highest PM10 concentrations were recorded in and around the Coachella Valley (146 $\mu g/m^3$), Mira Loma (142 $\mu g/m^3$) and Central San Bernardino Valley (136 $\mu g/m^3$). The much more stringent state 24-hour PM10 standard (50 $\mu g/m^3$) was exceeded in most areas.

In 2007, PM2.5 concentrations were monitored at 20 locations throughout the district. USEPA revised the federal 24-hour PM2.5 standard from 65 µg/m^3 to 35 µg/m^3, effective December 17, 2006. In 2007, the maximum PM2.5 concentrations in the Basin exceeded the new federal 24-hour PM2.5 standards by wide margins.

Similar to PM10 concentrations, PM2.5 concentrations were higher in the inland valley areas of San Bernardino and Metropolitan Riverside counties. However, PM2.5 concentrations were also high in Central Los Angeles County. The high PM2.5 concentrations in Los Angeles County are mainly due to the secondary formation of smaller particulates resulting from mobile and stationary source activities. In contrast to PM10, PM2.5 concentrations were low in the Coachella Valley area of SSAB. PM10 concentrations are normally higher in the desert areas due to windblown and fugitive dust emissions.

Lead

Lead in the atmosphere is present as a mixture of a number of lead compounds. Leaded gasoline and lead smelters have been the main sources of lead emitted into the air. Due to the phasing out of leaded gasoline, there was a dramatic reduction in atmospheric lead in the Basin over the past two decades.

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

Lead poisoning can cause anemia, lethargy, seizures, and death. It appears that there are no direct effects of lead on the respiratory system. Lead can be stored in the bone from early-age environmental exposure, and elevated blood lead levels can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland), and osteoporosis (breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of lead because of previous environmental lead exposure of their mothers.

The federal and state standards for lead in place at the time were not exceeded in any area of the SCAQMD in 2007. There have been no violations of the standards at the SCAQMD's regular air monitoring stations since 1982, as a result of removal of lead from gasoline. The maximum quarterly average lead concentration (0.03 µg/m^3 in Central Los Angeles) at the SCAQMD's regular air monitoring stations was two percent of the federal quarterly average lead standard (1.5 µg/m^3) in effect at that time. The maximum monthly average lead concentration (0.05 µg/m^3 in South San Gabriel Valley) was three percent of the state monthly average lead standard. The SCAQMD does measure at four special monitoring sites immediately adjacent to stationary sources of lead. In 2007, the special monitoring sites had maximum quarterly and monthly average lead concentrations below 1.5 µg/m^3, which was

the federal and state lead standard in effect at that time. No lead data were obtained at SSAB and Orange County stations in 2007, and because historical lead data showed concentrations in SSAB and Orange County areas to be well below the standard, measurements have been discontinued.

On November 12, 2008, USEPA published new national ambient air quality standards for lead, which became effective January 12, 2009. The existing national lead standard, 1.5 $\mu g/m^3$, was reduced to 0.15 $\mu g/m^3$, averaged over a rolling three-month period. The new standard is not retroactive, so not compared to the 2007 concentrations monitored and reported above. However, lead concentrations will be monitored and compared to the new federal standards in the future.

Sulfates

Sulfates are chemical compounds which contain the sulfate ion and are part of the mixture of solid materials which make up PM10. Most of the sulfates in the atmosphere are produced by oxidation of sulfur dioxide. Oxidation of sulfur dioxide yields sulfur trioxide (SO3) which reacts with water to form sulfuric acid, which contributes to acid deposition. The reaction of sulfuric acid with basic substances such as ammonia yields sulfates, a component of PM10 and PM2.5.

Most of the health effects associated with fine particles and sulfur dioxide at ambient levels are also associated with sulfates. Thus, both mortality and morbidity effects have been observed with an increase in ambient sulfate concentrations. However, efforts to separate the effects of sulfates from the effects of other pollutants have generally not been successful.

Clinical studies of asthmatics exposed to sulfuric acid suggest that adolescent asthmatics are possibly a subgroup susceptible to acid aerosol exposure. Animal studies suggest that acidic particles such as sulfuric acid aerosol and ammonium bisulfate are more toxic than non-acidic particles like ammonium sulfate. Whether the effects are attributable to acidity or to particles remains unresolved.

In 2007, the state 24-hour sulfate standard (25 $\mu g/m^3$) was exceeded one day in two locations (East San Gabriel Valley and South San Gabriel Valley) in the Basin. The high sulfate concentrations were recorded on July 5, 2007, due to the 4th of July firework activities. No sulfate data were obtained at SSAB and Orange County stations in 2007. Historical sulfate data showed concentrations in the SSAB and Orange County areas to be well below the standard, and measurements have been discontinued. There are no federal sulfate standards.

Visibility Reducing Particles

Since deterioration of visibility is one of the most obvious manifestations of air pollution and plays a major role in the public's perception of air quality, the state of California has adopted a standard for visibility or visual range. Until 1989, the standard was based on visibility

estimates made by human observers. The standard was changed to require measurement of visual range using instruments that measure light scattering and absorption by suspended particles. There are no federal sulfate standards.

Vinyl Cloride

Vinyl chloride is a colourless compound that is highly toxic and a known carcinogen that causes a rare cancer of the liver (USEPA, 2001). At room temperature, vinyl chloride is a gas with a sickly sweet odor that is easily condensed. However, it is stored as a liquid. Due to the hazardous nature of vinyl chloride to human health there are no end products that use vinyl chloride in its monomer form. Vinyl chloride is a chemical intermediate, not a final product. It is an important industrial chemical chiefly used to produce polymer polyvinyl chloride (PVC). The process involves vinyl chloride liquid fed to polymerization reactors where it is converted from a monomer to a polymer PVC. The final product of the polymerization process is PVC in either a flake or pellet form. Billions of pounds of PVC are sold on the global market each year. From its flake or pellet form PVC is sold to companies that heat and mold the PVC into end products such as PVC pipe and bottles. The SCAQMD does not monitor for vinyl chloride at their air monitorning stations.

Volatile Organic Compounds

It should be noted that there are no state or national ambient air quality standards for VOCs because they are not classified as criteria pollutants. VOCs are regulated, however, because limiting VOC emissions reduces the rate of photochemical reactions that contribute to the formation of ozone. They are also transformed into organic aerosols in the atmosphere, contributing to higher PM10 and lower visibility levels.

Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOCs because of interference with oxygen uptake. In general, ambient VOC concentrations in the atmosphere are suspected to cause coughing, sneezing, headaches, weakness, laryngitis, and bronchitis, even at low concentrations. Some hydrocarbon components classified as VOC emissions are thought or known to be hazardous. Benzene, for example, one hydrocarbon component of VOC emissions, is known to be a human carcinogen.

Non-Criteria Pollutant Emissions

Although the SCAQMD's primary mandate is attaining the State and National Ambient Air Quality Standards for criteria pollutants within the district, SCAQMD also has a general responsibility pursuant to the Health and Safety Code § 41700 to control emissions of air contaminants and prevent endangerment to public health. As a result, the SCAQMD has regulated pollutants other than criteria pollutants such as TACs, greenhouse gases and stratospheric ozone depleting compounds. The SCAQMD has developed a number of rules

to control non-criteria pollutants from both new and existing sources. These rules originated through state directives, CAA requirements, or the SCAQMD rulemaking process.

In addition to promulgating non-criteria pollutant rules, the SCAQMD has been evaluating AQMP control measures as well as existing rules to determine whether or not they would affect, either positively or negatively, emissions of non-criteria pollutants. For example, rules in which VOC components of coating materials are replaced by a non-photochemically reactive chlorinated substance would reduce the impacts resulting from ozone formation, but could increase emissions of toxic compounds or other substances that may have adverse impacts on human health.

The following sections summarize the existing setting for the two major categories of non-criteria pollutants: compounds that contribute to ozone depletion and global warming, and TACs.

Greenhouse Gases

The SCAQMD adopted a "Policy on Global Warming and Stratospheric Ozone Depletion" on April 6, 1990. The policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the AQMP. In March 1992, the SCAQMD Governing Board reaffirmed this policy and adopted amendments to the policy to include the following directives:

- phase out the use and corresponding emissions of chlorofluorocarbons (CFCs), methyl chloroform (1,1,1-trichloroethane or TCA), carbon tetrachloride, and halons by December 1995;
- phase out the large quantity use and corresponding emissions of hydrochlorofluorocarbons (HCFCs) by the year 2000;
- develop recycling regulations for HCFCs;
- develop an emissions inventory and control strategy for methyl bromide; and,
- support the adoption of a California greenhouse gas emission reduction goal.

Gases that trap heat in the atmosphere are often called greenhouse gases (GHGs), comparable to a greenhouse. GHGs are emitted by natural processes and human activities. The accumulation of greenhouse gases in the atmosphere regulates the earth's temperature. Global warming is the observed increase in average temperature of the earth's surface and atmosphere. The primary cause of global warming is an increase of GHGs in the atmosphere. The six major GHGs are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulfur hexafluoride (SF6), hydrofluorocarbons (HFCs), and perfluorocarbon (PFCs). The GHGs absorb longwave radiant energy emitted by the Earth, which warms the atmosphere. The GHGs also emit longwave radiation both upward to space and back down toward the surface of the Earth. The downward part of this longwave radiation emitted by the atmosphere is known as the "greenhouse effect." Emissions from human activities such as

electricity production and vehicles have elevated the concentration of these gases in the atmosphere.

CO2 is an odorless, colorless natural greenhouse gas. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic (human caused) sources of CO2 are from burning coal, oil, natural gas, wood, butane, propane, etc. CH4 is a flammable gas and is the main component of natural gas. N2O, also known as laughing gas, is a colorless greenhouse gas. Some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. HFCs are synthetic man-made chemicals that are used as a substitute for chlorofluorocarbons (whose production was stopped as required by the Montreal Protocol) for automobile air conditioners and refrigerants. The two main sources of PFCs are primary aluminum production and semiconductor manufacture. SF6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Scientific consensus, as reflected in recent reports issued by the United Nations Intergovernmental Panel on Climate Change, is that the majority of the observed warming over the last 50 years can be attributable to increased concentration of GHGs in the atmosphere due to human activities. Industrial activities, particularly increased consumption of fossil fuels (e.g., gasoline, diesel, wood, coal, etc.), have heavily contributed to the increase in atmospheric levels of GHGs. As reported by the California Energy Commission (CEC), California contributes 1.4 percent of the global and 6.2 percent of the national GHGs emissions (CEC, 2006). The GHG inventory for California is presented in Table 3-3 (CEC, 2005). Approximately 80 percent of GHGs in California are from fossil fuel combustion (see Table 3-3).

Executive Order S-3-05 (June 2005)

On June 1, 2005, Governor Arnold Schwarzenegger announced GHG emission reduction targets for California. The governor signed Executive Order S-3-05 which established GHG emission reduction targets and charged the secretary of the California Environmental Protection Agency (CalEPA) with the coordination of the oversight of efforts to achieve them. The Executive Order establishes three targets for reducing global warming pollution:

- Reduce GHG emissions to 2000 emission levels by 2010;
- Reduce GHG emissions to 1990 emission levels by 2020; and,
- Reduce GHG emissions to 80 percent below 1990 levels by 2050.

TABLE 3-3

California GHG Emissions and Sinks Summary (million metric tons of CO_2 equivalence)

Gas/Source	1990	2004
Carbon Dioxide (Gross)	**317.4**	**355.9**
Fossil Fuel Combustion	306.4	342.4
Residential	29.0	27.9
Commercial	12.6	12.2
Industrial	66.1	67.1
Transportation	161.1	188.0
Electricity Generation (In State)	36.5	47.1
No End Use Specified	1.1	0.2
Cement Production	4.6	6.5
Lime Production	0.2	0.1
Limestone & Dolomite Consumption	0.2	0.3
Soda Ash Consumption	0.2	0.2
Carbon Dioxide Consumption	0.1	0.1
Waste Combustion	0.1	0.1
Land Use Change & Forestry Emissions	5.5	6.1
Land Use Change & Forestry Sinks	(22.7)	(21.0)
Carbon Dioxide (Net)	**294.7**	**334.9**
Methane (CH4)	**26.0**	**27.9**
Petroleum & Natural Gas Supply System	1.0	0.5
Natural Gas Supply System	1.6	1.4
Landfills	8.1	8.4
Enteric Fermentation	7.5	7.2
Manure Management	3.3	6.0
Flooded Rice Fields	0.4	0.6
Burning Ag & Other Residues	0.1	0.1
Wastewater Treatment	1.4	1.7
Mobile Source Combustion	1.2	0.6
Stationary Source Combustion	1.3	1.3
Nitrous Oxide (N2O)	**32.7**	**33.3**
Nitric Acid Production	0.4	0.2
Waste Combustion	0.0	0.0
Agricultural Soil Management	14.7	19.2
Manure Management	0.8	0.9
Burning Ag Residues	0.1	0.1
Wastewater	0.9	1.1
Mobile Source Combustion	15.6	11.8
Stationary Source Combustion	0.2	0.2
High Global Warming Potential Gases (HFCs, PFCs & SF6)	**7.1**	**14.2**
Substitution of Ozone-Depleting Substances	4.5	12.6
Semiconductor Manufacture	0.4	0.6
Electricity Transmission & Distribution (SF6)	2.3	1.0
Gross California Emissions (w/o Electric Imports)	**383.3**	**431.3**
Land Use Change & Forestry Sinks	**(22.7)**	**(21.0)**
Net Emissions (w/o Electric Imports)	**360.6**	**410.3**
Electricity Imports	**43.3**	**60.8**
Gross California Emissions with Electricity Imports	**426.6**	**492.1**
Net California Emissions with Electricity Imports	**403.9**	**471.1**

Source: Final Staff Report "Inventory of California GHG Emissions and Sinks: 1990 to 2004 (CEC, December 2006)

"Global Warming Solutions Act of 2006" (AB 32)

On September 27, 2006, Assembly Bill (AB) 32, the California Global Warming Solutions Act, of 2006 was enacted by the State of California and signed by Governor Schwarzenegger. AB32 expanded on Executive Order #S-3-05. The legislature stated that "global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." AB32 represented the first enforceable state-wide program in the U.S. to cap all GHG emissions from major industries that includes penalties for non-compliance. While acknowledging that national and international actions will be necessary to fully address the issue of global warming, AB32 laid out a program to inventory and reduce greenhouse gas emissions in California and from power generation facilities located outside the state that serve California residents and businesses.

AB32 required CARB to:

- Establish a statewide GHG emissions cap for 2020, based on 1990 emissions by January 1, 2008;
- Adopt mandatory reporting rules for significant sources of GHG by January 1, 2008;
- Adopt an emissions reduction plan by January 1, 2009, indicating how emissions reductions will be achieved via regulations, market mechanisms, and other actions; and
- Adopt regulations to achieve the maximum technologically feasible and cost-effective reductions of GHG by January 1, 2011.

Consistent with the requirement to develop an emission reduction plan, CARB prepared a Scoping Plan indicating how GHG emission reductions will be achieved through regulations, market mechanisms, and other actions. The Scoping Plan was released for public review and comment in October 2008 and approved by CARB on December 11, 2008. The Scoping Plan calls for reducing greenhouse gas emissions to 1990 levels by 2020. This means cutting approximately 30 percent from business-as-usual (BAU) emission levels projected for 2020, or about 15 percent from today's levels. Key elements of CARB staff's recommendations for reducing California's greenhouse gas emissions to 1990 levels by 2020 contained in the Scoping Plan include the following:

- Expansion and strengthening of existing energy efficiency programs and building and appliance standards;
- Expansion of the Renewables Portfolio Standard to 33 percent;
- Development of a California cap-and-trade program that links with other Western Climate Initiative (WCI) Partner programs to create a regional market system;
- Establishing targets for transportation-related greenhouse gases and pursuing policies and incentives to achieve those targets;

- Adoption and implementation of existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Targeted fees, including a public good charge on water use, fees on high GWP gases and a fee to fund the State's long-term commitment to AB 32 administration.

In response to the comments received on the Draft Scoping Plan and at the November 2008 public hearing, CARB made a few changes to the Draft Scoping Plan, primarily to:

- State that California "will transition to 100 percent auction" of allowances and expects to "auction significantly more [allowances] than the Western Climate Initiative minimum;"
- Make clear that allowance set-asides could be used to provide incentives for voluntary renewable power purchases by businesses and individuals and for increased energy efficiency;
- Make clear that allowance set-asides can be used to ensure that voluntary actions, such as renewable power purchases, can be used to reduce greenhouse gas emissions under the cap;
- Provide allowances are not required from carbon neutral projects; and
- Mandate that commercial recycling be implemented to replace virgin raw materials with recyclables.

Basin GHG Emissions

CO2 emissions in the Basin were determined for the year 2002, which was the base year used in determining GHG emissions for the 2007 AQMP. The total CO2 emissions in the SCAB were estimated to be about 153 million metric tons (SCAQMD, 2007 AQMP) of which:

- 48 percent was contributed by on-road mobile sources;
- 34 percent was contributed by point sources;
- 12 percent was contributed by area sources; and
- 6 percent was contributed off-road mobile sources.

Senate Bill (SB) 97 (August 2007)

In August 2007, Governor Schwarzenegger signed into law Senate Bill (SB) 97 – CEQA: Greenhouse Gas Emissions stating, "This bill advances a coordinated policy for reducing greenhouse gas emissions by directing the Office of Planning and Research (OPR) and the Resources Agency to develop CEQA guidelines on how state and local agencies should analyze, and when necessary, mitigate greenhouse gas emissions." Specifically, SB 97 requires OPR, by July 1, 2009, to prepare, develop, and transmit guidelines to the Resources

Agency for the feasible mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions, as required by CEQA, including, but not limited to, effects associated with transportation or energy consumption. The Resources Agency would be required to certify and adopt those guidelines by January 1, 2010. The OPR would be required to periodically update the guidelines to incorporate new information or criteria established by the CARB pursuant to the California Global Warming Solutions Act of 2006. SB 97 also identifies a limited number of types of projects that would be exempt under CEQA from analyzing GHG emissions. Finally, SB 97 will be repealed on January 1, 2010.

Consistent with SB 97, on June 19, 2008, OPR released its "Technical Advisory on CEQA and Climate Change," which was developed in cooperation with the Resources Agency, the California Environmental Protection Agency (Cal/EPA), and the California Air Resources Board (CARB). According to OPR, the "Technical Advisory" offers the informal interim guidance regarding the steps lead agencies should take to address climate change in their CEQA documents, until CEQA guidelines are developed pursuant to SB 97 on how state and local agencies should analyze, and when necessary, mitigate greenhouse gas emissions.

According to OPR, lead agencies should determine whether greenhouse gases may be generated by a proposed project, and if so, quantify or estimate the GHG emissions by type and source. Second, the lead agency must assess whether those emissions are individually or cumulatively significant. When assessing whether a project's effects on climate change are "cumulatively considerable" even though its GHG contribution may be individually limited, the lead agency must consider the impact of the project when viewed in connection with the effects of past, current, and probable future projects. Finally, if the lead agency determines that the GHG emissions from the project as proposed are potentially significant, it must investigate and implement ways to avoid, reduce, or otherwise mitigate the impacts of those emissions.

U.S. EPA Advance Notice of Proposed Rulemaking in the Clean Air Act (July 30, 2008)

On July 30, 2008, USEPA released a draft Advance Notice of Proposed Rulemaking (ANPR) "Regulating Greenhouse Gas Emissions Under the Clean Air Act." The ANPR solicits public comments, which must be received on or before November 28, 2008, and presents the following relevant information:

- Reviews the various CAA provisions that may be applicable to regulate GHGs;
- Examines the issues that regulating GHGs under those provisions may raise;
- Provides information regarding potential regulatory approaches and technologies for reducing GHG emissions; and
- Raises issues relevant to possible legislation and the potential for overlap between legislation and CAA regulation.

SCAQMD Climate Change Policy (September 5, 2008)

The SCAQMD has established a policy, adopted by the SCAQMD Governing Board at its September 5, 2008 meeting, to actively seek opportunities to reduce emissions of criteria, toxic, and climate change pollutants. The policy includes the intent to assist businesses and local governments implementing climate change measures, decrease the agency's carbon footprint, and provide climate change information to the public. The SCAQMD will take the following actions:

1. Work cooperatively with other agencies/entities to develop quantification protocols, rules, and programs related to greenhouse gases;

2. Share experiences and lessons learned relative to the Regional Clean Air Incentives Market (RECLAIM) to help inform state, multi-state, and federal development of effective, enforceable cap-and-trade programs. To the extent practicable, staff will actively engage in current and future regulatory development to ensure that early actions taken by local businesses to reduce greenhouse gases will be treated fairly and equitably. Staff will seek to streamline administrative procedures to the extent feasible to facilitate the implementation of AB 32 measures;

3. Review and comment on proposed legislation related to climate change and greenhouse gases, pursuant to the 'Guiding Principles for SCAQMD Staff Comments on Legislation Relating to Climate Change' approved at the Board Special Meeting in April 2008;

4. Provide higher priority to funding Technology Advancement Office (TAO) projects or contracts that also reduce greenhouse gas emissions;

5. Develop recommendations through a public process for an interim greenhouse gas CEQA significance threshold, until such time that an applicable and appropriate statewide greenhouse gas significance level is established. Provide guidance on analyzing greenhouse gas emissions and identify mitigation measures. Continue to consider GHG impacts and mitigation in SCAQMD lead agency documents and in comments when SCAQMD is a responsible agency;

6. Revise the SCAQMD's Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning to include information on greenhouse gas strategies as a resource for local governments. The Guidance Document will be consistent with state guidance, including CARB's Scoping Plan;

7. Update the Basin's greenhouse gas inventory in conjunction with each Air Quality Management Plan. Information and data used will be determined in consultation with CARB, to ensure consistency with state programs. Staff will also assist local governments in developing greenhouse gas inventories;

8. Bring recommendations to the Board on how the agency can reduce its own carbon footprint, including drafting a Green Building Policy with recommendations regarding

SCAQMD purchases, building maintenance, and other areas of products and services. Assess employee travel as well as other activities that are not part of a GHG inventory and determine what greenhouse gas emissions these activities represent, how they could be reduced, and what it would cost to offset the emissions;

9. Provide educational materials concerning climate change and available actions to reduce greenhouse gas emissions on the SCAQMD website, in brochures, and other venues to help cities and counties, businesses, households, schools, and others learn about ways to reduce their electricity and water use through conservation or other efforts, improve energy efficiency, reduce vehicle miles traveled, access alternative mobility resources, utilize low emission vehicles and implement other climate friendly strategies; and

10. Conduct conferences, or include topics in other conferences, as appropriate, related to various aspects of climate change, including understanding impacts, technology advancement, public education, and other emerging aspects of climate change science.

SCAQMD GHG Significance Thresholds (December 5, 2008)

On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. SCAQMD's recommended interim GHG significance threshold proposal uses a tiered approach to determining significance. Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA. Tier 2 consists of determining whether or not the project is consistent with a GHG reduction plan that may be part of a local general plan, for example. Tier 3 establishes a screening significance threshold level to determine significance using a 90 percent emission capture rate approach, which corresponds to 10,000 metric tons of CO2 equivalent emissions per year (MTCO2eq/yr). Tier 4 consists of a decision tree approach that allows the lead agency to choose one of three compliance options based on performance standards, but was not recommended for approval at this time. Under Tier 5 the project proponent would implement offsite mitigation (GHG reduction projects) to reduce GHG emission impacts to less than the proposed screening level. Once CARB adopts the statewide significance thresholds, SCAQMD staff plans to report back to the Governing Board regarding any recommended changes or additions to the SCAQMD's interim threshold.

OPR Draft CEQA Guideline Amendments for GHG Emissions (January 8, 2009)

OPR developed preliminary draft regulatory guidance with respect to the analysis and mitigation of the potential effects of GHG emissions. The preliminary draft regulatory language proposed is consistent with the authority granted by CEQA and with CEQA case law. Because the language is intended to clarify and make specific existing state law, it must be consistent with existing statutes and regulations. OPR prepared preliminary draft CEQA Guideline amendments, consistent with the existing CEQA framework for environmental analysis, including but not limited to the determination of baseline conditions, determination

of significance and evaluation of mitigation measures. For these reasons, OPR did not identify a threshold of significance for GHG emissions, nor prescribe assessment methodologies or specific mitigation measures. OPR conducted two public workshops in January 2009. Afterwards, OPR plans to submit its draft CEQA Guideline amendments to the Resources Agency who will begin the formal rulemaking process to certify and adopt the amendments as part of the state CEQA regulations.

Climate Change

Global climate change is a change in the average weather of the earth, which can be measured by wind patterns, storms, precipitation, and temperature. Historical records have shown that temperature changes have occurred in the past, such as during previous ice ages. Some data indicate that the current temperature record differs from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change constructed several emission trajectories of greenhouse gases needed to stabilize global temperatures and climate change impacts. It concluded that a stabilization of greenhouse gases at 400-450 ppm carbon dioxide-equivalent concentration is required to keep global mean warming below 2° Celsius, which is assumed to be necessary to avoid dangerous climate change.

The potential health effects from global climate change may arise from temperature increases, climate-sensitive diseases, extreme events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems (i.e., heat rash and heat stroke). In addition, climate sensitive diseases may increase, such as those spread by mosquitoes and other disease carrying insects. Those diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture, which would have negative consequences. Drought in some areas may increase, which would decrease water and food availability. Global warming may also contribute to air quality problems from increased frequency of smog and particulate air pollution.

The impacts of climate change will also affect projects in various ways. Effects of climate change are specifically mentioned in AB 32 such as rising sea levels and changes in snow pack. The extent of climate change impacts at specific locations remains unclear. However, it is expected that California agencies will more precisely quantify impacts in various regions of the State. As an example, it is expected that the Department of Water Resources will formalize a list of foreseeable water quality issues associated with various degrees of climate change. Once state government agencies make these lists available, they could be used to more precisely determine to what extent a project creates global climate change impacts.

Toxic Air Contaminants

On March 17, 2000, the SCAQMD Governing Board approved "An Air Toxics Control Plan for the Next Ten Years." The Air Toxics Control Plan identifies potential strategies to reduce toxic levels in the Basin over the ten years following adoption. To the extent the strategies are implemented by the relevant agencies, the plan will improve public health by reducing health risks associated with both mobile and stationary sources. Exposure to toxic air contaminants (TACs) can increase the risk of contracting cancer or result in other deleterious health effects which target such systems as cardiovascular, reproductive, hematological, or nervous. The health effects may be through short-term, high-level or "acute" exposure or long-term, low-level or "chronic" exposure.

Historically, the SCAQMD has regulated criteria air pollutants using either a technology-based or an emissions limit approach. The technology-based approach defines specific control technologies that may be installed to reduce pollutant emissions. The emission limit approach establishes an emission limit, and allows industry to use any emission control equipment, as long as the emission requirements are met. The regulation of TACs requires a similar regulatory approach as explained in the following subsections.

Control of TACs Under the TAC Identification and Control Program

California's TAC identification and control program, adopted in 1983 as Assembly Bill (AB) 1807, is a two-step program in which substances are identified as TACs, and airborne toxic control measures (ATCMs) are adopted to control emissions from specific sources. ARB has adopted a regulation designating all 188 federal HAPs as TACs.

ATCMs are developed by ARB and implemented by the SCAQMD and other air districts through the adoption of regulations of equal or greater stringency. Generally, the ATCMs reduce emissions to achieve exposure levels below a determined health threshold. If no such threshold levels are determined, emissions are reduced to the lowest level achievable through the best available control technology unless it is determined that an alternative level of emission reduction is adequate to protect public health.

Under California state law, a federal NESHAP automatically becomes a state ATCM, unless CARB has already adopted an ATCM for the source category. Once a NESHAP becomes an ATCM, CARB and the air pollution control or air quality management district have certain responsibilities related to adoption or implementation and enforcement of the NESHAP/ATCM.

Control of TACs Under the Air Toxics "Hot Spots" Act

The Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588) establishes a state-wide program to inventory and assess the risks from facilities that emit TACs and to notify the public about significant health risks associated with the emissions. Facilities are phased into the AB 2588 program based on their emissions of criteria pollutants or their occurrence on lists of toxic emitters compiled by the SCAQMD. Phase I consists of facilities that emit over 25 tons per year (tpy) of any criteria pollutant and facilities present on the SCAQMD's toxics list. Phase I facilities entered the program by reporting their air TAC emissions for calendar year 1989. Phase II consists of facilities that emit between 10 and 25 tpy of any criteria pollutant, and submitted air toxic inventory reports for calendar year 1990 emissions. Phase III consists of certain designated types of facilities which emit less than 10 tpy of any criteria pollutant, and submitted inventory reports for calendar year 1991 emissions. Inventory reports are required to be updated every four years under the state law.

In October 1992, the SCAQMD Governing Board adopted public notification procedures for Phase I and II facilities. These procedures specify that AB 2588 facilities must provide public notice when exceeding the following risk levels:

- Maximum Individual Cancer Risk: > 10 in 1 million (10×10^{-6})
- Total Hazard Index: > 1.0 for TACs except lead, or > 0.5 for lead

Public notice is to be provided by letters mailed to all addresses and all parents of children attending school in the impacted area. In addition, facilities must hold a public meeting and provide copies of the facility risk assessment in all school libraries and a public library in the impacted area.

The SCAQMD continues to complete its review of the health risk assessments submitted to date and may require revision and resubmission as appropriate before final approval. Notification will be required from facilities with a significant risk under the AB 2588 program based on their initial approved health risk assessments and will continue on an ongoing basis as additional and subsequent health risk assessments are reviewed and approved.

Control of TACs With Risk Reduction Audits and Plans

Senate Bill (SB) 1731, enacted in 1992 and codified at Health and Safety Code Sections 44390 et seq., amended AB 2588 to include a requirement for facilities with significant risks to prepare and implement a risk reduction plan which will reduce the risk below a defined significant risk level within specified time limits. SCAQMD Rule 1402 – Control of Toxic Air Contaminants From Existing Sources, was adopted on April 8, 1994, to implement the requirements of SB 1731.

In addition to the TAC rules adopted by SCAQMD under authority of AB 1807 and SB 1731, the SCAQMD has adopted source-specific TAC rules, based on the specific level of TAC emitted and the needs of the area. These rules are similar to the state's ATCMs because they are source-specific and only address emissions and risk from specific compounds and operations.

SCAQMD Regulation XIV

New and modified sources of toxic air contaminants in the SCAQMD are subject to Rule 1401 – New Source Review of Toxic Air Contaminants, and Rule 212 – Standards for Approving Permits. Rule 212 requires notification of the SCAQMD's intent to grant a permit to construct a significant project, defined as a new or modified permit unit located within 1000 feet of a school (a state law requirement under AB 3205), a new or modified permit unit posing an maximum individual cancer risk of one in one million (1×10^{-6}) or greater, or a new or modified facility with criteria pollutant emissions exceeding specified daily maximums. Distribution of notice is required to all addresses within a ¼-mile radius, or other area deemed appropriate by the SCAQMD. Rule 1401 currently controls emissions of carcinogenic and non-carcinogenic (health effects other than cancer) air contaminants from new, modified and relocated sources by specifying limits on cancer risk and hazard index (explained further below), respectively.

Cancer Health Risks from Toxic Air Contaminants

One of the primary health risks of concern due to exposure to TACs is the risk of contracting cancer. The carcinogenic potential of TACs is a particular public health concern because it is currently believed by many scientists that there is no "safe" level of exposure to carcinogens. Any exposure to a carcinogen poses some risk of causing cancer. It is currently estimated that about one in four deaths in the United States is attributable to cancer. About two percent of cancer deaths in the United States may be attributable to environmental pollution (Doll and Peto 1981). The proportion of cancer deaths attributable to air pollution has not been estimated using epidemiological methods.

Noncancer Health Risks from Toxic Air Contaminants

Unlike carcinogens, for most noncarcinogens it is believed that there is a threshold level of exposure to the compound below which it will not pose a health risk. The Cal-EPA Office of Environmental Health Hazard Assessment develops Reference Exposure Levels (RELs) for TACs which are health-conservative estimates of the levels of exposure at or below which health effects are not expected. The noncancer health risk due to exposure to a TAC is assessed by comparing the estimated level of exposure to the REL. The comparison is expressed as the ratio of the estimated exposure level to the REL, called the hazard index (HI).

Conventional Solvents

The analysis of the environmental effects of the proposed project assumes that products compliant with the proposed amendments to Rules 1171 and 1122 would be formulated by using aqueous or exempt compounds to extend or replace many organic solvents that contain toxic compounds included in currently used cleaning products. Commonly used compounds that would likely be, or have already been replaced include, for example, toluene, xylene, mineral spirits (stoddard solvent), ethanol, and methyl ethyl ketone (MEK).

A compilation of toxicological information of representative conventional solvents is given below. This information was extracted from the following sources: Agency for Toxic Substances and Disease Registry ToxFAQs; New Jersey's Department of Health, Right to Know Program's Hazardous Substance Fact Sheets; EPA's Integrated Risk Information System; EPA's Chemicals In the Environment: OPPT Chemical Fact Sheets; National Institute for Occupational Safety and Health (NIOSH) Pocket Guide to Chemical Hazards; NIOSH Documentation for Immediately Dangerous to Life or Health Concentrations; OSHA Health Guidelines; and Department of Health and Human Services National Toxicology Program Chemical Repository.

Toluene

The largest use for toluene is in the production of benzene. In the past, toluene was used as an octane booster or enhancer in gasoline. Toluene is also used as a raw material for toluene diisocyanate, as a solvent, and in solvent extraction processes. As a solvent, it may be used in aerosol spray paints, wall paints, lacquers, inks, adhesives, natural gums, and resins, as well as in a number of consumer products, such as spot removers, paint strippers, cosmetics, perfumes, and antifreezes.

Breathing large amounts of toluene for short periods of time adversely affects the human nervous system, the kidneys, the liver, and the heart. Effects range from unsteadiness and tingling in fingers and toes to unconsciousness and death. Direct, prolonged contact with toluene liquid or vapor irritates the skin and the eyes. Human health effects associated with breathing or otherwise consuming smaller amounts of toluene over long periods of time are not known. Repeatedly breathing large amounts of toluene, such as when "sniffing" glue or paint, can cause permanent brain damage. As a result, humans can develop problems with speech, hearing, and vision. Humans can also experience loss of muscle control, loss of memory, and decreased mental ability. Exposure to toluene can also adversely affect the kidneys. Laboratory animal studies and, in some cases, human exposure studies show that repeat exposure to large amounts of toluene during pregnancy can adversely affect the developing fetus. Other studies show that repeat exposure to large amounts of toluene adversely affects the nervous system, the kidneys, and the liver of animals.

The Clean Air Act Amendments of 1990 list toluene as a hazardous air pollutant. Toluene is also listed in Table I of SCAQMD Rule 1401 – New Source Review of Toxic Air Contaminants.

Xylene

Xylene occurs naturally in petroleum and coal tar and is formed during forest fires. Chemical industries produce xylene from petroleum. It is one of the top 30 chemicals produced in the United States in terms of volume.

Xylene is used as a solvent and in the printing, rubber, and leather industries. It is also used as a cleaning agent, paint thinner, and in paints and varnishes. It is found in small amounts in airplane fuel and gasoline.

Xylene adversely affects the brain. High levels of exposure for short periods (14 days or less) or long periods (more than one year) can cause headaches, lack of muscle coordination, dizziness, confusion, and changes in one's sense of balance. Exposure of persons to high levels of xylene for short periods can also cause irritation of the skin, eyes, nose, and throat; difficulty in breathing; problems with the lungs; delayed reaction time; memory difficulties; stomach discomfort; and possibly changes in the liver and kidneys. It can cause unconsciousness and even death at very high levels.

Studies of unborn animals indicate that high concentrations of xylene may cause increased numbers of deaths, and delayed growth and development. In many instances, these same concentrations also cause damage to the mothers. It is unknown if xylene harms the unborn child if the mother is exposed to low levels of xylene during pregnancy.

The International Agency for Research on Cancer (IARC) has determined that xylene is not classifiable as to its carcinogenicity in humans. Human and animal studies have not shown xylene to be carcinogenic, but these studies are not conclusive and do not provide enough information to conclude that xylene does not cause cancer.

The Clean Air Act Amendments of 1990 list xylene as a hazardous air pollutant. Because xylene can cause adverse health affects other than cancer, it is listed in Table I of Rule 1401.

Methyl Ethyl Ketone

The primary use of methyl ethyl ketone, accounting for approximately 63 percent of all use, is as a solvent in protective coatings. It is also used as a solvent in printing inks, paint removers, and other cleaning products; in the production of magnetic tapes; and in dewaxing lubricating oil. Methyl ethyl ketone is used as a chemical intermediate in several reactions, including condensation; halogenation; ammonolysis; and oxidation. Small amounts of methyl ethyl ketone are also used as a sterilizer for surgical instruments, hypodermic needles,

syringes, and dental instruments; as an extraction solvent for hardwood pulping and vegetable oil; and as a solvent in pharmaceutical and cosmetic production.

Breathing MEK for short periods of time, such as when painting in a poorly vented area, can adversely affect the nervous system. Effects range from headaches, dizziness, nausea, and numbness in fingers and toes to unconsciousness. MEK vapor irritates the eyes, the nose, and the throat. Direct, prolonged contact with liquid methyl ethyl ketone irritates the skin and damages the eyes. Human health effects associated with breathing or otherwise consuming smaller amounts of methyl ethyl ketone over long periods of time are not known. Workers have developed dermatitis, upset stomachs, loss of appetite, headaches, dizziness, and weakness as a result of repeated exposure to MEK. Laboratory studies show that exposure to large amounts of MEK in air causes animals to give birth to smaller offspring. Studies also show that repeat exposure to large amounts of MEK in air causes adverse liver and kidney effects in animals. The 1990 Clean Air Act Amendments list methyl ethyl ketone as a hazardous air pollutant.

Ethanol (Ethyl Alcohol)

Ethanol (ethyl alcohol) is used as a solvent and in making many commercial products. Ethanol vapors are an irritant of the eyes and respiratory system at 5,300 – 10,600 ppm. Vapor concentrations above 20,000 ppm are considered intolerable. The no-effect level for irritation is considered to be 1,000 ppm. Inhalation of large concentrations of ethanol causes narcosis, ataxia and incoordination. Death occurs at high doses from central nervous system depression. Inhalation of 10,000 – 30.000 over eight hours or more has caused death to rats. Chronic adverse effects on the liver have been observed in both animals and humans. Alcohol hepatitis and cirrhosis are characteristic of alcohol abuse. Ethanol has not been demonstrated to be carcinogenic; however, may be a promoter or co-carcinogen in animals concurrently exposed to other carcinogens. Retarded growth and development, physical malformations, and behavioral and cognitive problems have been established from ethanol consumption during pregnancy, but have not been reported after workplace exposures by any route.

Methylene Chloride (Dichloromethane)

Methylene chloride (dichloromethane) has been used as a solvent, blowing and cleaning agent in polyurethane foam, plastic, and paint stripping operations. Methylene chloride has been phased out of most consumer products. Methylene chloride vapor is an irritant to the eyes, respiratory system and skin. It is a central nervous system depressant. Exposure may cause decreased visual and auditory function, headache, nausea and vomiting. High exposures may cause pulmonary edema, cardiac arrhythmia, and loss of consciousness. Chronic exposure may cause bone marrow, liver and kidney toxicity. EPA has classified methylene chloride in Group B2; probable human carcinogen. AB 1807 and Proposition 65 list methylene chloride as a carcinogen and a toxic air contaminant.

BASELINE EMISSION INVENTORY

Emission Inventory

To assess the emissions impacts of PARs 1171 and 1122, staff used the emissions data presented in the staff report for the July 2006 amendment to Rule 1171 and the October 2004 amendment to Rule 1122. The emissions inventory analysis in this section is based on years 2006 and 2004 emissions for Rule 1171 and 1122, respectively; therefore, no growth factors are included in the emissions inventory. Since staff does not anticipate any substantial changes to the 2006 or 2004 baseline emissions inventory compared to baseline emissions presented as part of the July 2006 amendment to Rule 1171 and the October 2004 amendment to Rule 1122 process, the 2008 inventory is considered to be the same as the 2006 inventory.

Staff's proposal delays by one year the VOC emissions reductions from clean-up solvents used in UV/EB ink application equipment and on-press cleaning of screens in screen printing. The emissions from the use of clean-up solvents for UV/EB lamps and reflectors as well as rollers, blankets and printing plates in UV/EB ink application equipment are included in the inventory for the solvent cleaning activity of UV/EB ink application equipment. Table 3-4 shows the VOC emissions inventory for each of the affected solvent cleaning categories for year 2008, the originally anticipated rule reductions as of January 1, 2009, and the remaining inventory after January 1, 2009 if the current rule requirements were implemented. The proposed delay in emission reductions are also presented in Chapter 4.

TABLE 3-4

Rule 1171 and Rule 1122 VOC Emissions Inventory (pounds per day) for Year 2008

	UV/EB Ink Application Equipment*	**On-Press Cleaning of Screens**	**Rule 1171 Stereolithography**	**Rule 1122 Stereolithography**
2008 Inventory (pounds/day)	260	140	0.5	1.3
VOC Emission Reductions (pounds/ day) from Existing Rules Not Achieved by 1/01/09	220	60	0.46	1.2
Remaining Inventory after January 1, 2009 (pounds/day) if Rules Were Not Amended	40	80	0.04	0.1

* includes UV/EB lamps and reflectors; and metering rollers, dampening rollers and printing plates

CHAPTER 4

ENVIRONMENTAL IMPACTS AND MITIGATION

INTRODUCTION

CEQA requires environmental documents to identify significant environmental effects that may result from a proposed project [CEQA Guidelines § 15126.2 (a)]. Direct and indirect significant effects of a project on the environment should be identified and described, with consideration given to both short- and long-term impacts. The discussion of environmental impacts may include, but is not limited, to, the resources involved; physical changes; alterations of ecological systems; health and safety problems caused by physical changes; and other aspects of the resource base, including water, scenic quality, and public services. If significant adverse environmental impacts are identified, the CEQA Guidelines require a discussion of measures that could either avoid or substantially reduce any adverse environmental impacts to the greatest extent feasible (CEQA Guidelines § 15126.4(c)].

The CEQA Guidelines state that the degree of specificity required in a CEQA document depends on the type of project being proposed (CEQA Guidelines § 15146). The detail of the environmental analysis for certain types of projects cannot be as great as for others. For example, the environmental document for projects, such as the adoption or amendment of a comprehensive zoning ordinance or a local general plan, should focus on the secondary effects that can be expected to follow from the adoption or amendment, but the analysis need not be as detailed as the analysis of the specific construction projects that might follow. As a result, this Draft SEA analyzes impacts on a regional level and impacts on the level of individual industries or individual facilities where feasible.

The categories of environmental impacts recommended for evaluation in a CEQA document are established by CEQA (Public Resources Code, § 21000 et seq.) and the CEQA Guidelines as promulgated by the State of California Secretary of Resources. Under the CEQA Guidelines, there are 17 environmental categories in which potential adverse impacts from a project are evaluated. Projects are evaluated against the environmental categories in an environmental checklist and those environmental categories that may be adversely affected by the project are further analyzed in the appropriate CEQA document.

POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

A Notice of Preparation and an Initial Study (NOP/IS), including an environmental checklist, were prepared for the 1999 amendments to Rule 1171 when the VOC content limit for the affected solvent cleaning categories were originally adopted to be lowered. Because the environmental impacts from the September 2001 amendments for Rule 1122 were not significant, an NOP was not required, although an IS was prepared as part of the Final EA with no significant impacts. The currently proposed amendments to delay the final compliance date for specified cleaning solvents represent a modification of the Rule 1171 amendments adopted in 1999 and the Rule 1122 amendments adopted in 2001. Since no new requirements are proposed that would trigger the need to solicit guidance from responsible

and/or trustee parties, no NOP/IS was prepared or circulated for the current project.

SCAQMD's review of the proposed project shows that the project would have a significant adverse effect on the environment. Further, only one environmental impact area, air quality, was identified as having the potential to be significantly adversely effected as a result of implementing the proposed project. The environmental impact analysis incorporates a "worst-case" approach. This entails the premise that whenever the analysis requires that assumptions be made, those assumptions that result in the greatest adverse impacts are typically chosen. This method ensures that all potential effects of the proposed project are documented for the decision-makers and the public. Accordingly, the following analyses use a conservative or "worst-case" approach for analyzing the potentially significant adverse environmental impacts associated with the implementation of the proposed project. In addition, the 2006 and 2004 usage data is being considered to reflect 2008/2009 usage; however, emissions may be substantially lower due to the current economic downturn.

The following section includes the analyses of the potential adverse air quality impacts from implementing the proposed amendments. No other environmental topic areas were identified that would be adversely affected by PARs 1171 and 1122.

Air Quality

Significance Criteria

The proposed project will be considered to have significant adverse air quality impacts if any one of the thresholds in Table 4-1 are equaled or exceeded.

TABLE 4-1

SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds		
Pollutant	*Construction*	*Operation*
Nox	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day

TABLE 4-1 (CONCLUDED)

SCAQMD Air Quality Significance Thresholds

TAC, AHM, and Odor Thresholds	
Toxic Air Contaminants (TACs, including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk $\geq$ 10 in 1 million Hazard Index $\geq$ 1.0 (project increment)
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402
Ambient Air Quality for Criteria Pollutants [(a)]	
NO2 1-hour average annual average	In attainment; significant if project causes or contributes to an exceedance of any standard: 0.25 ppm (state) 0.053 ppm (federal)
PM10 24-hour average annual geometric average annual arithmetic mean	10.4 $\mu g/m^3$ (recommended for construction) [(b)] 2.5 $\mu g/m^3$ (operation) 1.0 $\mu g/m^3$ 20 $\mu g/m^3$
PM2.5 24-hour average	10.4 $\mu g/m^3$ (recommended for construction) [(b)] 2.5 $\mu g/m^3$ (operation)
Sulfate 24-hour average	1 $\mu g/m^3$
CO 1-hour average 8-hour average	In attainment; significant if project causes or contributes to an exceedance of any standard: 20 ppm (state) 9.0 ppm (state/federal)

(a) Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.

(b) Ambient air quality threshold based on SCAQMD Rule 403.

PM10 = particulate matter less than 10 microns in size, ug/m3 = microgram per cubic meter; pphm = parts per hundred million; mg/m3 = milligram per cubic meter; ppm = parts per million; TAC = toxic air contaminant; AHM = Acutely Hazardous Material. NO_2 = Nitrogen Oxide, CO = Carbon Monoxide, VOC = Volatile Organic Compounds, SOx = Sulfur Oxide.

GHG Significance Thresholds

SCAQMD's adopted interim GHG significance threshold proposal uses a tiered approach to determining significance. Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA. Tier 2 consists of determining whether or not the project is consistent with a GHG reduction plan that may be part of a local general plan, for example. Tier 3 establishes a screening significance threshold level to determine significance using a 90 percent emission capture rate approach, which corresponds to 10,000 metric tons of CO_2 equivalent emissions per year ($MTCO_2eq/yr$). Tier 4 consists of a decision tree approach that allows the lead agency to choose one of three compliance options based on performance standards, but was not recommended for approval at this time. Under Tier 5 the project proponent would implement offsite mitigation (GHG reduction projects) to reduce GHG emission impacts to less than the proposed screening level.

Construction Emissions

PROJECT-SPECIFIC IMPACT: The Final EAs prepared for the 1999 amendments to Rule 1171 and the 2001 amendments to Rule 1122 did not evaluate potential construction impacts because the analysis concluded that affected operators would simply comply by replacing conventional solvents with drop-in low-VOC compliant solvents. Since the final VOC content limits do not ultimately change as a result of implementing PARs 1171 and 1122, implementing the proposed project will also not trigger any construction activity. As a result, it is not anticipated that PARs 1171 and 1122 will require process or equipment construction or alterations at any affected facilities. Therefore, no add-on control equipment or additional employees will be required as a result of implementing the proposed amendments. Thus, no construction emissions or adverse air quality impacts from construction activities are expected as a result of implementing the proposed project.

Operational Emissions

PROJECT-SPECIFIC IMPACT: Two potential adverse operational air quality issues arise relative to implementing PARs 1171 and 1122. As of January 1, 2009, a number of VOC content limits became effective for Rules 1171 and 1122. Two solvent cleaning categories, solvent-borne fluoropolymer coatings and automatic cleaning equipment used in screen reclamation, had sufficient compliant formulations available. Additional time, however, was needed to develop compliant formulations for a) cleaning solvents used in UV/EB ink application equipment; b) cleaning of UV/EB lamps and reflectors; d) cleaning of metering rollers, dampening rollers, and printing plates applicable only to UV/EB ink application equipment; and d) on-press cleaning of screens.

The proposed project would delay the final VOC content limit requirements as follows: 1) extend the Rule 1171 final compliance date to lower the volatile organic compound (VOC) content limit until January 1, 2010 for cleaning solvents used in UV/EB ink application equipment; 2) extend the Rule 1171 exemption to comply with a lower VOC content limit until January 1, 2010 for: a) cleaning of UV/EB lamps and reflectors; b) cleaning of metering rollers, dampening rollers, and printing plates applicable only to UV/EB ink application equipment; and c) on-press cleaning of screens subject to an interim limit of 300 grams per liter effective on date of adoption; ~~and~~ 3) permanently exempt cleaning products for photocurable resins from stereolithography equipment from complying with any VOC content limit in both Rule 1171 and 1122 and 4) exempt cleaning of application equipment used to apply solvent-based flouropolymer coating provided the clean-up solvent does not contain more than 900 grams of VOC per liter.

. Air quality impacts from delaying the compliance dates are described in the following subsections.

Delay in VOC Emission Reductions

PARs 1171 and 1122 would delay VOC emission reductions requirements for lithographic/letterpress ink application equipment, screen printing ink application equipment, and UV/EB ink application equipment. PAR 1171 would extend the final VOC content limit compliance date for these solvent cleaning categories to January 1, 2010, after which all originally anticipated emission reductions would occur. Table 4-2 outlines the delay in VOC emission reductions and VOC emission reductions foregone from each affected solvent cleaning activity.

TABLE 4-2

Delay in VOC Emission Reductions and VOC Emission Reductions Foregone (pounds per day) from the Proposed Project

Delay will Last Until January 1, 2010						
UV/EB Ink Application Equipment[1] (pounds per day)	**On-Press Cleaning of Screens** (pounds per day)	**Total Delay in Emission Reductions** (pounds per day)	**Permanent Foregone Emission Reductions** (pounds per day)	**Peak Daily Project Delay of Emission Reductions** (pounds per day)	**SCAQMD VOC Daily Significance Threshold** (pounds per day)	**Significant ?**
220	60	280	5.56 ~~1.66~~	**286 ~~282~~**	55	Yes

1. Includes the emission reductions anticipated from metering rollers, dampening rollers and printing plates in UV/EB ink application equipment at the lower VOC content limit of 100 grams per liter, as well as emission reductions from UV/EB lamps and reflectors used for curing of UV/EB ink or coatings (currently provided an exemption from complying with lower VOC content limit).

Extending the final compliance date for certain solvent cleaning applications will result in a delay in emission reductions of 280 pounds of VOC emissions per day. This total includes the lower interim VOC content limit of 300 g/l required of on-press cleaning of screens before compliance with the 100 g/l as of January 1, 2010. In addition, 5.56 ~~1.66~~ pounds of VOC emissions per day will be permanently foregone as a result of exempting the cleaning of photocurable resins from stereolithography equipment and models, as well as the cleaning of application equipment using flouropolymer coatings from VOC content limit requirements.

A total peak daily VOC emission reduction delay and emission reductions foregone of approximately 286 ~~282~~ pounds per day exceeds the SCAQMD's CEQA operational significance threshold for VOCs of 55 pounds per day, thus, the proposed project will have a significant adverse air quality impact on the environment.

Potential Air Toxic Impacts – From Delaying the Final Compliance Dates

The Final EAs prepared for the 1999 amendments to Rule 1171 and 2001 amendments to

Rule 1122 evaluated potential exposure to TACs resulting from reformulating conventional cleaning solvents with replacement cleaning solvents that comply with the final VOC content limits proposed in the rules at the time of adoption. Those analyses concluded that replacement cleaning solvents are generally less toxic than conventional cleaning solvents. As a result, human health impacts from reformulating cleaning solvents with compliant replacement solvents would not be significant. Since the main effect of PARs 1171 and 1122 is to delay the final compliance date for specified cleaning solvents and no additional requirements regarding the VOC content limits of these cleaning solvents are being proposed, the conclusion from the Final EA for the 1999 amendments to Rule 1171 and the 2001 amendments to Rule 1122 that human health impact from formulating cleaning solvents with replacements solvents will not create significant adverse impacts continues to apply. The delay in complying with the lower VOC content limit would keep the conventional solvents, with potentially higher toxic impacts, in use for a longer time. However, since the amount of cleaning solvents is not expected to change during the delay of compliance, toxic impacts will not change from what is currently occurring.

The Final EA for PARs 1171 and 1122 in 1999 and 2001, respectively, concluded there is no substantial evidence that shows the use of those solvents identified as possible replacements would result in significant adverse toxic air contaminant impacts. The replacement solvents are for the most part common chemicals used in a wide variety of industrial and even consumer applications. Their widespread use is assumed to be indicative of the ability to use these compounds in a safe manner. Current cleaning formulations contain materials that are as toxic or more toxic than formulations expected to be used to comply with the proposed amendments. Thus, the possible continued use of potentially toxic materials in conventional cleaners will generally be expected to decline as a result of a concurrent increase in the use of less toxic reformulated compliant cleaners, so toxic air contaminant impacts would not be expected to increase compared to existing conditions. According to the most recent studies conducted, the new compliant cleaners are being formulated with water-based solutions, soy-based (composed of methyl esters), acetone, methyl acetate, and isopropyl alcohol (IPA) blends with acetone and water. According to the State of California, Department of Health Services, Hazard Evaluation System & Information Services (HESIS), based on available data and their chemical structure, esters used in soy cleaners were likely to have low toxicity. With regard to the compliant replacement solvent alternatives, the following toxicity information is known.

Propylene Glycol Monomethyl Ethers

Propylene glycol monomethyl ether (PGME) is a colorless liquid whch has critical liver effects in rats and the hazard index target is the alimentary system (liver). Propylene glycol is used as a solvent for cellulose, acrylics, dyes inks and stains. Thus, the primary use of PGME is in lacquers and paints. Toxicity of propylene glycol ether is lower than ethylene glycol ether and, thus, it can be regarded as relatively innocuous or low toxic than the solvent it would replace. It can be used as or for chemical intermediate, brake liquid, detergent, frost

resistant solvent as well as solvent for high grade paint. Use of PGME is anticipated to increase due to its low systemic toxicity in the long term.

No reports or studies of human toxicity following chronic exposure to PGME were located in the literature. Slight eye irritation was reported by two of six human volunteers exposed to 100 ppm PGME for two hours. These subjects were exposed for a total of three and a half hours during which no decrement in visual acuity, coordination, neurological responses or reaction time measured.

Ethylene glycol momomethyl ethers (EGME), a structurally related compound to PGME, exerts considerable toxicity on the blood, thymus, testes, and developing fetus. The toxicity of EGME has been linked to its primary metabolite, methoxyacetic acid. Recent comparative toxicity and metabolism studies, however, indicate that the relatively low systemic toxicity exerted by PGME is due to its different metabolites.

Acetone

Acetone is a manufactured chemical that is also found naturally in the environment. It occurs naturally in plants, trees, volcanic gases, forest fires, and as a product of the breakdown of body fat. It is present in vehicle exhaust, tobacco smoke, and landfill sites. Acetone is used to make plastic, fibers, drugs, and other chemicals. It is also used to dissolve other substances. Industrial processes contribute more acetone to the environment than natural processes.

Acetone is absorbed into the bloodstream and carried to all the organs in the body. If it is a small amount, the liver breaks it down to chemicals that are not harmful and uses these chemicals to make energy for normal body functions. Breathing moderate-to-high levels of acetone for short periods of time, however, can cause nose, throat, lung, and eye irritation; headaches; light-headedness; confusion; increased pulse rate; effects on blood; nausea; vomiting; unconsciousness and possibly coma; and shortening of the menstrual cycle in women. Swallowing very high levels of acetone can result in unconsciousness and damage to the skin in the mouth. Skin contact can result in irritation and damage.

Health effects from long-term exposures are known mostly from animal studies. Kidney, liver, and nerve damage, increased birth defects, and lowered ability to reproduce (males only) occurred in animals exposed long-term. It is not known if these same effects would occur in people. California does not list acetone as a reproductive toxicant under Proposition 65.

The Department of Health and Human Services, the International Agency for Research on Cancer, and the EPA have not classified acetone for carcinogenicity. Acetone has not been shown to cause skin cancer in animals when applied to the skin. It is unknown, however, if

breathing or swallowing acetone for long periods will cause cancer. Studies of workers exposed to it found no significant risk of death from cancer.

Acetone has not been identified by CARB as a toxic air contaminant (TAC) under AB 1807, but is listed in Category 3 (substances which are being evaluated for entry into Category 2) on the TAC Identification List. Acetone is also included in the list of "Substances for which emissions must be quantified" under AB 2588 Air Toxics "Hot Spots" Program. The 1990 Clean Air Act Amendments do not list acetone as a hazardous air pollutant.

Isopropyl Alcohol

Isopropyl alcohol is used as a solvent and in making many commercial products. Isopropyl alcohol is an irritant of the eyes and mucous membranes. By analogy with effects seen in animals, it may cause central nervous system depression in humans at very high concentrations. Exposure to 400 ppm isopropyl alcohol for three to five minutes resulted in mild irritation of the eyes, nose, and throat; at 800 ppm, these symptoms were intensified. An oral dose of 25 milliliters (ml) in 100 ml of water produced hypotension, facial flushing, bradycardia, and dizziness. A postmortem examination in a case of massive ingestion revealed extensive hemorrhagic tracheobronchitis, bronchopneumonia, and hemorrhagic pulmonary edema. Prolonged skin contact with isopropyl alcohol caused eczema and sensitivity. Delayed dermal absorption is attributed to a number of pediatric poisonings that have occurred following repeated or prolonged sponge bathing with isopropyl alcohol to reduce fever. In several cases symptoms included respiratory distress, stupor, and coma. Epidemiological studies suggested an association between isopropyl alcohol and paranasal sinus cancer; however, subsequent analysis suggests that the "strong-acid" process used to manufacture isopropyl alcohol may be responsible for these cancers. The International Agency for Research on Cancer has concluded that the evidence for the carcinogenicity of this process is adequate but that the evidence for isopropyl alcohol itself is inadequate.

Based on the comparisons of toxicity and regulatory exposure limits (see Table 4-3), it is concluded that the use of potentially toxic materials in conventional cleaners will generally decline as a result of a concurrent increase in the use of less toxic materials in reformulated compliant cleaners. Toxic air contaminant impacts would not be expected to increase compared to existing conditions and, therefore, are considered not significant.

TABLE 4-3

Common Available Replacement Solvents [1]

Solvent Name	VOC Content (grams/liter)	Boiling Point (°F)	Flash Point[2] (°F)	Health Rating[3]	Flammability Rating[3]	Evaporation Rate (Butyl Acetate = 1)
Propylene Glycol Monomethyl Ethers (PGME)	n/a	248.2	96.8	1	1	0.62
Acetone	exempt	133.2	4.6	1	3	5.7

Isopropyl Alcohol	786	180.0	53.0	1	3	2.3

[1] Values in this table are based on averaged data from multiple Material Safety Data Sheets (MSDS).

[2] There are different methods that can be used to determine the flashpoint of a solvent but the most frequently used method is the Tagliabue Closed Cup standard (ASTM D56), also known as the TCC. The flashpoint is determined by a TCC laboratory device which is used to determine the flash point of mobile petroleum liquids with flash point temperatures below 175 °F (79.4 °C).

[3] The meaning of the National Fire Protection Association's (NFPA) health and flammability ratings are as follows: "0" means least hazard potential, "1" means slight hazard potential, "2" means moderate hazard potential, "3" means high hazard potential, and "4" means extreme hazard potential.

PROJECT SPECIFIC MITIGATION MEASURES: No mitigation measures were identified.

REMAINING IMPACTS: Since no mitigation measures were identified, impacts remain significant until the final compliance limits become effective.

CUMULATIVE IMPACTS: In general, the preceding analysis concluded that air quality impacts from construction activities and toxic air contaminants would not be significant from the implementation of the proposed project. By temporarily delaying compliance with the VOC content requirements, the delay of VOC emission reductions exceed the SCAQMD's CEQA significance operational threshold. However, the delay of VOC emission reductions from the PARs 1171 and 1122 will not result in a significant adverse cumulative impact because there are only 5.56 ~~1.66~~ pounds per day of permanently foregone VOC emission reductions and, thus, the expected the primary goals in the 1999 and 2001 amendments will be met by January 1, 2010, achieving an overall air quality benefit. Although the proposed project delays and foregoes 286~~282~~ pounds of VOC per day (0.141 tons/day), the rules so far have achieved, as previously noted, 38 tons per day and 39 tons per day for Rules 1171 and 1122, respectively (total of 77 tons per day). From a cumulative perspective, the net effect of the rules is a net reduction (77 t/d – 0.141 t/d) of 76.8 tons per day or 153,600 pounds of VOC per day.

Cumulative air quality impacts from the proposed amendments, previous amendments and all other AQMP control measures considered together are not expected to be significant because implementation of all AQMP control measures is expected to result in net emission reductions and overall air quality improvement. This determination is consistent with the conclusion in the 2007 AQMP EIR that cumulative air quality impacts from all AQMP control measures are not expected to be significant (SCAQMD, 2007).

Based on regional modeling analyses performed for the 2007 AQMP, implementing control measures contained in the 2007 AQMP, in addition to the air quality benefits of the existing rules, is anticipated to bring the district into attainment with all national and most state ambient air quality standards by the year 2023. Future VOC control measures will assist in achieving the goal of federal 8-hour ozone attainment by 2023. Therefore, there will be no significant cumulative adverse air quality impacts from implementing PARs 1171 and 1122.

As indicated in Chapter 3, greenhouse gas (GHG) emissions are emitted by natural processes and human activities, such as combustion of fossil fuels from power plants and on-road

vehicles. Rules 1171 and 1122 involve VOC emissions from solvent cleaning activity and do not involve combustion processes which could generate GHG emissions such as CO_2, CH_4, or N_2O. In addition, the proposed project does not affect equipment or operations that have the potential to emit SF6, HFCs or PFCs. Relative to GHGs, implementing PARs 1171 and 1122 is not expected to increase or reduce GHG emissions. Therefore, implementing PARs 1171 and 1122 is not expected to generate significant adverse cumulative criteria or GHG air quality impacts.

CUMULATIVE IMPACT MITIGATION: No cumulative impact mitigation measures are required.

ENVIRONMENTAL IMPACTS FOUND NOT TO BE SIGNIFICANT

EAs were prepared for the 1999 amendments to Rule 1171 and the 2001 amendments to Rule 1122 describing anticipated environmental impacts resulting from implementing the 1999 amendments to Rule 1171 and 2001 amendments to Rule 1122. It was concluded in the previously prepared Final EAs for each rule that the environmental areas identified in the following subsections would not be significantly adversely affected by PARs 1171 and 1122. The currently proposed amendments are not expected to generate significant adverse environmental impacts in the following environmental areas for the same reasons given in the Final EAs for the 1999 and 2001 amendments to Rule 1171 and Rule 1122, respectively. In addition, as noted in Chapter 1, Rule 1171 was amended in years 2005, 2006 and 2008 and Rule 1122 was amended in years 2002 and 2004. The EAs for those amendments relied on the same reasons as disclosed in the 1999 and 2001 Final EAs to conclude that significant adverse impacts to the following environmental topic areas would not occur. Brief discussions of why PARs 1171 and 1122 will not significantly adversely affect each of these environmental areas are provided in the following sections.

Aesthetics

The Final EAs for the 1999 and 2001 amendments to Rules 1171 and 1122, respectively, concluded that the amendments did not require construction activities at any affected facilities. As a result, significant adverse aesthetics impacts were not expected to occur. Similarly, PARs 1171 and 1122 are not expected to require construction to install control equipment because the primary means of compliance is through product reformulation. Similarly, PARs 1171 and 1122 do not require the construction of any new buildings or other structures. As a result, PARs 1171 and 1122 will have not adversely affect or obstruct scenic resources or degrade the existing visual character of a site, including but not limited to, trees, rock outcroppings, or historic buildings. Also, additional light or glare would not be created which would adversely affect day or nighttime views in the area since no light generating equipment would be required to comply with proposed rule.

Agricultural Resources

In the September 1999 Final EA for the 1999 amendments to Rule 1171, agricultural resources was a subset of land use and planning. In the 2001 Final EA for amendments to Rule 1122, impacts to agricultural resources were analyzed as a separate environmental topic. Regardless, the conclusion in the documents regarding affects on agricultural resources was that significant adverse impacts would not occur because the 1999 and 2001 amendments were not expected to affect land uses, including agricultural uses, in any way. Implementing PARs 1171 and 1122 will not result in any new construction of buildings or other structures. Solvents cleaning activity is primarily performed at sites where construction has already occurred and the commercial or industrial sites are already operating. As a result, implementing PARs 1171 and 1122 will not require converting any classification of farmland to non-agricultural use or conflict with zoning for agricultural use or a Williamson Act contract. Based upon this consideration, significant adverse agricultural resource impacts are not anticipated as a result of implementing PARs 1171 and 1122.

Biological Resources

The Final EAs for the 1999 and 2001 amendments to Rules 1171 and 1122, respectively, concluded that significant adverse biological resource impacts would not occur because the proposed projects did not foster growth or development that could affect biological resources directly or indirectly. PARs 1171 and 1122 are not expected to require construction activities to install control equipment because the primary means of compliance is through product reformulation. Similarly, PARs 1171 and 1122 do not require the construction of any new buildings or other structures. As a result, implementing PARs 1171 and 1122 is not expected to adversely affect in any way habitats that support riparian habitat, are federally protected wetlands, or are migratory corridors. Similarly, since implementing PARs 1171 and 1122 will not require construction of any structures, special status plants, animals, or natural communities are not expected to be adversely affected. It is not envisioned that PARs 1171 and 1122 will conflict with local policies or ordinances protecting biological resources or local, regional, or state conservation plans because it does not require construction of any structures or new development in undeveloped areas. Additionally, PARs 1171 and 1122 would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan for the same reason.

Cultural Resources

The Final EAs for the 1999 and 2001 amendments to Rules 1171 and 1122, respectively, concluded that significant adverse cultural resource impacts would not occur because the proposed project would not require construction or grading activities that could affect cultural resources. There are existing laws in place that are designed to protect and mitigate potential impacts to cultural resources. Disturbance of cultural resources are likely to occur during construction and site preparation of a project. Since construction-related activities associated with the implementation of PARs 1171 and 1122 are not expected, no impacts to historical or cultural resources are anticipated to occur as a result of implementing the proposed project. PARs 1171 and 1122 are not expected to require physical changes to the

environment, which may cause a substantial adverse change to a historical, archaeological resource, directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or disturb any human remains, including those interred outside a formal cemetery. Based upon these considerations, significant adverse cultural resources impacts are not expected from the implementation of PARs 1171 and 1122.

Energy

The Final EAs for the 1999 and 2001 amendments to Rules 1171 and 1122, respectively, concluded that significant adverse energy impacts would not occur because using low VOC cleaning solvents does not require energy intensive equipment. Rule 1171 specifically does not apply to solvent cleaning that occurs in degreasing equipment. The use of reformulated cleaning solvents is expected to create little or no demand for energy at affected facilities because cleaning equipment requires little or no energy to occur. As a result, PARs 1171 and 1122 would not conflict with energy conservation plans, use non-renewable resources in a wasteful manner, or result in the need for new or substantially altered power or natural gas systems. Since PARs 1171 and 1122 would not require installation of control equipment or construction of any structures, it will not conflict with adopted energy conservation plans. Additionally, solvent cleaning operations are expected to comply with any relevant existing energy conservation plans and standards to minimize operating costs. In light of the discussion above, PARs 1171 and 1122 would not create any significant adverse effects on peak and base period demands for electricity, natural gas, or other forms of energy, or adversely affect energy producers or energy distribution infrastructure.

Geology and Soils

The Final EAs for the 1999 and 2001 amendments to Rules 1171 and 1122, respectively, concluded that significant adverse geology and soils impacts would not occur because the proposed projects only affect cleaning operations at affected facilities and does not require construction or grading. There are no provisions in the proposed amended rules, such as construction of new structures, that would call for the disruption or overcovering of soil, changes in topography or surface relief features, the erosion of beach sand, or a change in existing siltation rates. In addition, the proposed amended rules will not expose persons or property to geological hazards such as earthquakes, landslides, mudslides, ground failure, or other natural hazards. Since PARs 1171 and 1122 do not require construction of any structures, no soil disruption from excavation, grading, or filling activities; changes in topography or surface relief features; erosion of beach sand; or changes in existing siltation rates are anticipated. Further, PARs 1171 and 1122 are not expected to require installing control equipment or construction of any structures. Furthermore, subsidence is not anticipated to be a problem since no excavation, grading, or filling activities will be required to comply with the proposed project. Further, the proposed project does not involve drilling or removal of underground products (e.g., water, crude oil, et cetera) that could produce subsidence effects. Additionally, the affected sites would be located at existing residential, commercial, or industrial sites and, therefore, are not envisioned to be prone to new

landslides effects or have unique geologic features since the affected sites are expected to be located in areas where such features have already been altered or removed. In addition, since the proposed project will affect existing facilities, it is expected that persons or property will not be exposed to new impacts from expansive soils or soils incapable of supporting water disposal. Further, the proposed project does not involve installation of septic tanks or other alternative waste water disposal systems. The main effect of the proposed project will be a change in the formulations of materials already in use at the affected facilities.

Hazards and Hazardous Materials

The Final EAs for the 1999 and 2001 amendments to Rules 1171 and 1122, respectively, concluded that significant adverse hazards impacts would not occur because replacement cleaning solvents tend to be less hazardous than conventional (high VOC) cleaning solvents. PARs 1171 and 1122 have no provisions that dictate the use of any specific material. Persons who use solvent cleaners have the flexibility of choosing the cleaning solvent best suited for their operation. It is likely that users would choose a cleaning solvent that does not pose a substantial safety hazard because of health and liability concerns.

The analysis for the 1999 amendment to Rule 1171, which included the VOC content limits that would be delayed by the proposed project, concluded that no other replacement solvent formulations were identified that have a lower flash point or higher flammability rating than acetone, assumed to be the primary substitute solvent. The 2001 amendment to Rule 1122 concluded 80 percent of VOC solvent used in open-top vapor degreasers is n-propyl bromide and 10 percent of the remaining 20 percent of users used isopropyl alcohol. These substances were concluded to be more flammable than the aqeous degreasers and solvents that will replace them. The Rule 1171 acetone analysis determined that as a result of being delisted as a VOC by the USEPA, CARB, and many air districts, acetone usage has been steadily increasing irrespective of past or currently proposed amendments. In any event, it is likely that for some solvent cleaning categories acetone usage could increase. As a worst-case assumption, it is possible that acetone usage could increase by approximately 20 percent because additional acetone may be necessary to achieve the desired effects. An increase in acetone usage may increase the number of trucks or rail cars that transport acetone within the state. However, the safety characteristics of individual trucks or rail cars that transport acetone will not be affected by the proposed amendments. The consequences (exposure effects) of an accidental release of acetone are directly proportional to the size of the individual transport trucks or rail cars and the release rate. Although the probability of an accidential release of acetone could increase slightly, the severity of an incident involving acetone transport will not change as a result of the proposed project. This rationale would hold true for the transport of other replacement solvents if increased volumes are needed to achieve the desired effects.

Any increase in accidental releases of compliant acetone-based cleaning materials during transport would be expected to result in a concurrent reduction in the number of accidental

releases of conventional cleaning materials. Many conventional cleaning solvents are as flammable as acetone, so there would generally be little or no net change in the hazard consequences from the reformulation of cleaning materials to comply with the proposed amendments.

Similarly, the storage or use of acetone at sites subject to Rules 1171 or 1122 would not be expected to result in significant adverse hazard impacts. The flammability classifications by the NFPA are the same for acetone, methyl acetate, toluene, xylene, MEK, and ethanol. Recognizing that acetone has the lowest flash point, it still has a high lower explosive limit. Acetone vapors will not cause an explosion unless the vapor concentration exceeds 26,000 ppm. In contrast, toluene vapors can cause an explosion at 12,000 ppm; the concentration of mineral spirits or xylene vapors that could cause an explosion is even lower at 10,000 ppm.

The Uniform Fire Code and Uniform Building Code set standards intended to minimize risks from flammable or otherwise hazardous materials. Local jurisdictions are required to adopt the uniform codes or comparable regulations. Local fire agencies require permits for the use or storage of hazardous materials and permit modifications for proposed increases in their use. Permit conditions depend on the type and quantity of the hazardous materials at the facility. Permit conditions may include, but are not limited to, specifications for sprinkler systems, electrical systems, ventilation, and containment. The fire departments make annual business inspections to ensure compliance with permit conditions and other appropriate regulations.

Further, all hazardous materials are expected to be used in compliance with established OSHA or Cal/OSHA regulations and procedures, including providing adequate ventilation, using recommended personal protective equipment and clothing, posting appropriate signs and warnings, and providing adequate worker health and safety training. When taken together, the above regulations provide comprehensive measures to reduce hazards of explosive or otherwise hazardous materials. Compliance with these and other federal, state and local regulations and proper operation and maintenance of equipment should ensure the potential for explosions or accidental releases of hazardous materials is not significant.

It is anticipated that the current regulatory requirements regarding flammable and otherwise hazardous materials will not need to be amended as a result of the proposed project since, in part, acetone is already widely used. Based on the preceding information, it is also expected that implementing PARs 1171 and 1122 is not expected to increase or create any new hazardous emissions which would adversely affect existing/proposed schools.

Government Code § 65962.5 typically refers to a list of facilities that may be subject to Resource Conservation and Recovery Act (RCRA) permits. Although it is possible that some facilities regulated by PARs 1171 and 1122 may be on such a list, most affected facilities are not expected to be on this list because they do not typically generate large quantities of hazardous waste. For any facilities affected by the proposed amended rule that

are on the Government Code § 65962.5 list, it is anticipated that they would continue to manage any and all hazardous materials and hazardous waste, in accordance with federal, state and local regulations.

The purpose of PARs 1171 and 1122 is to achieve VOC emission reductions which will ultimately improve air quality and reduce adverse human health impact related to poor air quality. Since solvent cleaning operations would be occurring at existing industrial or commercial facilities, implementation of PARs 1171 and 1122 is not expected to increase or create any new hazardous emissions which could adversely affect public/private airports located in close proximity to the affected sites. PARs 1171 and 1122 have no provisions that dictate the use of any specific solvent cleaning formulation. For some applications, persons who apply solvent cleaners may have the flexibility of choosing the compliant solvent best suited for their operations. If available, it is likely that contractors would choose a compliant formulation that does not pose a substantial safety hazard. As previously noted, it is expected that replacement cleanup solvents will generally be less toxic than currently used conventional solvents.

In addition, Health and Safety Code § 25506 specifically requires all businesses handling hazardous materials to submit a business emergency response plan to assist local administering agencies in the emergency release or threatened release of a hazardous material. Business emergency response plans generally require the following:

1. Identification of individuals who are responsible for various actions, including reporting, assisting emergency response personnel and establishing an emergency response team;
2. Procedures to notify the administering agency, the appropriate local emergency rescue personnel, and the California Office of Emergency Services;
3. Procedures to mitigate a release or threatened release to minimize any potential harm or damage to persons, property or the environment;
4. Procedures to notify the necessary persons who can respond to an emergency within the facility;
5. Details of evacuation plans and procedures;
6. Descriptions of the emergency equipment available in the facility;
7. Identification of local emergency medical assistance; and
8. Training (initial and refresher) programs for employees in:
    a. The safe handling of hazardous materials used by the business;
    b. Methods of working with the local public emergency response agencies;
    c. The use of emergency response resources under control of the handler; and

d. Other procedures and resources that will increase public safety and prevent or mitigate a release of hazardous materials.

In general, every county or city and all facilities using a minimum amount of hazardous materials are required to formulate detailed contingency plans to eliminate, or at least minimize, the possibility and effect of fires, explosion, or spills. In conjunction with the California Office of Emergency Services, local jurisdictions have enacted ordinances that set standards for area and business emergency response plans. These requirements include immediate notification, mitigation of an actual or threatened release of a hazardous material, and evacuation of the emergency area. Based on the preceding information, it is not anticipated that PARs 1171 and 1122 would impair implementation of or physically interfere with an adopted or modified emergency response plan or emergency evacuation plan.

Since the use of cleaning solvents would generally be expected to occur at existing industrial or commercial solvent cleaning operations in urban areas where wildlands are typically not prevalent, risk of loss or injury associated with wildland fires is not expected as a result of implementing PARs 1171 and 1122.

Hydrology and Water Quality

The Final EAs for the 1999 and 2001 amendments to Rules 1171 and 1122, respectively, concluded that significant adverse hydrology and water quality impacts would not occur because use of compliant cleaning solvents was not expected to change solvent disposal practices. Research performed for the EAs indicated that solvent distributors typically pick up and recycle waste solvent products. Equipment used in connection with water-based coatings is already typically cleaned with normal tap water. As a result, in situations or operations where water-borne coatings are already used, increased demand for water and increased generation of wastewater are not anticipated. Besides water-based solutions, soy solutions, acetone, acetone blends and methyl acetate appear to be the most likely replacements for relatively high VOC conventional cleaning solvents. In general, it appears that cleanup solvents will be formulated with less toxic solvents than is currently the case (see the "Hazards and Hazardous Materials" discussion). As a result, substantial changes in wastewater volume and composition are not expected from facilities complying with the requirements in PARs 1171 and 1122. Further, PARs 1171 and 1122 are not expected to cause affected facilities to violate any water quality standard or wastewater discharge requirements since wastewater volumes associated with PARs 1171 and 1122 have been previously analyzed and will remain unchanged. PARs 1171 and 1122 are not expected to have significant adverse water demand and water quality impacts for the following reasons:

- The proposed project does not increase demand for water by more than 5,000,000 gallons per day.

- The proposed project does not require construction of new water conveyance infrastructure.
- The proposed project does not create a substantial increase in mass inflow of effluents to public wastewater treatment facilities.
- The proposed project does not result in a substantial degradation of surface water or groundwater quality.
- The proposed project does not result in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The proposed project does not result in alterations to the course or flow of floodwaters.

The proposed amendments to PARs 1171 and 1122 would not change the existing water demand, affect groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. In addition, implementation of PARs 1171 and 1122 will not increase demand for water from existing entitlements and resources, and will not require new or expanded entitlements. Therefore, no new water demand impacts are expected as the result of implementing the proposed amendments. Implementation of PARs 1171 and 1122 will occur at existing facilities or sites where solvent cleaners are typically used such as industrial or commercial cleaning operations that are already paved and the drainage infrastructures are already in place. Since the proposed project does not involve construction, no new increases to storm water runoff, drainage patterns, groundwater characteristics, or flow are expected. PARs 1171 and 1122 are not expected to generate construction of any new structures in 100-year flood areas as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood delineation map. As a result, PARs 1171 and 1122 are not expected to expose persons or structures to significant new flooding risks. Finally, PARs 1171 and 1122 will not affect in any way any potential flood hazards inundation by seiche, tsunami, or mud flow that may already exist relative to existing facilities.

PARs 1171 and 1122 will not increase storm water discharge, since no construction activities are required or expected at affected facilities to comply with future VOC content requirements for solvent cleaners. Therefore, no new storm water discharge treatment facilities or modifications to existing facilities will be required as a result of implementing PARs 1171 and 1122. Accordingly, PARs 1171 and 1122 are not expected to generate significant adverse impacts relative to construction of new storm water drainage facilities.

Land Use and Planning

The Final EAs for the 1999 and 2001 amendments to Rules 1171 and 1122, respectively, concluded that significant adverse land use and planning impacts would not occur because the proposed projects primarily affected existing facilities, so no change in land use designations were necessary. Since PARs 1171 and 1122 would affect cleanup operations at

existing facilities and does not involve construction of any structures, it will not result in physically dividing an established community. There are no provisions in PARs 1171 and 1122 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements will be altered by regulating VOC emissions from solvent cleaners. Since PARs 1171 and 1122 would affect cleanup operations at existing facilities and do not involve construction of any structures, they would not affect in any way habitat conservation or natural community conservation plans, agricultural resources or operations, and would not create divisions in any existing communities. Therefore, present or planned land uses in the region will not be significantly adversely affected as a result of implementing the proposed project.

Mineral Resources

Similar to the conclusions in the Final EAs for the 1999 and 2001 amendments to Rules 1171 and 1122, respectively, there are no provisions in PARs 1171 and 1122 that would result in the loss of availability of a known mineral resource of value to the region and the residents of the state, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Some examples of mineral resources are gravel, asphalt, bauxite, and gypsum, which are commonly used for construction activities or industrial processes. Therefore, no new demand on mineral resources is expected to occur and significant adverse mineral resources impacts from implementing PARs 1171 and 1122 are not anticipated.

Noise

The Final EAs for the 1999 and 2001 amendments to Rules 1171 and 1122, respectively, concluded that significant adverse noise impacts would not occur because using compliant cleaning solvents does not require noise intensive equipment. Modifications or changes associated with the implementation of PARs 1171 and 1122 will take place at sites that are located in existing industrial or commercial settings. The proposed project is not expected to expose persons to the generation of excessive noise levels above current facility levels because it primarily involves using formulations of cleaning solvents that meet the interim limits, while allowing an additional year before the final compliance limit becomes effective. Use of these cleaning solvents is typically not a noise intensive activity. It is expected that any contractor affected by PARs 1171 and 1122 will comply with all existing noise control laws or ordinances. Further, Occupational Safety and Health Administration (OSHA) and California-OSHA have established noise standards to protect worker health. PARs 1171 and 1122 are not anticipated to expose persons to or generate excessive groundborne vibration or groundborne noise levels since no construction activities are expected to occur at the existing facilities and switching to reformulated products does not involve, in any way, installation of control equipment that generates vibrations. No increase in periodic or temporary ambient noise levels in the vicinity of affected facilities above levels existing prior to PARs 1171 and 1122 are anticipated because the proposed project would not require construction-related

activities nor would it change the existing cleanup activities currently performed by persons who apply cleaning solvents.

Solvents users located near public/private airports are not expected to generate new noise impacts since cleaning is typically not a noise intensive activity. Thus, PARs 1171 and 1122 are not expected to expose persons residing or working in the vicinity of public or private airports to excessive noise levels.

Population and Housing

The Final EAs for the 1999 and 2001 amendments to Rules 1171 and 1122, respectively, concluded that the proposed projects would not create significant adverse population and housing impacts because the proposed project would not require additional workers. As a result, the project would not induce population growth or create a demand for additional housing. The proposed project is not anticipated to generate any significant effects, either direct or indirect, on the district's population or population distribution as no additional workers are anticipated to be required to comply with the proposed amendments. Human population within the jurisdiction of the SCAQMD is anticipated to grow regardless of implementing PARs 1171 and 1122. As such, PARs 1171 and 1122 will not result in changes in population densities or induce significant growth in population. As such, PARs 1171 and 1122 are not expected to substantially alter cleanup practices at sites where solvent cleaning takes place. Consequently, PARs 1171 and 1122 are not expected to result in the creation of any industry that would affect population growth, directly or indirectly induce the construction of single- or multiple-family units, or require the displacement of persons or housing elsewhere in the district.

Public Services

The Final EAs for the 1999 and 2001 amendments to Rules 1171 and 1122, respectively, concluded that the proposed projects would not create significant adverse public service impacts as increased demands for public service providers would not be required. Potential adverse impacts to fire departments could occur in two ways: 1) if there is an increase in accidental release of hazardous materials used in cleaning solvents, fire departments would have to respond more frequently to accidental release incidences and 2) if there is an increase in the amount of hazardous materials stored at affected facilities, fire departments may have to conduct additional inspections. As a "worst-case," this analysis assumes that most cleanup solvents would be reformulated with acetone to meet the final VOC content limit since acetone has been delisted as a VOC and has the lowest flash point of the possible replacement materials. PARs 1171 and 1122 do not require the use of acetone. Persons who apply cleaning solvents would determine which compliant material to use based on a number of factors including, but not limited to, safety considerations.

While acknowledging the inherent safety issues associated with acetone, the capacity for its safe use is apparent based upon its widespread use. Chemistry classes at all levels from

grade school to universities, as well as industrial laboratories, use acetone for wiping down counter tops and cleaning glassware. Additional uses for acetone include solvent for paint, varnish, lacquers, inks, adhesives, floor coatings, and cosmetic products including nail polish and nail polish remover.

Based upon the above considerations, overall risk associated with the use of cleaning solvents is not expected to appreciably change as a result of the proposed amendments. The proposed amendments to PARs 1171 and 1122 will not generate significant adverse impacts to local fire departments requiring new or additional fire fighting resources. Any increase in the storage or accidental releases of compliant cleaning materials would be expected to result in a concurrent reduction in the storage and number of accidental releases of existing cleaning materials. As a result, need for inspections and the net number of accidental releases would be expected to remain approximately constant.

Local police departments are often the first responders to emergency situations such as fires to cordon off the area and provide crowd control. Since reformulating cleaning solvents ot the interim level is not expected to increase flammability, implementing PARs 1171 and 1122 is not expected to increase the fire hazards associated with cleanup solvents compared to existing conventional solvents. As a result, no significant adverse impacts to local police departments are expected because no increases in fire emergencies are anticipated.

The local labor pool (e.g., workforce) of solvent cleaners is expected to remain the same since PARs 1171 and 1122 would not trigger substantial changes to current cleaning practices. Therefore, with no increase in local population anticipated, construction of new or additional demands on existing schools and parks are not anticipated. Therefore, no significant adverse impacts are expected to local schools or parks.

The proposed project will result in the use of new formulations of cleaning solvents to meet interim VOC content limits. No new permits should be required to operate these new cleaning solvents, so there should be no other need for government services. The proposal would not result in the need for new or physically altered government facilities, such as police or fire departments, in order to maintain acceptable service ratios, response times, or other performance objectives. There will be no increase in population and, therefore, no need for physically altered government facilities.

Recreation

The Final EAs for the 1999 and 2001 amendments to Rules 1171 and 1122, respectively, concluded that the proposed projects would not create significant adverse recreation impacts because it would not induce population growth, so increased used of recreational resources was not anticipated. As discussed under “Land Use and Planning” above, there are no provisions in PARs 1171 and 1122 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments. No land use or planning requirements will be altered by the changes proposed in PARs 1171 and

1122. The proposed project does not affect population growth in the district so it would not increase the demand for or use of existing neighborhood and regional parks or other recreational facilities or require the construction of new or expansion of existing recreational facilities that might have an adverse physical effect on the environment.

Solid/Hazardous Waste

The Final EAs for the 1999 and 2001 amendments to Rules 1171 and 1122, respectively, concluded that significant adverse solid/hazardous impacts would not occur because use of liquid cleaning solvents does not generate solid waste to any appreciable extent. In handwipe operations, solvent-laden rags are the predominant waste product (liquid cleanup solvent wastes are addressed in the "Hydrology and Water Quality" section). These wastes are a byproduct of the need to clean equipment, not from air quality regulations (i.e., Rule 1171 and 1122). Rules 1171 and 1122 are not the cause of waste generation, but simply require the cleaning materials used for certain operations to meet a specified VOC content. Existing Rules 1171 and 1122 already recommend that solvent-laden rags be kept in non-leaking containers. Thus, PARs 1171 and 1122 may result in the alteration of the composition of a waste stream, but would not be expected to result in an increased generation of cleaning-related waste.

It is important to note that PARs 1171 and 1122 does not change the current requirements specific to cleanup solvent storage and disposal. Since cleaning solvents complying with interim VOC content limits are expected to be formulated with solvents that are equally or less toxic than currently used solvents (see "Hazards and Hazardous Materials" section), implementing PARs 1171 and 1122 is not expected to generate significant new adverse hazardous waste impacts.

Therefore, there are no significant adverse solid and hazardous waste impacts associated with PARs 1171 and 1122. As a result, no net increase in the amount or character of solid or hazardous waste streams is expected to occur. PARs 1171 and 1122 are not expected to increase the volume of solid or hazardous wastes from affected persons who apply cleaning solvents, require additional waste disposal capacity, or generate waste that does not meet applicable local, state, or federal regulations.

Transportation/Traffic

The Final EAs for the 1999 and 2001 amendments to Rules 1171 and 1122, respectively, concluded that the proposed projects would not create significant adverse transportation/traffic impacts because use of compliant cleaning solvents has no effect on vehicle trips to affected facilities. Further, PARs 1171 and 1122 do not result in a need for additional workers, so there would not be an increase in daily worker commute trips. Interim cleaning solvent formulations are not expected to deviate from the volumes of materials currently used or expected to be used when the final compliance date becomes effective. Thus, the current level of transportation demands related to transporting new formulations of

materials is expected to remain the same. The proposed amendments would have no affect on existing cleaning operations that would change or cause additional worker trips or increase transportation demands or services. Therefore, since no additional operational-related trips are anticipated, implementing PARs 1171 and 1122 are not expected to significantly adversely affect circulation patterns on local roadways or the level of service at intersections near affected facilities or sites.

PARs 1171 and 1122 will affect cleaning solvent operations at existing industrial and commercial facilities. The height and appearance of the existing structures are not expected be affected by complying with PARs 1171 and 1122 and, therefore, implementation of PARs 1171 and 1122 is not expected to adversely affect air traffic patterns. Further, PARs 1171 and 1122 would not affect in any way air traffic in the region because, to the extent that cleaning solvents are shipped by air, only a minor increase in the amount of solvent usage is anticipated.

Compliance with the interim VOC content requirements for certain cleaning solvents does not require construction of structures or roadways. Further, implementing PARs 1171 and 1122 will not involve modifications to existing roadways. Consequently, implementing the proposed project will not create roadway hazards or incompatible roadway uses.

Compliance with the interim VOC content requirements for certain cleaning solvents is not expected affect or require changes to emergency access at or in the vicinity of the affected facilities since the proposed project will not require construction or physical modifications of any kind. Therefore, the proposed project is not expected to adversely affect emergency access.

Since PARs 1171 and 1122 will not involve construction of any structures or substantially alter operational practices, no new employees would be required to comply with the proposed project. As a result, no changes to the parking capacity at or in the vicinity of the affected facilities are expected. Therefore, the proposed project is not expected to adversely impact on- or off-site parking capacity. PARs 1171 and 1122 have no relationship at all with alternative transportation, such as bus turnouts, bicycle racks, etc. Consequently, implementing PARs 1171 and 1122 will not create any conflicts with these modes of transportation.

CONSISTENCY

The Southern California Association of Governments (SCAG) and the SCAQMD have developed, with input from representatives of local government, the industry community, public health agencies, the USEPA - Region IX and the California ARB, guidance on how to assess consistency within the existing general development planning process in the Basin. Pursuant to the development and adoption of its Regional Comprehensive Plan Guide

(RCPG), SCAG has developed an Intergovernmental Review Procedures Handbook (June 1, 1995). The SCAQMD also adopted criteria for assessing consistency with regional plans and the AQMP in its CEQA Air Quality Handbook. The following sections address consistency between PARs 1171 and 1122 and relevant regional plans pursuant to the SCAG Handbook and SCAQMD Handbook.

Consistency with the Air Quality Management Plan

Rules 1171 and 1122 are consistent with the AQMP since it is specifically identified as a control measure that is necessary to attain and maintain the state and national ambient air quality standards. While PARs 1171 and 1122 would delay compliance with lower VOC content limits, which will postpone VOC emission reductions anticipated in the AQMP, the delay is only temporary until January 1, 2010, when most of the rule's overall air quality benefit will be achieved. Because the final compliance date is well before the 2007 AQMP's 8-hour ozone attainment goals by 2023, PARs 1171 and 1122 are consistent with the AQMP.

Consistency with Regional Comprehensive Plan and Guide (RCPG) Policies

The RCPG provides the primary reference for SCAG's project review activity. The RCPG serves as a regional framework for decision making for the growth and change that is anticipated during the next 20 years and beyond. The Growth Management Chapter (GMC) of the RCPG contains population, housing, and jobs forecasts, which are adopted by SCAG's Regional Council and that reflect local plans and policies, shall be used by SCAG in all phases of implementation and review. The subsections summarize the main policies and goals contained in the GMC and whether or not PARs 1171 and 1122 are consistent with these policies and goals.

Improve the Regional Standard of Living

The Growth Management goals are to develop urban forms that enable individuals to spend less income on housing cost, that minimize public and private development costs, and that enable firms to be more competitive, which would strengthen the regional strategic goal to stimulate the regional economy. PARs 1171 and 1122 in relation to the GMC would not interfere with the achievement of these goals, nor would it interfere with any powers exercised by local land use agencies to achieve these goals. PARs 1171 and 1122 will not interfere with efforts to minimize red tape and expedite the permitting process to maintain economic vitality and competitiveness.

Provide Social, Political and Cultural Equity

The Growth Management goals are to develop urban forms that avoid economic and social polarization; promote the regional strategic goals of minimizing social and geographic disparities; and reach equity among all segments of society. Consistent with the Growth

Management goals, local jurisdictions, employers and service agencies should provide adequate training and retraining of workers, and prepare the labor force to meet the challenges of the regional economy. Growth Management goals also include encouraging employment development in job-poor localities through support of labor force retraining programs and other economic development measures. Local jurisdictions and other service providers are responsible to develop sustainable communities and provide, equally to all members of society, accessible and effective services such as: public education, housing, health care, social services, recreational facilities, law enforcement, and fire protection. Implementing PARs 1171 and 1122 is not expected to interfere with the goals of providing social, political and cultural equity.

Improve the Regional Quality of Life

The Growth Management goals also include attaining mobility and clean air goals and developing urban forms that enhance quality of life, accommodate a diversity of life styles, preserve open space and natural resources, are aesthetically pleasing, preserve the character of communities, and enhance the regional strategic goal of maintaining the regional quality of life. The RCPG encourages planned development in locations least likely to cause environmental impacts, as well as supports the protection of vital resources such as wetlands, groundwater recharge areas, woodlands, production lands, and land containing unique and endangered plants and animals. While encouraging the implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and archaeological sites, the plan discourages development in areas with steep slopes, high fire, flood and seismic hazards, unless complying with special design requirements. Finally, the plan encourages mitigation measures that reduce noise in certain locations, measures aimed at preservation of biological and ecological resources, measures that would reduce exposure to seismic hazards, minimize earthquake damage, and develop emergency response and recovery plans. PARs 1171 and 1122 in relation to the GMC are not expected to interfere with attaining these goals and, in fact, promotes improving air quality in the region once most of the anticipated VOC emission reductions occur January 1, 2010.

Consistency with Regional Mobility Plan (RMP) and Congestion Management Plan (CMP)

PARs 1171 and 1122 are consistent with the RMP and CMP since no significant adverse impact to transportation/circulation will result from the delay of VOC emission reductions within the district. While traffic and congestion is generated from the transport offsite of wastes for disposal or recycling, this is an existing impact. In addition, the reformulation of the coatings will not require a substantial increase number of employees, so an increase in worker commute trips is not expected. Furthermore, because affected facilities will not increase their handling capacities as a result of complying with PARs 1171 and 1122, there will not be an increase in material transport trips associated with the implementation of PARs

1171 and 1122. Therefore, material transport trips are not expected to significantly adversely affect circulation patterns.

CHAPTER 5

PROJECT ALTERNATIVES

Introduction

Alternatives Rejected as Infeasible

Description of Alternatives

Comparison of the Alternatives

Conclusion

INTRODUCTION

This Draft SEA provides a discussion of alternatives to the proposed project as required by state CEQA Guidelines. Alternatives include measures for attaining the objectives of the proposed project and provide a means for evaluating the comparative merits of each alternative. A "No Project" alternative must also be evaluated. The range of alternatives must be sufficient to permit a reasoned choice, but need not include every conceivable project alternative. CEQA Guidelines § 15126.6(a) specifically notes that the range of alternatives required in a CEQA document is governed by a 'rule of reason' and only necessitates that the CEQA document set forth those alternatives necessary to permit a reasoned choice. The key issue is whether the selection and discussion of alternatives fosters informed decision-making and meaningful public participation. A CEQA document need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative. SCAQMD Rule 110 does not impose any greater requirements for a discussion of project alternatives in an environmental assessment than is required for an EIR under CEQA.

The following alternatives are viable options to the proposed project and all, or parts, of these alternatives can be chosen by the decision-making body (e.g., SCAQMD Governing Board) to become the proposed project. For this reason, the public is encouraged to review the following environmental analysis of the project alternatives since the potential adverse environmental impacts from implementing all, or parts, of the following alternatives may be generated if chosen to become the proposed project.

ALTERNATIVES REJECTED AS INFEASIBLE

A CEQA document should identify any alternatives that were considered by the lead agency, but were rejected as infeasible during the scoping process and explain the reasons underlying the lead agency's determination (CEQA Guidelines § 15126.6(c)). One potential project alternative was identified and rejected as infeasible. The rationale for rejecting the alternative as infeasible is discussed in the following subsection.

Limited Delay of the Final VOC Content Limit/Compliance Date

This proposed alternative would delay the final compliance date for the VOC content limit of cleaning solvents used in UV/EB in application equipment and on-press cleaning of screens in screen printing by six months until July 1, 2009. However, based on feedback from affected operators, six months is not adequate given the time it takes to ensure applicability of effective compliant solvent alternatives and provide operators at individual affected facilities sufficient time to test products, train workers, and transition into using the new cleaning solvent. This alternative has been rejected as infeasible due to these time restraints. In reality, the current rulemaking schedule would allow even less

time, possibly only a two-month extension from date of adoption. If the decision-making body wanted to choose a more stringent option to the proposed project, the No-Project would satisfy that requirement.

DESCRIPTION OF ALTERNATIVES

The rationale for selecting and modifying specific components of the proposed amendments to generate feasible alternatives for analysis is based on CEQA's requirement to present "realistic" alternatives; that is, alternatives that can actually be implemented. The following alternatives were developed by identifying and modifying major components of the proposed project. Specifically, the primary components of the proposed alternatives that have been modified are the final compliance dates and the range of exemptions. In general, the range of alternatives to PARs 1171 and 1122 are relatively limited because of the focused nature of this project and the technology and data regarding alternative approaches are limited. Further, the final VOC content limit requirements are driven by the VOC emission reductions identified in the 2007 AQMP, which are necessary if the district is to attain and maintain the state and national ambient air quality standards for ozone.

Table 5-1 identifies the major components of PARs 1171 and 1122 and each of the project alternatives: Alternative A (No Project); Alternative B (Interim Limits Alternative); Alternative C (Two-Year Delay in Final Compliance Deadlines Alternative); and Alternative D (More Solvent Cleaning Activities Alternative). All other components of PARs 1171 and 1122 not identified in the following subsections or in Table 5-1 would also be included in the proposed project alternatives. Table 5-2 lists the compliance limits and deadlines for the alternatives and the proposed project.

Least Toxic Alternative

In accordance with SCAQMD's policy document Environmental Justice Program Enhancements for FY 2002-03, Enhancement II-1 recommends that all SCAQMD CEQA assessments include at least one project alternative, where feasible, with the lowest air toxics emissions. In other words, for any major equipment or process type under the scope of the proposed project that creates a significant environmental impact, at least one alternative, where feasible, shall be considered from a "least harmful" perspective with regard to hazardous air emissions. With respect to the proposed project, a lowest air toxics alternative would be to use less TACs during solvent formulation to comply with the proposed project. Replacement cleaning solvents are generally less toxic than conventional cleaning solvents. Since the final compliance date has passed and, according to the studies, compliant products are not available, Alternative A is equivalent to the proposed project.

TABLE 5-1
VOC Content Limits and Compliance Deadlines of Proposed Project and Project Alternatives

Affected Solvent Cleaning Activity	**Current Limit** (g/l)	**Alternative A** (No Project)		**Proposed Amended Rule 1171**		**Alternative B** (Interim Limits)		**Alternative C** (Two-Year Delay in Final Compliance Deadlines)		**Alternative D** (More Solvent Cleaning Activities)	
		Proposed Limit (g/l)	Compliance Date	Proposed Limit (g/l)	Compliance Date	Proposed Limit (g/l)	Compliance Date	Proposed Limit (g/l)	Compliance Date	Proposed Limit (g/l)	Compliance Date
UV/EB Ink Application Equipment	650	100	1/01/09	100	1/01/10	500	*at adoption*	100	1/01/11	100	1/01/10
						100	1/01/10				
UV/EB Lamps and Reflectors	No limit	100	1/01/09	100	1/01/10	650	*at adoption*	100	1/01/11	100	1/01/10
						100	1/01/10				
Metering Rollers, Dampening Rollers and Printing Plates	800	100	1/01/09	100	1/01/10	650	*at adoption*	100	1/01/11	100	1/01/10
						100	1/01/10				
On-Press Cleaning of Screens	500	100	1/01/09	300	*upon adoption*	300	*upon adoption*	300	*upon adoption*	100	1/01/10
				100	1/01/10	100	1/01/10				
								100	1/01/11		
Photocurable Resins from Stereolithography Equipment	No limit	25	1/01/09	No limit	*upon adoption*	900	*upon adoption*	No limit	1/01/10	No limit	1/01/10
Solvent-borne Fluropolymer Coatings	900	25	1/01/09	~~900~~ 25	*upon adoption* ~~1/01/09~~	25	1/01/09	25	1/01/09	900	*upon adoption*
Automatic cleaning for Screen Reclamation	500	100	1/01/09	100	1/01/09	100	1/01/09	100	1/01/09	100	1/01/10

In addition, as discussed earlier, staff is proposing to exercise enforcement discretion, so even with a No Project Alternative implementation, those affected solvent cleaning activites might not be complying with the final VOC content limits. Therefore, the Alternative B is considered the least toxic alternative because it establishes an interim limit, which would produce some emission reductions earlier than the other alternatives with a final compliance date at the same time as the proposed project.

Alternative A - No Project

Alternative A assumes that the proposed amendments to PARs 1171 and 1122 will not be adopted. Existing Rules 1171 and 1122 would remain in effect with no modifications. Most of the VOC emission reductions goals would occur by the date originally anticipated under previous amendments to Rules 1171 and 1122. As noted above, Alternative A is similar to the proposed project as compliant products are currently not available. Affected facilities would continue to be subject to enforcement discretion until compliant products are available. Further, unlike Alternative A, the proposed project has a date certain by which operators must comply with the final compliance limit. Under Alternative A, the enforcement discretion could, theoretically, occur indefinitely, which means the delayed VOC reductions could occur indefinitely.

Alternative B – Interim Limits Alternative

Alternative B would extend the final compliance deadlines for the final VOC content limits to January 1, 2010, similar to the proposed project. However, unlike the proposed project, Alternative B would require interim VOC content limits that are lower than the current limits for cleaning solvents used in UV/EB ink application equipment, UV/EB lamps and reflectors, metering rollers, dampening rollers and printing plates upon the date of adoption of the alternative. An interim VOC limit would be imposed on cleaning of photocurable resins from stereolithography equipment, which is currently exempt from any VOC content limit, as of January 1, 2010. The interim limit required for on-press cleaning of screens in screen printing under the proposed project would also be included in Alternative B.

Alternative C – Two-Year Delay in Final Compliance Deadlines Alternative

Alternative C would extend the final compliance deadlines for the final VOC content limits by two years, to January 1, 2011, for UV/EB ink application equipment, UV/EB lamps and reflectors, metering rollers, dampening rollers and printing plates, and on-press cleaning of screens in screen printing. Alternative C would also include the interim VOC content limit required upon adoption for on-press cleaning of screens in screen printing that is part of the proposed project and include the permanent exemption from complying with a VOC content limit for the cleaning of photocurable resins from stereolithography

equipment.

Alternative D – More Solvent Cleaning Activities Alternative

Similar to the proposed project, Alternative D would extend the final compliance deadlines for the final VOC content limits to January 1, 2010, for UV/EB ink application equipment, UV/EB lamps and reflectors, and metering rollers, dampening rollers and printing plates, as well as maintain the permanent exemption from complying with a VOC content limit for the cleaning of photocurable resins from stereolithography equipment. Unlike the proposed project, Alternative D would provide a permanent exemption for the cleaning of equipment using solvent-borne fluoropolymer coatings provided the cleaning solvent contains no more than 900 g/l. In addition, Alternative D would reinstate the exemption for on-press cleaning of screens and automatic cleaning equipment used in screen reclamation provided solvents contain no more than 500 g/l, which is higher than the interim limit in the proposed project, until January 1, 2010. On-press screen cleaning involves screens used in the printing process that are cleaned periodically with solvents during press runs to remove excess inks and/or contaminants. Reclamation is a process where screens are completely cleaned for recycling or reuse of the screens for other production runs. This process can be conducted in different ways, such as an automated, conveyorized or manual manner.

COMPARISON OF THE ALTERNATIVES

This Draft SEA identified in Chapter 4 those environmental topics where PARs 1171 and 1122 could cause significant adverse environmental impacts. The analysis revealed only air quality would be significantly adversely affected as a result of implementing PARs 1171 and 1122.

The following subsections briefly describe potential adverse air quality impacts that may be generated by each project alternative. Each environmental topic summary contains a brief description of the environmental impacts for each project alternative compared to impacts resulting from implementing the proposed amendments. Potential impacts for the environmental topics are quantified, and a comparison of the impacts for each of the environmental topics is summarized in Table 5-3 and the alternatives are ranked according to severity of potential adverse environmental impacts in Table 5-4.

Air Quality

Alternative A - No Project

This alternative assumes that the PARs 1171 and 1122 will not be adopted and the existing rules would remain in effect with no modifications. However, since the final compliance date has passed and, according to the studies, compliant products are not

available, Alternative A is equivalent to the proposed project. In addition, as discussed earlier, staff is proposing to exercise enforcement discretion, so even with a No Project Alternative implementation, those affected solvent cleaning activites might not be complying with the final VOC content limits. Affected facilities would continue to be subject to enforcement discretion until compliant products are available. So, under Alternative A, the enforcement discretion could, theoretically, occur indefinitely, which means the delayed VOC reductions could occur indefinitely. Contrary to Alternative A, the proposed project has a date certain by which operators must comply with the final compliance limit. So, depending on when the enforcement discretion is lifted, Alternative A will have equal, if not greater significant air quality impacts to the proposed project. Once the enforcement discretion is lifted, Alternative A would generate approximately 286~~282~~ pounds per day of anticipated VOC emissions reductions from solvent cleaning operation, which would assist in attaining the goals of the 2007 AQMP to meet federal and state ozone standards.

Alternative B – Interim Limits Alternative

Compared to the proposed project, Alternative B would require interim VOC content limits for cleaning solvents used in UV/EB ink application equipment, UV/EB lamps and reflectors, metering rollers, dampening rollers and printing plates before reaching the final compliance limit on January 1, 2010. Thus, upon adoption Alternative B would result in a delay in VOC emission reductions of 220 pounds per day, which is less than the proposed project. Like the proposed project, Alternative B would achieve most of the VOC emission reductions originally anticipated under Rules 1171 and 1122. In addition, by imposing a VOC content limit on cleaning cleaning of photocurable resins from stereolithography equipment, no permanent emission reductions will be foregone as they are under the proposed project.

Similar to the proposed project, the air toxic impact is not expected be significant. Replacement cleaning solvents are generally less toxic than conventional cleaning solvents and replacement solvents. The delay in complying with the lower VOC content limit would keep the conventional solvents, with potentially higher toxic impacts, in use for a longer period of time. However, since the volume of cleaning solvents used is not expected to change during the delayed compliance period, potential toxic impacts will not change from what is currently being generated. As a result, potential human health impacts from reformulating cleaning solvents with replacement solvents would remain less than significant. While the final compliance date is delayed for both the proposed project and Alternative B, Alternative B imposes an interim VOC content limit for certain cleaning solvent activities that is less than current VOC content limits, which the proposed project does not. Therefore, Alternative B should result in less toxic impacts compared to the proposed project. However, for both the proposed project and Alternative B, exposure to air toxics from solvents due to delayed compliance were

concluded to be less than significant.

Alternative C – Two-Year Delay in Final Compliance Deadlines Alternative

Compared to the proposed project, Alternative C would extend the final VOC content limits requirement for two years, to January 1, 2011, for UV/EB ink application equipment, UV/EB lamps and reflectors, metering rollers, dampening rollers and printing plates, and on-press cleaning of screens in screen printing. Alternative C would also include the interim VOC content limit for on-press cleaning of screens in screen printing required under the proposed project and would include the permanent exemption from complying with a VOC content limit for the cleaning of photocurable resins from stereolithography equipment. Therefore, Alternative C delays and permanently foregoes the same peak daily emission reductions of 282 pounds per day as the proposed project, but for a longer period of time. However, as of Janaury 1, 2011, Alternative C would ultimately achieve similar VOC emission reductions as the proposed project.

Similar to the toxic discussion under Alternative B, the volume of cleaning solvents used is not expected to change during the delayed compliance period, potential toxic impacts will not change from what is currently being generated. The additional delay in complying with the lower VOC content limit under Alternative C would keep the conventional solvents, with potentially higher toxic impacts, in use for a longer period of time compared to the proposed project. As is the case for the proposed project, exposure to potentially toxic high VOC cleaning solvents would continue the existing exposure scenario and, like the proposed project, is considered to be less than significant.

Alternative D – More Solvent Cleaning Activities Alternative

Alternative D would provide the same additional one-year compliance date extension as the proposed project for UV/EB ink application equipment, UV/EB lamps and reflectors, metering rollers, dampening rollers and printing plates, and on-press cleaning of screens in screen printing, as well as maintain the permanent exemption from complying with any VOC content limit for the cleaning of photocurable resins from stereolithography equipment. However, unlike the proposed project, Alternative D would extend the final compliance date to other solvent cleaning categories, which are currently required to comply with lower VOC content limit on January 1, 2009. The additional solvent cleaning categories have been recommended to staff in meetings on the proposed project.

Alternative D applies a permanent exemption to cleaning of application equipment used to apply solvent-borne fluoropolymer coatings provided the clean up solvent contains no more than 900 g/l. In addition, Alternative D reinstates the exemption for on-press cleaning of screens and automatic cleaning equipment used in screen reclamation provided the clean up solvent contains no more than 500 g/l. For on-press cleaning of

screens, the interim VOC content limit is higher than the interim limit required under the proposed project. Therefore, Alternative D will result in similar delay in VOC emission reductions as compared to the proposed project and Alternative B, but the peak daily VOC emissions delayed would be greater. Peak daily VOC emission reductions delayed under Alternative C would last longer than Alternative D, but peak daily VOC emission reductions delayed under Alternative D would be greater. Because of the greater amount of VOC emission reductions delayed, potential toxic impacts would be greater under Alternative D compared to the proposed project, Alternative A and Alternative B.

Environmentally Superior Alternative

Pursuant to CEQA Guidelines § 15126.6 (e)(2), if the environmentally superior alternative is the "no project" alternative, the CEQA document shall also identify an environmentally superior alternative among the other alternatives. As discussed earlier, Alternative A (No Project) is equivalent, if not greater, in significance than the proposed project. Alternative B is expected to achieve air quality benefits (e.g., VOC reductions) sooner than proposed project. Therefore, Alternative B is considered to be the environmentally superior alternative because it would produce less emission reductions forgone than the proposed project and Alternative C. Alternative B is also considered to be environmentally superior to Alternative D because Alternative D would produce an even greater amount of daily VOC emission reductions foregone.

Emission Reductions from Proposed Project and Alternatives

Table 5-2 highlights the estimated emission reductions and the delay in emission reductions from the proposed project and each project alternative.

TABLE 5-2

Comparison of Delay in Emission Reductions from Proposed Project and Project Alternatives

	Delay in Emission Reductions[1] (pounds per day)	**Delay will Last Until Final Compliance Date**	**Permanent Foregone Emission Reductions**[2] (pounds per day)	**TOTAL Peak Daily Delay in Emission Reductions** (pounds per day)	**SCAQMD VOC Daily Significance Threshold** (pounds per day)	**Significant?**
Proposed Project	280	1/01/10	5.56 ~~1.66~~	**286 ~~282~~**	55	Yes
Alternative A	282[3]	1/01/09	0	**282**[3]	55	No
Alternative B	220	1/01/10	1.66	**222**	55	Yes

TABLE 5-2 (CONTINUED)

Comparison of Delay in Emission Reductions from Proposed Project and Project Alternatives

	Delay in Emission Reductions[1] (pounds per day)	**Delay will Last Until Final Compliance Date**	**Permanent Foregone Emission Reductions**[2] (pounds per day)	**TOTAL Peak Daily Delay in Emission Reductions** (pounds per day)	**SCAQMD VOC Daily Significance Threshold** (pounds per day)	**Significant?**
Alternative C	280	1/01/11	1.66	**282**	55	Yes
Alternative D	420	1/01/10	6.66	**427**	55	Yes

1. Includes the emission reductions anticipated from UV/EB ink application equipment; UV/EB lamps/reflectors; metering rollers, dampening rollers and printing plates in UV/EB ink application equipment; and on-press cleaning of screens.
2. Includes cleaning of photocurable resins from stereolithography equipment.
3. Indefinitely or until enforcement discretion is lifted.

TABLE 5-3

Comparison of Adverse Environmental Impacts of Proposed Project to the Alternatives

Environmental Topic	**Proposed Project**	**Alternative A** (No Project)	**Alternative B** (Interim Limits)	**Alternative C** (Two-Year Delay in Final Compliance Deadlines)	**Alternative D** (More Solvent Cleaning Activities)
Air Quality – Criteria Pollutants (VOCs)	Significant (280 pounds/day delay in VOC emission reductions until 1/01/10; 5.56 ~~1.66~~ pounds/day permanently foregone)	Significant, Same as Proposed Project (282 pounds/day delay in VOC emission reductions until enforcement discretion is lifted)	Significant, Less than Proposed Project (220 pounds/day delay in VOC emission reductions until 1/01/10)	Significant, Greater than Proposed Project (280 pounds/day delay in VOC emission reductions until 1/01/11; 1.66 pounds/day permanently foregone)	Significant, Greater than Proposed Project (420 pounds/day delay in VOC emission reductions until 1/01/10; 6.66 pounds/day permanently foregone)
Non-Criteria Pollutants (TACs)	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant

TABLE 5-4

Ranking of Alternatives

Proposed Project and Alternatives	**Air Quality Impacts**		
	Criteria Pollutants	Non-Criteria Pollutants	Cumulative
Proposed Project	***x (3)***	***✓(3)***	✓
Alternative A	***x (2)***	***✓(2)***	✓
Alternative B	***x (1)***	***✓(1)***	✓
Alternative C	***x (5)***	***✓(5)***	✓
Alternative D	***x (4)***	***✓(4)***	✓

Notes: The ranking scale is such that 1 represents the least impacts and subsequent higher number represent increasingly worse or more substantial adverse impacts.
The same two numbers in brackets means that these proposals would have the same impacts if implemented
An ***x*** denotes either a project-specific or cumulative significant adverse impact.
A ✓ denotes no project-specific or no cumulative significant adverse impact.

CONCLUSION

Pursuant to CEQA Guidelines § 15126.6 (d), a matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. Tables 5-1 describe the alternatives considered by the SCAQMD and how they compare to the proposed project. Table 5-2 shows how impacts from the alternatives compare to impacts from the proposed project relative to generating significant adverse air quality impacts. Table 5-3 presents a matrix that lists the significant adverse impacts associated with the proposed project and the project alternatives for the only affected environmental topic analyzed. Table 5-4 ranks each impact section as to whether the proposed project or a project alternative would result in greater or lesser impacts relative to one another. While Alternative B is the environmentally superior alternative, concerns might be raised as to whether Alternative B would allow the necessary time to implement an interim limit before the final VOC content limit is required. Thus, the proposed project is the recommended feasible action.

CHAPTER 6

OTHER CEQA TOPICS

Significant Irreversible Environmental Changes

Potential Growth-Inducing Impacts

SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA Guidelines § 15126.2(c) requires an environmental analysis to consider "any significant irreversible environmental changes which would be involved if the proposed action should be implemented." The analysis in this Draft SEA identified air quality as the only environmental area with significant impacts as a result of the proposed project.

The delay in most of the emission reductions is temporary and, after January 1, 2010, air quality benefit will be achieved. In addition, those affected users will be required to comply with an interim limit which will immediately reduce VOC emissions. The analysis of toxics impacts indicated that, generally, solvents used in low-VOC coatings are typically less toxic than solvents used in conventional coatings. Because solvent cleaners are applied on an as-needed basis, continuous exposures would not occur. As a result, no significant carcinogenic or noncarcinogenic human health impacts are anticipated.

As can be seen by the information presented in this SEA, the proposed project would not result in irreversible environmental changes or the irretrievable commitment of resources.

POTENTIAL GROWTH-INDUCING IMPACTS

CEQA Guidelines § 15126.2(d) requires an environmental analysis to consider the "growth-inducing impact of the proposed action." Implementing PARs 1171 and 1122 will not have any direct or indirect growth-inducing impacts on businesses in the SCAQMD's jurisdiction because it is not expected to foster economic or population growth or the construction of additional housing and primarily affects existing cleaning solvent formulation companies.

As discussed in the air quality impacts section in Chapter 4, the proposed project results in significant adverse air quality impacts, which would have a direct effect on health and human beings. The impact, however, would be temporary as the final compliance limits are expected to be complied with at a later date. There will be permanent foregone emission reductions that would also have a direct effect on health and human beings, however, the environmental effect would not be significant since the amount foregone is only 5.56 ~~1.66~~ pounds of VOC per day.

APPENDIX A

PROPOSED AMENDED RULES 1171 AND 1122

In order to save space and avoid repetition, please refer to the latest version of the PARs 1171 and 1122 located elsewhere in the final rule package. The PARs 1171 and 1122 versions (each dated January 29, 2009) of the proposed amended rules circulated with the Draft SEA released on March 3, 2009 for a 45-day public review and comment period ending April 16, 2009 have been updated but, as noted in the preface, the changes do not require the SEA to be recirculated.

Original hard copies of the Draft SEA, which include PARs 1171 and 1122 versions (each dated January 29, 2009) of the proposed amended rules circulated with the Draft SEA, can be obtained through the SCAQMD Public Information Center at the Diamond Bar headquarters or by calling (909) 396-2039.