SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Subsequent Environmental Assessment for:

Proposed Amended Rule 1171 – Solvent Cleaning Operations

SCAQMD No. 071121MK
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PREFACE

The Draft Subsequent Environmental Assessment (SEA) for the Proposed Amended Rule 1171 – *Solvent Cleaning Operations*, was circulated for a 45-day public review and comment period from November 21, 2007 to January 4, 2008. One public comment letter was 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 worsen the environmental impact analyzed in the Draft SEA. 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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CHAPTER 1

EXECUTIVE SUMMARY

INTRODUCTION

The South Coast Air Quality Management District (SCAQMD) is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. 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 Rule 1171 – Solvent Cleaning Operations, is part of SCAQMD's overall effort to control VOC emissions in its area of jurisdiction. The rule 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.

Due to reported difficulties in working with the compliant cleaning solvents in certain applications, SCAQMD staff is proposing to: 1) extending final compliance with a lower volatile organic compound (VOC) content limit for ultraviolet or electron beam (UV/EB)

ink application equipment for one year, until January 1, 2009; 2) create a new solvent coating subcategory called on-press cleaning of screens and provide one-year extension of final compliance date; and 3) create a new metering roller, dampening roller, and printing plate category applicable only to UV/EB ink application equipment and extend the final compliance date one year. Other amendments include new requirements for labeling and reporting from suppliers, as well as removing outdated rule requirements.

Delaying the final compliance date will result in 340 pounds of VOC per day emission reductions foregone for one year until January 1, 2009, when the final lower VOC content limits become effective. The delay of 340 pounds per day VOC emission reductions 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 have an adverse impact 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. Rule 1171 was originally prepared pursuant to these mandates.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

PAR 1171 is 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.

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 Final ~~Draft~~ Subsequent Environmental Assessment (SEA) to address the potential adverse environmental impacts associated with implementing PAR 1171. This Final ~~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.

The preparation of a Draft SEA is the appropriate CEQA document because the proposed project is a modification to a previously approved project, the 1999 amendments to the Rule 1171, for which a September 1999 Final EA was prepared and certified by the Governing Board on October 8, 1999. In addition, two SEAs were prepared in February 2005 and April 2006 (certified by the Governing Board on May 6, 2005, and July 14, 2006, respectively) to analyze the impacts from delaying the final compliance dates for certain solvent cleaning categories including those in the current PAR 1171. 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 1999 Final EA, 2005 Final SEA and 2006 Final SEA due to a substantial increase in the severity of previously identified effects.

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. No new VOC content requirements are proposed that would trigger the need to solicit guidance from responsible and/or trustee agencies. Pursuant to CEQA Guidelines §15062(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. 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.

CEQA DOCUMENTATION FOR RULE 1171

In addition to this Final ~~Draft~~ SEA, a number of CEQA documents have been prepared for Rule 1171 when it was 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 CEQA documents for Rule 1171.

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 currently 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 district's, 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.

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

[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.

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.

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 Final ~~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 Rule 1171, they 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 Rule 1171 may rely on this SEA.

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	Cleaning solvent users and manufacturers raised concerns about the ability to comply with the final VOC content limits.	SCAQMD is proposing an extension of the final compliance date for one year while the testing of certain cleaning solvent formulations are being conducted at the affected facilities. Staff will evaluate the results and provide recommendations to amend the requirements if warranted.

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 Final ~~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 Final ~~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 PAR 1171. Briefly, the proposed amendments to Rule 1171 would:

- extend final compliance of a lower VOC content limit for UV/EB ink application equipment for one year until January 1, 2009;
- create a new solvent coating subcategory called on-press cleaning of screens and provide one-year extension of final compliance date;
- create a new metering roller, dampening roller, and printing plate category applicable only to UV/EB ink application equipment and extend the final compliance date one year;
- establish new product labeling requirements and reporting requirements from suppliers; and

- remove outdated rule requirements, including the technical assessment requirements and exemption for the cleaning of UV/EB adhesive application.

For a complete description of the proposed amendments 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 PAR 1171. The following subsection briefly highlights the existing setting for air quality, which is the only environmental area that could be adversely affected by implementing PAR 1171.

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 PAR 1171, staff used the emissions data presented in the staff report for the July 2006 amendment to Rule 1171 in evaluating the emissions impact of PAR 1171. The emissions inventory analysis in this section is based on year 2006 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 PAR 1171.

Air Quality

The proposed rule will delay compliance for two solvent cleaning categories, and extend an existing exemption from the rule requirements for the cleaning of metering rollers, dampening rollers and printing plates in UB/EB ink application equipment. The analysis concludes that the delay in VOC emission reductions, along with the extended exemption, 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 PAR 1171.

TABLE 1-2

Environmental Impacts from PAR 1171

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 and 2006 amendments to Rule 1171 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 PAR 1171:

- 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 PAR 1171. Table 1-4 lists the potentially significant environmental impacts resulting from implementing the alternatives as compared to the proposed project.

TABLE 1-3

Comparison of PAR 1171 to the Alternatives

Proposed Project	**Alternative A** (No Project)	**Alternative B** (Six-Month Delay in Final Compliance Deadlines)	**Alternative C** (Two-Year Delay in Final Compliance Deadlines)	**Alternative D** (Delay Final Compliance Deadlines for More Solvent Cleaning Activities)
R E Q U I R E M E N T S [subdivision ©]				
Delay final compliance date for cleaning solvents used in UV/EB ink application equipment to 1/01/09.	Maintain final compliance date of 1/01/08 to lower VOC content for UV/EB ink application equipment.	Delay further the final compliance date for cleaning solvents used in UV/EB ink application equipment to 7/01/08.	Delay further the final compliance date for cleaning solvents used in UV/EB ink application equipment to 1/01/10.	Delay further the final compliance date for cleaning solvents used in UV/EB ink application equipment to 1/01/09.
E X E M P T I O N S [subdivision (g)]				
Establish new exemption for on-press cleaning of screens (subset of existing screen printing activity) from complying with 100 grams per liter VOC content limit until 12/31/08.	No new exemption for on-press cleaning of screens in screen printing and maintain 100 grams per liter VOC content limit as of 1/01/08.	Establish six-month exemption for cleaning solvents used in on-press cleaning of screens in screen printing to 6/30/08.	Establish one-year exemption for cleaning solvents used in on-press cleaning of screens in screen printing to 12/31/09.	Delay further the final compliance date for cleaning solvents used in all screen printing activities to 1/01/09.
Extend exemption for the cleaning of metering rollers, dampening rollers and printing plates in UV/EB ink application equipment to 12/31/08.	Maintain end of exemption at 1/01/08 for the cleaning of metering rollers, dampening rollers and printing plates in all application equipment.	Extend exemption six months for the cleaning of metering rollers, dampening rollers and printing plates in UV/EB ink application equipment to 6/30/08.	Extend exemption two years for the cleaning of metering rollers, dampening rollers and printing plates in UV/EB ink application equipment to 12/31/09.	Extend exemption one year for the cleaning of metering rollers, dampening rollers and printing plates in all application equipment to 12/31/08.

TABLE 1-4

Comparison of Adverse Environmental Impacts of PAR 1171 to the Alternatives

Environmental Topic	**Proposed Project**	**Alternative A** (No Project)	**Alternative B** (Six-Month Delay in Final Compliance Deadlines)	**Alternative C** (Two-Year Delay in Final Compliance Deadlines)	**Alternative D** (Delay Final Compliance Deadlines for More Solvent Cleaning Activities)
Air Quality – Criteria Pollutants (VOCs)	Significant (340 pounds delay in VOC emission reductions for one year)	Not Significant (5,020 pounds of VOC emission reductions by 1/01/08)	Less significant than PAR 1171 (340 pounds per day delay in VOC emission reductions for six months)	More significant than PAR 1171 (340 pounds per day delay in VOC emission reductions for two years)	More significant than PAR 1171 (1,470 pounds per day delay in VOC emission reductions for one year)
Non-Criteria Pollutants (TACs)	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant

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).

CHAPTER 2

PROJECT DESCRIPTION

Project Location

Background

Project Objectives

Project Description

PROJECT LOCATION

PAR 1171 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).

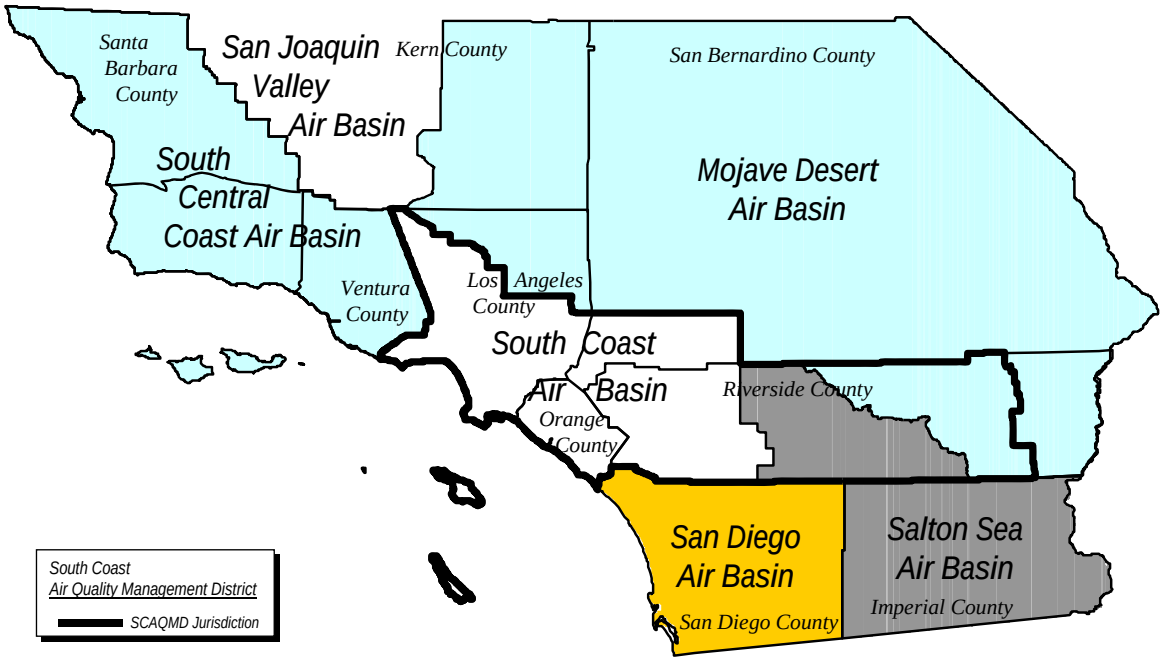

FIGURE 2-1

South Coast Air Quality Management District

BACKGROUND

Rule Development

Rule 1171 – Solvent Cleaning Operations, a key component of SCAQMD ozone reduction strategy, was 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 established a two-tiered approach in lowering the VOC content limits for all solvent cleaning activities. Tier I was implemented on December 1, 2001, and reduced VOC emissions by six tons per day from solvent cleaning activities. The second tier 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 required that a technology assessment be conducted for specific cleaning categories in order to determine the feasibility of the Tier II VOC limits for these 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 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.

Implementation of most of the Tier II limits have already occurred except for the category of cleaners used for cleaning ink application equipment used for lithography/letterpress, screen printing and UV/EB inks. The May 2005 amendment of Rule 1171 extended to July 1, 2006, the compliance date for the Tier II VOC limits for these remaining cleaning applications. Extended field testing was needed to determine any compatibility problems associated with the use of alternative cleaners over an extended time period.

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. As a result, the amount of delayed emission reductions was limited to 2.52 tons per day. Staff's extensive field evaluations and contacts with individual press operators revealed that while reformulated products made available, immediately after the July 1, 2005 effective date, to the printing operators progressively got better, even though there were serious performance issues associated with the first generation of the reformulated products.

Implementation of the Tier II VOC limits for the cleaning of ink application equipment used for lithographic/letterpress, screen printing, and UV/EB inks was dependent on the completion of a technology assessment. During the May 2005 amendment process, staff anticipated that the study would be completed by November 2005. Unforeseen circumstances caused a delay in the completion of the technology assessments. Because of the delay in the completion of the technology assessment, staff extended the Tier II compliance date for another year in order to give SCAQMD and industry additional time to evaluate the results of the technology assessment. Furthermore, the one-year delay allowed sufficient time for industry to further test and transition to the new cleaning materials.

With an upcoming compliance deadline on January 1, 2008, staff has conducted a number of site visits and has determined that more time is necessary to allow certain solvent cleaning activities to comply with the lower VOC content limit. The current amendments allow a one-year delay of the final compliance for cleaning solvents used in UV/EB ink application equipment and establish two new subsets of existing regulated solvent cleaning activities. One new subcategory is the on-press cleaning of screens in the screen printing activity and the other is the cleaning of metering rollers, dampening rollers and printing plates used in UB/EB ink application equipment only (as opposed to all application equipment). These two new subcategories to existing regulated solvent cleaning activities would be provided a one-year extension to comply with the lower VOC content limit of 100 grams per liter, provided the VOC content limit does not exceed the currently required VOC content limit.

In addition, due to an enforcement challenge involving an increasing number of non-compliant uses of solvent cleaning material, new labeling, reporting, and liability requirements are being proposed for solvent suppliers. Finally, outdated rule requirements will be removed from the rule.

PROJECT OBJECTIVES

The objectives of PAR 1171 are to:

1. Provide sufficient time for industry to complete testing and transition to the new cleaning solvents used in UV/EB ink application equipment and on-press cleaning of screens in screen printing by extending the final compliance date for one year.

2. Provide more time to solve the challenges using the cleaning solvents that comply with future lower VOC content limit for the cleaning of metering rollers, dampening

rollers and printing plates in UV/EB ink application equipment by providing an extension of the current exemption from rule provisions for one year.

3. Enhance enforcement efforts involving non-compliant uses of solvent cleaning products.

4. Remove outdated requirements where appropriate.

PROJECT DESCRIPTION

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

(a) Purpose and Applicability

Extend the applicability of the rule to include all solvent suppliers who supply, sell, or offer for sale solvent cleaning materials for use in solvent cleaning operations.

(b) Definitions

Add definitions to the following:

- Full Service Solvent Provider; ~~and~~
- On-Press Screen Cleaning;
- Screen Reclamation; and
- Solvent Supplier

(c) Requirements

- Extend the current January 1, 2008 compliance date for one year to implement low-VOC solvents (100 grams per liter or less of VOC) for solvents used in cleaning UV/EB ink application equipment [paragraph (c)(1)].

TABLE 2-1

Proposed VOC Content Limits for Rule 1171

Solvent Cleaning Activity	Current VOC Content Limit (grams/liter)	January 1, 2009 VOC Content Limit (grams/liter)
(vi) UV/EB Ink Application Equipment	650	100

- Any solvent supplier supplying solvent cleaning material for use by a solvent cleaning operation in the district, shall upon request by the Executive Officer, provide in a SCAQMD-approved electronic format, the following information: product name of the supplied solvent cleaning material; the name and address of the solvent cleaning operation that the product was supplied to; dates and quantities in which the product was supplied during the time period specified by the Executive Officer; ~~the user's or operator's specified use of the product~~; and the VOC content of the product as supplied; ~~and the intended VOC content of the product as applied~~. The solvent supplier shall maintain records necessary to provide this required information for three years.
- The operator shall maintain at all times and make available the correct written dilution instructions if dilution is necessary to meet all potentially applicable VOC limits in this rule. Any solvent supplier supplying solvent cleaning material for use by a solvent cleaning operation in the district shall provide correct written dilution instructions to the operator if dilution is necessary to meet all potentially applicable VOC limits in this rule. The solvent suppliers shall make available to the Executive Officer, upon request, the provided written dilution instruction, and maintain this record for three years.
- Any person who sells or offers for sale solvent cleaning materials for use in the District shall comply with the provisions of Rule 443.1 – Labeling of Materials Containing Organic Solvents.

(~~d~~) Technology Assessment

- Delete outdated requirement to conduct a technical assessment [subdivision (d)].

(d) General Prohibitions

- No full service solvent provider shall aid, abet or assist a solvent cleaning operation to use a supplied solvent in a non-compliant manner.~~, including but not limited to, providing a solvent that the supplier is aware or should have been aware that will likely be used in a non-compliant manner, or filling solvent cleaning equipment with non-compliant solvent cleaning material without ensuring the solvent will be properly diluted to meet the applicable VOC limits when applied~~.

(e) Test Methods

No changes are proposed to this subdivision.

(f) Rule 442 Applicability

No changes are proposed to this subdivision.

(g) Exemptions

- Remove outdated rule language to exempt the cleaning of UV/EB adhesive application equipment since the exemption ended on July 1, 2006 [paragraph (h)(5)(D)].

- Until January 1, 2009, provisions of (c)(1)(D)(v) shall not apply to ~~Establish an exemption for one year for cleaning products used for~~ on-press cleaning of screens in screen printing provided the clean-up solvent used for such cleaning contains no more than 500 grams per liter. ~~The lower VOC content limit of 100 grams per liter must be complied with by January 1, 2009~~ [paragraph (h)(9)].

- Until January 1, 2009, provisions of (c)(1)(D)(v) shall not apply to ~~Establish an exemption for one year for the cleaning products used for~~ cleaning of metering rollers, dampening rollers and printing plates in UV/EB ink application equipment provided the clean up solvent used for such cleaning contains no more than 800 grams per liter. ~~The lower VOC content limit of 100 grams per liter must be complied with by January 1, 2009~~ [subparagraph (h)(10)].

For a complete description of PAR 1171, the reader is referred to Appendix A of this Final ~~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. 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, as it exists at the time the notice of preparation is published, 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).

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 2006 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 > 9.5 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 >	0.12 ppm, 1-hour average > 0.08 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)	0.25 ppm, 1-hour 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 $\mu g/m^3$, AAM > 50 $\mu g/m^3$, 24-hour average >	50 $\mu g/m^3$, AAM > 150 $\mu g/m^3$, 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 $\mu g/m^3$, AAM >	15 $\mu g/m^3$, AAM > 65 $\mu g/m^3$, 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 $\mu g/m^3$, 30-day average >=	1.5 $\mu g/m^3$, 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
$\mu g/m^3$ = 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

2006 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 > 9.5 ppm, 8-hour	State > 9.0 ppm, 8-hour
LOS ANGELES COUNTY (Co)						
1	Central Los Angeles	362	3	2.6	0	0
2	Northwest Coast Los Angeles Co	365	3	2.0	0	0
3	Southwest Coast Los Angeles Co	363	3	2.3	0	0
4	South Coastal Los Angeles Co1	360	4	3.4	0	0
4	South Coastal Los Angeles Co2	--	--	--	--	--
6	West San Fernando Valley	365	5	3.4	0	0
7	East San Fernando Valley	365	4	3.5	0	0
8	West San Gabriel Valley	360	4	2.8	0	0
9	East San Gabriel Valley 1	365	2	1.7	0	0
9	East San Gabriel Valley 2	363	2	2.0	0	0
10	Pomona/Walnut Valley	365	3	2.1	0	0
11	South San Gabriel Valley	232*	3*	2.7*	0*	0*
12	South Central LA County	365	8	6.4	0	0
13	Santa Clarita Valley	363	2	1.3	0	0
ORANGE COUNTY						
16	North Orange County	362	6	3.0	0	0
17	Central Orange County	365	5	3.0	0	0
18	North Coastal Orange County	365	4	3.0	0	0
19	Saddleback Valley	365	2	1.8	0	0
RIVERSIDE COUNTY						
22	Norco/Corona	--	--	--	--	--
23	Metropolitan Riverside County 1	365	3	2.1	0	0
23	Metropolitan Riverside County 2	365	4	2.3	0	0
23	Mira Loma	364	4	2.7	0	0
24	Perris Valley	--	--	--	--	--
25	Lake Elsinore	362	1	1.0	0	0
29	Banning Airport	--	--	--	--	--
30	Coachella Valley 1**	365	2	1.0	0	0
30	Coachella Valley 2**	--	--	--	--	--
SAN BERNARDINO COUNTY						
32	NW San Bernardino Valley	360	3	1.8	0	0
33	SW San Bernardino Valley	--	--	--	--	--
34	Central San Bernardino Valley 1	365	3	2.0	0	0
34	Central San Bernardino Valley 2	364	3	2.3	0	0
35	East San Bernardino Valley	--	--	--	--	--
37	Central San Bernardino Mountains	--	--	--	--	--
38	East San Bernardino Mountains	--	--	--	--	--
DISTRICT MAXIMUM			8	6.4	0	0
SOUTH COAST AIR BASIN			8	6.4	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

3 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)

2006 Air Quality Data – South Coast Air Quality Management District

OZONE (O_3)							No. Days Standard Exceeded			
							Federal [b]		State [c]	
Source Rec. Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. (ppm, 1-hr)	Max. Conc. (ppm, 8-hr)	Fourth Highest Conc. (ppm, 8-hr)	Health Advisory ≥ 0.15 ppm, 1-hr	> 0.12 ppm, 1-hr	> 0.08 ppm, 8-hr	> 0.09 ppm, 1-hr	> 0.07 ppm, 1-hr
LOS ANGELES (LA) COUNTY (Co)										
1	Central LA	362	0.11	0.079	0.077	0	0	0	8	4
2	NW Coastal LA Co	365	0.10	0.074	0.069	0	0	0	3	0
3	SW Coastal LA Co	360	0.08	0.066	0.062	0	0	0	0	0
4	South Coastal LA Co1	364	0.08	0.058	0.058	0	0	0	0	0
4	South Coastal LA Co2	--	--	--	--	--	--	--	--	--
6	West San Fernando V	361	0.16	0.108	0.105	1	6	17	32	39
7	East San Fernando V	365	0.17	0.128	0.099	2	6	12	25	23
8	W San Gabriel Valley	365	0.15	0.117	0.095	1	5	7	25	24
9	E San Gabriel Valley 1	364	0.17	0.120	0.091	2	7	10	23	19
9	E San Gabriel Valley 2	363	0.18	0.128	0.107	2	10	15	37	31
10	Pomona/Walnut Valley	365	0.15	0.128	0.109	2	9	16	32	30
11	S San Gabriel Valley	250*	0.13*	0.095*	0.080*	0*	1*	3*	9*	5*
12	South Central LA Co	365	0.09	0.066	0.064	0	0	0	0	0
13	Santa Clarita Valley	359	0.16	0.120	0.112	1	20	40	62	64
ORANGE (OR) COUNTY (Co)										
16	North Orange Co	362	0.15	0.114	0.092	1	3	4	8	9
17	Central Orange Co	365	0.11	0.088	0.072	0	0	1	5	3
18	North Coastal OR Co	365	0.07	0.064	0.062	0	0	0	0	0
19	Saddleback Valley	356	0.12	0.105	0.092	0	0	6	13	17
RIVERSIDE (RV) COUNTY (Co)										
22	Norco/Corona	--	--	--	--	--	--	--	--	--
23	Metropolitan RV Co 1	365	0.15	0.116	0.113	1	8	30	45	59
23	Metropolitan RV Co 2	--	--	--	--	--	--	--	--	--
23	Mira Loma	364	0.16	0.119	0.107	1	4	25	39	48
24	Perris Valley	351	0.17	0.122	0.114	3	12	53	76	84
25	Lake Elsinore	362	0.14	0.109	0.102	0	3	24	40	58
29	Banning Airport	357	0.14	0.115	0.104	0	8	44	57	78
30	Coachella Valley 1**	361	0.13	0.109	0.101	0	2	23	37	67
30	Coachella Valley 2**	364	0.10	0.089	0.087	0	0	7	4	29
SAN BERNARDINO (SB) COUNTY										
32	Northwest SB Valley	365	0.17	0.130	0.114	2	14	25	50	54
33	Southwest SB Valley	--	--	--	--	--	--	--	--	--
34	Central SB Valley 1	361	0.16	0.123	0.116	1	12	29	47	49
34	Central SB Valley 2	362	0.15	0.127	0.119	3	10	29	52	57
35	East SB Valley	365	0.16	0.135	0.125	5	11	36	60	64
37	Central SB Mountains	365	0.16	0.142	0.112	2	9	59	71	96
38	East SB Mountains	--	--	--	--	--	--	--	--	--
DISTRICT MAXIMUM			0.18	0.142	0.125	5	20	59	76	96
SOUTH COAST AIR BASIN			0.18	0.142	0.125	10	35	86	102	121

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

b) The federal 1-hour ozone standard was revoked and replaced by the 8-hour average ozone standard effective June 15, 2005. The 8-hour average California ozone standard of 0.07 ppm was established effective May 17, 2006.

c) The state standard is 1-hour average NO_2 > 0.25 ppm. The federal standard is annual arithmetic mean NO_2 > 0.0534 ppm. Air Resources Board has approved to lower the NO_2 1-hour standard to 0.18 ppm and establish a new annual standard of 0.030 ppm. The revisions are expected to become effective later in 2007.

TABLE 3-2 (CONTINUED)
2006 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				
1	Central Los Angeles	360	0.11	0.0288
2	Northwest Coastal Los Angeles Co	365	0.08	0.0173
3	Southwest Coastal Los Angeles Co	351	0.10	0.0155
4	South Coastal Los Angeles Co1	357	0.10	0.0215
4	South Coastal Los Angeles Co2	--	--	--
6	West San Fernando Valley	363	0.07	0.0174
7	East San Fernando Valley	365	0.10	0.0274
8	West San Gabriel Valley	365	0.12	0.0245
9	East San Gabriel Valley 1	365	0.11	0.0258
9	East San Gabriel Valley 2	362	0.10	0.0206
10	Pomona/Walnut Valley	365	0.10	0.0307
11	South San Gabriel Valley	204*	0.10*	0.0283*
12	South Central LA County	363	0.14	0.0306
13	Santa Clarita Valley	359	0.08	0.0184
ORANGE COUNTY				
16	North Orange County	361	0.09	0.0224
17	Central Orange County	343	0.11	0.0197
18	North Coastal Orange County	361	0.10	0.0145
19	Saddleback Valley	--	--	--
RIVERSIDE COUNTY				
22	Norco/Corona	--	--	--
23	Metropolitan Riverside County 1	365	0.08	0.0199
23	Metropolitan Riverside County 2	--	--	--
23	Mira Loma	332	0.08	0.0194
24	Perris Valley	--	--	--
25	Lake Elsinore	352	0.07	0.0151
29	Banning Airport	355	0.11	0.0161
30	Coachella Valley 1**	359	0.09	0.0103
30	Coachella Valley 2**	--	--	--
SAN BERNARDINO COUNTY				
32	Northwest SB Valley	337	0.10	0.0310
33	Southwest SB Valley	--	--	--
34	Central SB Valley 1	362	0.09	0.0270
34	Central SB Valley 2	362	0.09	0.0252
35	East SB Valley	--	--	--
37	Central SB Mountains	--	--	--
38	East SB Mountains	--	--	--
DISTRICT MAXIMUM			0.14	0.0310
SOUTH COAST AIR BASIN			0.14	0.0310

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 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)

2006 Air Quality Data – South Coast Air Quality Management District

SULFUR DIOXIDE (SO_2)				
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Maximum Concentration[e)]	
			(ppm, 1-hour)	(ppm, 24-hour)
LOS ANGELES COUNTY				
1	Central Los Angeles	365	0.03	0.006
2	Northwest Coast Los Angeles County	--	--	--
3	Southwest Coast Los Angeles County	363	0.02	0.006
4	South Coastal Los Angeles County 1	364	0.03	0.010
4	South Coastal Los Angeles County 2	--	--	--
6	West San Fernando Valley	--	--	--
7	East San Fernando Valley	360	0.01	0.004
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	353	0.01	0.004
19	Saddleback Valley	--	--	--
RIVERSIDE COUNTY				
22	Norco/Corona	--	--	--
23	Metropolitan Riverside County 1	365	0.01	0.004
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	365	0.01	0.003
34	Central San Bernardino Valley 2	--	--	--
35	East San Bernardino Valley	--	--	--
37	Central San Bernardino Mountains	--	--	--
38	East San Bernardino Mountains	--	--	--
DISTRICT MAXIMUM			0.03	0.010
SOUTH COAST AIR BASIN			0.03	0.010

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

TABLE 3-2 (CONTINUED)

2006 Air Quality Data – South Coast Air Quality Management District

SUSPENDED PARTICULATE MATTER PM10 [f,]						
				No. (%) Samples Exceeding Standard		
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	Annual Average[i] AAM Conc. ($\mu g/m^3$)
LOS ANGELES COUNTY (Co)						
1	Central Los Angeles	59	59	0	3(5.1)	30.3
2	NW Coastal Los Angeles County	--	--	--	--	--
3	SW Coast Los Angeles County2	51	45	0	0	26.5
4	South Coastal Los Angeles County1	61	78	0	6(9.8)	31.1
4	South Coastal Los Angeles County2	58	117	0	19(32.7)	45.0
6	West San Fernando Valley	--	--	--	--	--
7	East San Fernando Valley	54	71	0	10(18.5)	35.6
8	West San Fernando Valley	--	--	--	--	--
9	East San Gabriel Valley 1	58	81	0	7(12.1)	31.9
9	East San Gabriel Valley 2	--	--	--	--	--
10	Pomona/Walnut Valley	--	--	--	--	--
11	South San Gabriel Valley	--	--	--	--	--
12	South Central LA County	--	--	--	--	--
13	Santa Clarita Valley	58	53	0	1(1.7)	23.4
ORANGE COUNTY						
16	North Orange County	--	--	--	--	--
17	Central Orange County	56	104	0	7(12.5)	33.4
18	North Coastal Orange County	--	--	--	--	--
19	Saddleback Valley	50	57	0	1(2.0)	22.8
RIVERSIDE COUNTY						
22	Norco/Corona	57	74	0	10(17.5)	36.5
23	Metropolitan Riverside County 1	118	109	0	71(60.2)	54.4
23	Metropolitan Riverside County 2	--	--	--	--	--
23	Mira Loma	59	124	0	41(69.5)	64.0
24	Perris Valley	54	125	0	19(35.2)	45.0
25	Lake Elsinore	--	--	--	--	--
29	Banning Airport	55	75	0	8(14.6)	31.1
30	Coachella Valley 1**	57	73+	0+	2(3.5)+	24.5+
30	Coachella Valley 2**	115	122+	0+	57(49.6)+	52.7+
SAN BERNARDINO COUNTY-						
32	NW San Bernardino Valley	--	--	--	--	--
33	SW San Bernardino Valley	62	78	0	17(27.4)	42.3
34	Central San Bernardino Valley 1	60	142	0	31(51.7)	53.5
34	Central San Bernardino Valley 2	57	92	0	24(42.1)	46.0
35	East San Bernardino Valley	60	103	0	12(20.0)	36.2
37	Central San Bernardino Mountains	58	63	0	1(1.7)	26.2
38	East San Bernardino Mountains	--	--	--	--	--
	DISTRICT MAXIMUM		142+	0+	71	64.0
	SOUTH COAST AIR BASIN		142+	0+	75	64.0

KEY:

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

f) 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.

TABLE 3-2 (CONTINUED)
2006 Air Quality Data – South Coast Air Quality Management District

SUSPENDED PARTICULATE MATTER PM2.5 [g]					No. (%) Samples Exceeding Standard	Annual Averages[j]
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. (µg/m^3, 24-hour)	98th Percentile Conc. in µg/m3 24-hr	Federal > 65 µg/m^3, 24-hour	AAM Conc. (µg/m^3)
LOS ANGELES COUNTY						
1	Central Los Angeles	330	56.2	38.9	0	15.6
2	Northwest Coastal Los Angeles Co	--	--	--	--	--
3	Southwest Coastal Los Angeles Co 2	--	--	--	--	--
4	South Coastal Los Angeles Co 1	290*	58.5*	34.9*	0*	14.2*
4	South Coastal Los Angeles County 2	320	53.6	35.3	0	14.5
6	West San Fernando Valley	92	44.1	32.0	0	12.9
7	East San Fernando Valley	104	50.7	43.4	0	16.6
8	West San Gabriel Valley	113	45.9	32.1	0	13.4
9	East San Gabriel Valley 1	278*	52.8*	38.5*	0*	15.5*
9	East San Gabriel Valley 2	--	--	--	--	--
10	Pomona/Walnut Valley	--	--	--	--	--
11	South San Gabriel Valley	116	72.2	43.1	1(0.9)	16.7
12	South Central LA County	107	55.0	44.5	0	16.7
13	Santa Clarita Valley	--	--	--	--	--
ORANGE COUNTY						
16	North Orange County	--	--	--	--	--
17	Central Orange County	330	56.2	40.5	0	14.1
18	North Coastal Orange County	--	--	--	--	--
19	Saddleback Valley	106	47.0	25.7	0	11.0
RIVERSIDE COUNTY						
22	Norco/Corona	--	--	--	--	--
23	Metropolitan Riverside County 1	300	68.5	53.7	1(0.3)	19.0
23	Metropolitan Riverside County 2	105	55.3	47.7	0	17.0
23	Mira Loma	113	63.0	52.5	0	20.6
24	Perris Valley	--	--	--	--	--
25	Lake Elsinore	--	--	--	--	--
29	Banning Airport	--	--	--	--	--
30	Coachella Valley 1**	111	24.8	15.9	0	7.7
30	Coachella Valley 2**	107	24.3	19.1	0	9.5
SAN BERNARDINO COUNTY						
32	Northwest San Bernardino Valley	--	--	--	--	--
33	Southwest San Bernardino Valley	107	53.7	41.5	0	18.5
34	Central San Bernardino Valley1	112	52.6	43.8	0	17.6
34	Central San Bernardino Valley2	102	55.0	48.4	0	17.8
35	East San Bernardino Valley	--	--	--	--	--
37	Central San Bernardino Mountains	--	--	--	--	--
38	East San Bernardino Mountains	42*	40.1*	40.1*	0*	11.2*
DISTRICT MAXIMUM			72.2	53.7	1	20.6
SOUTH COAST AIR BASIN			72.2	53.7	1	20.6

KEY:

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

g) 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.

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

TABLE 3-2 (CONTINUED)

2006 Air Quality Data – South Coast Air Quality Management District

TOTAL SUSPENDED PARTICULATES TSP [h]				
Source Receptor Area No.	Location of Air Monitoring Station	No. Days of Data	Max. Conc. (µg/m^3, 24-hour)	Annual Average AAM Conc. (µg/m^3)
LOS ANGELES COUNTY (Co)				
1	Central Los Angeles	59	109	63.3
2	Northwest Coastal Los Angeles Co	56	76	40.2
3	Southwest Coast Los Angeles Co 2	56	84	43.1
4	South Coastal Los Angeles Co 1	62	157	62.9
4	South Coast Los Angeles Co 2	59	192	71.1
6	West San Fernando Valley	--	--	--
7	East San Fernando Valley	--	--	--
8	West San Gabriel Valley	60	123	42.8
9	East San Gabriel Valley 1	59	142	68.4
9	East San Gabriel Valley 2	--	--	--
10	Pomona/Walnut Valley	--	--	--
11	South San Gabriel Valley	58	768	79.3
12	South Central LA County	58	147	68.4
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	59	169	91.2
23	Metropolitan Riverside County 2	59	131	72.9
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	58	105	54.6
33	SW San Bernardino Valley	--	--	--
34	Central San Bernardino Valley 1	59	190	101.0
34	Central San Bernardino Valley 2	54	174	87.0
35	East San Bernardino Valley	--	--	--
37	Central San Bernardino Mountains	--	--	--
38	East San Bernardino Mountains	--	--	--
DISTRICT MAXIMUM			768	101.0
SOUTH COAST AIR BASIN			768	101.0

KEY:

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

h) Federal annual PM10 standard (AAM > 50 µg/m^3) was revoked effective December 17, 2006. State standard is annual average (AAM) > 20 µg/m3.

TABLE 3-2 (CONCLUDED)
2006 Air Quality Data – South Coast Air Quality Management District

Source Receptor Area No.	Location of Air Monitoring Station	LEAD[h)] Max. Monthly Average Conc[k)] ($\mu g/m^3$)	LEAD[h)] Max. Quarterly Average Conc.[k)] ($\mu g/m^3$)	SULFATES (SOx)[h)] Max. Conc. ($\mu g/m^3$, 24-hour)	SULFATES (SOx)[h)] No. (%) Samples Exceeding State Standard $\geq$ 25 $\mu g/m^3$, 24-hour
LOS ANGELES COUNTY (Co)					
1	Central Los Angeles	0.02	0.01	18.2	0
2	Northwest Coastal Los Angeles Co	--	--	12.2	0
3	Southwest Coastal Los Angeles Co 2	0.01	0.01	13.6	0
4	South Coastal Los Angeles Co 1	0.01	0.01	17.8	0
4	South Coastal Los Angeles Co 2	0.01	0.01	18.8	0
6	West San Fernando Valley	--	--	--	--
7	East San Fernando Valley	--	--	--	--
8	West San Gabriel Valley	--	--	28.7	1(1.7)
9	East San Gabriel Valley 1	--	--	20.8	0
9	East San Gabriel Valley 2	--	--	--	--
10	Pomona/Walnut Valley	--	--	--	--
11	South San Gabriel Valley	0.03	0.02	28.6	1(1.7)
12	South Central LA County	0.02	0.02	24.1	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	0.01	0.01	10.8	0
23	Metropolitan Riverside County 2	0.01	0.01	9.9	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	0.01	0.01	9.1	0
33	SW San Bernardino Valley	--	--	--	--
34	Central San Bernardino Valley 1	--	--	10.3	0
34	Central San Bernardino Valley 2	0.02	0.01	11.0	0
35	East San Bernardino Valley	--	--	--	--
37	Central San Bernardino Mountains	--	--	--	--
38	East San Bernardino Mountains	--	--	--	--
DISTRICT MAXIMUM		0.03	0.02	28.7	1
SOUTH COAST AIR BASIN		0.03	0.02	28.7	1

KEY:

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

h) Federal annual PM10 standard (AAM > 50 $\mu g/m^{3)}$ was revoked effective December 17, 2006. State standard is annual average (AAM) > 20 µg/m3.

k) Federal lead standard is quarterly average > 1.5 µg/m3; and state standard is monthly average > µg/m3. No location exceeded lead standards.

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 2006. Carbon monoxide concentrations did not exceed the standards in 2006. The highest eight-hour average carbon monoxide concentration recorded (6.4 ppm in the

South Central Los Angeles County area) was 71 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 2006, 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 2006, the maximum ozone, PM10 and PM2.5 concentrations in the Basin continued to exceed federal standards by wide margins. Maximum one-hour and eight-hour average ozone concentrations were 0.18 ppm and 0.142 ppm (the one-hour was recorded in East San Gabriel Valley and the eight-hour was recorded in Central San Bernardino Mountains area). The eight-hour standard was 178 percent of the federal standards. The federal one-hour standard was revoked and replaced by the eight hour standard on June 15, 2005.

In 1997, the USEPA promulgated a new 8-hour national ambient air quality standard for ozone. Soon thereafter, a court decision ordered that the USEPA could not enforce the new standard until adequate justification for the new standard was provided. The USEPA appealed the decision to the Supreme Court. On February 27, 2001, the Supreme Court upheld USEPA's authority and methods to establish clean air standards. The Supreme Court, however, ordered USEPA to revise its implementation plan for the new ozone standard. The EPA has since adopted the new 8-hour standard. The SCAQMD adopted an 8-hour ozone SIP in June 2007 and CARB adopted its state strategy as well as approving the SCAQMD SIP in September 2007.

The objective of the 2007 AQMP is to attain and maintain ambient air quality standards. Based upon the modeling analysis described in the Draft 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 2006, 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. The nitrogen dioxide state standard was not exceeded at any SCAQMD monitoring location in 2006. The highest one-hour average concentration recorded (0.14 ppm in South Central Los Angeles) was 56 percent of the state 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 2006 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 2006. Sulfur dioxide was not measured at SSAB sites in 2006. 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 20 locations in 2006. Highest PM10 concentrations were recorded in Riverside and San Bernardino counties in and around the Metropolitan Riverside County area and further inland in San Bernardino Valley areas. The federal 24-hour standard was not exceeded at any of the locations monitored in 2005. The much more stringent state standards were exceeded in most areas.

The SCAQMD began regular monitoring of PM2.5 in 1999 following the U.S. EPA's adoption of the national PM2.5 standards in 1997. In 2005, PM2.5 concentrations were monitored at 19 locations throughout the district. Maximum 24-hour average concentration has increased at some locations compared to 2001, the basis of the 2003 AQMP air quality data. The PM2.5 annual average concentrations and the highest 98th percentile PM2.5 concentrations (which the federal 24-hour PM2.5 standard is based on), however, are lower than 2001 levels at all locations monitored.

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 the metropolitan area of 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 were not exceeded in any area of the SCAQMD in 2005. 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/m3) was two percent of the federal standard. Additionally, special monitoring stations immediately adjacent to stationary sources of lead (e.g., lead smelting facilities) have not recorded exceedances of the standards in localized areas of the Basin since 1991 and 1994 for the federal and state standards, respectively. The maximum monthly and quarterly average lead concentration (0.44 μg/m3 and 0.34 μg/m3 in Central Los Angeles), measured at special monitoring sites immediately adjacent to stationary sources of lead were 29 and 23 percent of the state and federal standards, respectively. No lead data were obtained at SSAB and Orange County stations in 2005, and because historical lead data showed concentrations in SSAB and Orange County areas to be well below the standard, measurements have been discontinued.

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 2005, the state sulfate standard was not exceeded anywhere in the Basin. No sulfate data were obtained at SSAB and Orange County stations in 2005. Historical sulfate data showed concentrations in the SSAB and Orange County areas to be well below the standard, and measurements have been discontinued.

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.

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, 2004). 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).

In June 2005, Governor Schwarzenegger signed Executive Order #S-3-05 which established the following greenhouse gas reduction targets:

- By 2010, Reduce to 2000 Emission Levels,
- By 2020, Reduce to 1990 Emission Levels, and
- By 2050, Reduce to 80 percent below 1990 Levels.

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 represents 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 lays 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 will require 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.

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: CEC, 2005

The combination of Executive Order #S-3-05 and AB32 will require significant development and implementation of energy efficient technologies and shifting of energy production to renewable sources.

CO2 emissions in South Coast Air Basin (SCAB) for the year 2002. The total CO2 emissions in the SCAB were estimated to be about 153 million metric tons 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.

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.

Health Effects

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.

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 relative 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 Rule 1171 would be formulated by using 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 PAR 1171, staff used the emissions data presented in the staff report for the July 2006 amendment to Rule 1171. The emissions inventory analysis in this section is based on year 2006 emissions; therefore, no growth factors are included in the emissions inventory. Since staff does not anticipate any substantial changes to the 2006 baseline emissions inventory compared to baseline emissions presented as part of the July 2006 amendment process, the 2007 inventory is 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 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 activities for year 2007, the originally anticipated rule reductions as of January 1, 2008, and the remaining inventory after January 1, 2008 if the current rule requirements were implemented. Not all these reductions will be achieved with the implementation of the proposed project. The proposed delay in emission reductions are presented in Chapter 4.

TABLE 3-4

Rule 1171 VOC Emissions Inventory in pounds per day for Year 2007

	Lithography or Letter Press Printing – Conventional Inks	**UV/EB Ink Application Equipment**	**Screen Printing (subset: On-Press Cleaning of Screens)**	**Total Emission Reductions (as of 1/1/08)**
2007 Inventory (pounds/day)	4540	260	1420 (140)	---
Projected Emission Reductions (pounds/ day) as of January 1, 2008 if Current Rule us Implemented	3660	220	1140 (120)	5020
Projected Remaining Inventory after January 1, 2008 (pounds/day)	880	40	280 (20)	

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 Final ~~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. The proposed amendments represent a modification of the Rule 1171 amendments adopted in 1999 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. Therefore, no NOP/IS was prepared or circulated for this project. SCAQMD's review of the proposed project shows that the project would have a significant adverse effect on the environment. 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 PAR 1171.

Only one environmental impact area, air quality, was identified as a potentially significant adverse effect 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.

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
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	

TABLE 4-1 (CONCLUDED)

SCAQMD Air Quality Significance Thresholds

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 μg/m^3 (recommended for construction) [(b)] 2.5 μg/m^3 (operation) 1.0 μg/m^3 20 μg/m^3
PM2.5 24-hour average	10.4 μg/m^3 (recommended for construction) [(b)] 2.5 μg/m^3 (operation)
Sulfate 24-hour average	 1 μg/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.

Construction Emissions

PROJECT-SPECIFIC IMPACT: The Final EA prepared for the 1999 amendments to Rule 1171 did not require construction because the affected operators would simply comply using different cleaning solvents. Since the final VOC content limits do not ultimately change as a result of implementing PAR 1171, implementing the proposed project will also not trigger any construction activity. As a result, it is not anticipated that PAR 1171 will require process or equipment construction or alterations at any affected facilities. Therefore, no add-on control equipment or additional employees will be required from the implementation of the proposed amendments. Thus, no construction emissions or adverse air quality impacts from construction are expected as a result of implementing the proposed project.

Operational Emissions

PROJECT-SPECIFIC IMPACT: Two potential adverse air quality issues arise relative to implementing PAR 1171. Due to the proposed amendments, the following has potential to occur: 1) a delay of originally anticipated VOC emission reductions due to an extension in complying with the final VOC content limit for cleaning solvents used in UV/EB ink application equipment and on-press cleaning of screens in screen printing; and 2) delay in anticipated VOC emission reductions from extending the existing exemption for cleaning metering rollers, dampening rollers and printing plates used in UV/EB ink application equipment. Overall, there will be an air quality benefit from Rule 1171 as three solvent cleaning activities will be lowered to the 100 grams per liter VOC content limit as of January 1, 2008. These three solvent cleaning activities are the lithographic/letterpress printing applications (other substrates), screen printing (except for the on-press cleaning of screens which constitute ten percent of the whole screen printing category) and metering rollers, dampening rollers and printing plates in all application equipment except UV/EB ink application equipment. Rule 1171 currently requires these solvent cleaning applications to be lowered to a 100 grams per liter VOC content limit as of January 1, 2008, so these emission reductions do not result from the currently proposed amendments.

Delay in VOC Emission Reductions

PAR 1171 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 one year to January 1, 2009, after which all originally anticipated emission reductions would occur. Table 4-2 outlines the delay in emission reductions from each affected solvent cleaning activity.

TABLE 4-2

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

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)	**Delay will Last Until Final Compliance Date**	**SCAQMD VOC Daily Significance Threshold** (pounds per day)	**Significant?**
220	120	**340**	1/01/09	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 340 pounds of VOC emissions per day. This total includes maintaining for one year a limited exemption for the cleaning metering rollers, dampening rollers and printing plates used in UV/EB ink application equipment.

A VOC emission reduction delay of approximately 340 pounds per day exceeds the SCAQMD's CEQA significance operational 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 EA prepared for the 1999 amendments evaluated exposure to TACs resulting from reformulating conventional cleaning solvents with replacement cleaning solvents to comply with the final VOC content limits currently in Rule 1171. That analysis concluded that replacement cleaning solvents are generally less toxic than conventional cleaning solvents. As a result, human health impacts from reformulating cleaning solvents with replacement solvent would not be significant. Since the main effect of PAR 1171 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 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 are not expected to change during the delay of compliance, toxic impacts will not change from what is currently being generated.

The final EA for PAR 1171 in 1999 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 increased use of potentially toxic materials in reformulated cleaners will generally be balanced by a concurrent decrease in the use of materials in currently used cleaners that are typically more toxic, so toxic air contaminant impacts would not be expected to increase compared to existing conditions. According to the most recent studies conducted for the technological assessment, 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), esters used in soy cleaners, based on available data and their structure, were likely to have low toxicity. With regard to the 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, coordinatoion, 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 to your skin.

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 does not 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, it is concluded that the increased use of potentially toxic materials in reformulated cleaners will generally be balanced by a concurrent decrease in the use of more toxic materials in currently used cleaners. Toxic air contaminant impacts would not be expected to increase compared to existing conditions and, therefore, is considered not significant.

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 PAR 1171 will not result in a significant adverse cumulative impact because there are no permanently foregone VOC emission reductions and, thus, the expected goals in the 1999 amendments will be met by January 1, 2009, achieving an overall air quality benefit.

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). Indeed, air quality modeling performed for the 2007 AQMP indicated that the Basin would achieve all federal ambient air quality standards by the year 2023 (SCAQMD, 2007). Future VOC control measures will assist in achieving the goal of federal 8-hour ozone attainment by 2023.

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. Therefore, there will be no significant cumulative adverse air quality impacts from implementing PAR 1171.

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. Rule 1171 involves VOC emissions from solvent cleaning activity and does not affect those processes which would result in GHG emissions, such as CO2, CH4, N2O, SF6, HFCs and PFCs. Relative to GHGs, implementing PAR 1171 is not expected to increase or reduce GHG emissions. Therefore, implementing PAR 1171 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

An EA with no significant adverse impacts was originally prepared for the 1999 amendments to Rule 1171, describing anticipated environmental impacts resulting from implementing the

1999 amendments to Rule 1171. It was concluded in the Final EA that the environmental areas identified in the following subsections would not be significantly adversely affected by PAR 1171. 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 EA for the 1999 amendments to Rule 1171. In addition, as noted in Chapter 1, Rule 1171 was amended in years 2005 and 2006 and the EAs for those amendments relied on the same reasons as disclosed in the 1999 Final EA. A brief discussion of why PAR 1171 will not significantly adversely affect each of these environmental areas is provided in the following sections.

Aesthetics

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that because the 1999 amendments did not require construction activities at any affected facilities. As a result, significant adverse aesthetics impacts were not expected to occur. Similarly, PAR 1171 is not expected to require construction to install control equipment because the primary means of compliance is through product reformulation. Similarly, PAR 1171 does not require the construction of any new buildings or other structures. As a result, PAR 1171 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. The conclusion in that document regarding effects on agricultural resources was that significant adverse impacts would not occur because the 1999 amendments were not expected to affect land uses, including agricultural uses, in any way. Implementing PAR 1171 will not result in any new construction of buildings or other structures. Solvents cleaning activity primarily is used at sites where construction has already occurred, sites such as the operation of residential, commercial, or industrial land use projects. As a result, implementing PAR 1171 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 PAR 1171.

Biological Resources

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that significant adverse biological resource impacts would not occur because the proposed project did not foster growth or development that could affect biological resources directly or indirectly. PAR 1171 is not expected to require construction activities to install control

equipment because the primary means of compliance is through product reformulation. Similarly, PAR 1171 does not require the construction of any new buildings or other structures. As a result, implementing PAR 1171 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 PAR 1171 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 PAR 1171 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, PAR 1171 will 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 September 1999 Final EA for the 1999 amendments to Rule 1171 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 PAR 1171 are not expected, no impacts to historical or cultural resources are anticipated to occur as a result of implementing the proposed project. PAR 1171 is 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 PAR 1171.

Energy

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that significant adverse energy impacts would not occur because using low VOC cleaning solvents does not require energy intensive 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, PAR 1171 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 PAR 1171 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, PAR 1171 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 September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that significant adverse geology and soils impacts would not occur because the proposed project only affects cleaning operations at affected facilities and does not require construction or grading. There are no provisions in the proposed amended rule, 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 rule will not expose persons or property to geological hazards such as earthquakes, landslides, mudslides, ground failure, or other natural hazards. Since PAR 1171 does 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 from the implementation of PAR 1171. Further, PAR 1171 is 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 September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that significant adverse hazards impacts would not occur because replacement cleaning solvents tend to be less hazardous than conventional (high VOC) cleaning solvents. PAR 1171 has 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 required the final lower VOC content limit 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 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 the currently proposed amendments. In any event, it is likely that for some solvent cleaning categories acetone usage could increase. 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 accidental release of acetone could increase, the severity of an incident involving acetone transport will not change as a result of the proposed project. This holds true for the transport of other replacement solvents.

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 Rule 1171 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 PAR 1171 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 some sites regulated by PAR 1171 may be on such a list, most affected sites are not expected to be on this list, and would 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 Rule 1171 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 residential, industrial, or commercial facilities, implementation of PAR 1171 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. PAR 1171 has 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 PAR 1171 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 PAR 1171

Hydrology and Water Quality

The September 1999 Final EA for the 1999 amendments to Rule 1171 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 September 1999 Final EA 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 PAR 1171. Further, PAR 1171 is not expected to cause affected facilities to violate any water quality standard or wastewater discharge requirements since wastewater volumes associated with PAR 1171 have been previously analyzed and will remain unchanged. PAR 1171 is 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 PAR 1171 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 PAR 1171 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 PAR 1171 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. PAR 1171 is 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, PAR 1171 is not expected to expose persons or structures to significant new flooding risks. Finally, PAR 1171 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.

PAR 1171 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 PAR 1171. Accordingly, PAR 1171 is not expected to generate significant adverse impacts relative to construction of new storm water drainage facilities.

Land Use and Planning

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that significant adverse land use and planning impacts would not occur because the proposed project primarily affected existing facilities so no change in land use designations were necessary. Since PAR 1171 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 PAR 1171 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 PAR 1171 would affect cleanup operations at existing facilities and does not involve construction of any structures, it 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 amended rule.

Mineral Resources

Similar to the conclusions in the September 1999 Final EA for the 1999 amendments to Rule 1171, there are no provisions in PAR 1171 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 PAR 1171 are not anticipated.

Noise

The September 1999 Final EA for the 1999 amendments to Rule 1171 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 PAR 1171 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 PAR 1171 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. PAR 1171 is 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 PAR 1171 is 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, PAR 1171 is not expected to expose persons residing or working in the vicinity of public or private airports to excessive noise levels.

Population and Housing

The September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that the proposed project 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 PAR 1171. As such, PAR 1171 will not result in changes in population densities or induce significant growth in population. As such, PAR 1171 is not expected to substantially alter cleanup practices at sites solvent cleaning takes place. Consequently, PAR 1171 is 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 September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that the proposed project 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 interim and final VOC content limits since acetone has been delisted as a VOC and has the lowest flash point and highest flammability

rating of the possible replacement materials. PAR 1171 does 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 Rule 1171 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 PAR 1171 is not expected to increase the fire hazards associated with cleanup 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 PAR 1171 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 September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that the proposed project 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 PAR 1171 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 PAR 1171. 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 September 1999 Final EA for the 1999 amendments to Rule 1171 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). Rule 1171 is not the cause of waste generation, but simply requires the cleaning materials used for certain operations to meet a specified VOC content. Existing Rule 1171 already recommends that solvent-laden rags be kept in non-leaking containers. Thus, PAR 1171 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 PAR 1171 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 PAR 1171 is not expected to generate significant new adverse hazardous waste impacts.

Therefore, there are no significant adverse solid and hazardous waste impacts associated with the proposed amendments to Rule 1171. As a result, no net increase in the amount or character of solid or hazardous waste streams is expected to occur. PAR 1171 is 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 September 1999 Final EA for the 1999 amendments to Rule 1171 concluded that the proposed project would not create significant adverse transportation/traffic impacts because use of compliant cleaning solvents has no effect on vehicle trips to affected facilities. Further, the 1999 amendments did 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 effect 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 PAR 1171 is not expected to significantly adversely affect circulation patterns on local roadways or the level of service at intersections near affected facilities or sites.

PAR 1171 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 PAR 1171 and, therefore, implementation of PAR 1171 is not expected to adversely to affect air traffic patterns. Further, PAR 1171 will not affect in any way air traffic in the region because, to the extent that cleaning solvents are shipped by air, no 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 PAR 1171 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 PAR 1171 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. PAR 1171 has no relationship at all with alternative transportation, such as bus turnouts, bicycle racks, etc. Consequently, implementing PAR 1171 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 PAR 1171 and relevant regional plans pursuant to the SCAG Handbook and SCAQMD Handbook.

Consistency with the Air Quality Management Plan

Rule 1171 is 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 PAR 1171 will 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, 2009, 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, PAR 1171 is 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 PAR 1171 is 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. Proposed amended Rule 1171 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. PAR 1171 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 PAR 1171 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. Proposed amended Rule 1171 in relation to the GMC is 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, 2009.

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

Proposed amended Rule 1171 is 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 PAR 1171, there will not be an increase in material transport trips associated with the implementation of PAR 1171. 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 Final ~~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 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(c)). These concepts and the rationale for rejecting them as infeasible are discussed in the following subsection.

Accelerated Compliance of Final VOC Content Limit

This proposed alternative would accelerate the compliance date for requiring the final VOC content limit of cleaning solvents used in UV/EB in application equipment and on-press cleaning of screens in screen printing to three months until April 1, 2008. However, there is not adequate time to expect the affected industry to comply in such short notice given the time it takes to ensure applicability of effective compliant solvent alternatives and provide operators at individual affected facilities 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. 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 PAR 1171. 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 PAR 1171 is 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 PAR 1171 and each of the project alternatives: Alternative A (No Project); Alternative B (Six-Month Delay in Final Compliance Deadlines); Alternative C (Two-Year Delay in Final Compliance Deadlines); and Alternative D (Additional Delay in Final Compliance Deadlines for More Solvent Cleaning Activities). All other components of PAR 1171 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.

TABLE 5-1

Comparison of PAR 1171 to the Alternatives

Proposed Project	**Alternative A** (No Project)	**Alternative B** (Six-Month Delay in Final Compliance Deadlines)	**Alternative C** (Two-Year Delay in Final Compliance Deadlines)	**Alternative D** (Delay Final Compliance Deadlines for More Solvent Cleaning Activities)
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 1/01/09.	Maintain final compliance date of 1/01/08 to lower VOC content for UV/EB ink application equipment.	Delay further the final compliance date for cleaning solvents used in UV/EB ink application equipment to 7/01/08.	Delay further the final compliance date for cleaning solvents used in UV/EB ink application equipment to 1/01/10.	Delay further the final compliance date for cleaning solvents used in UV/EB ink application equipment to 1/01/09.
E X E M P T I O N S [subdivision (g)]				
Establish new exemption for on-press cleaning of screens (subset of existing screen printing activity) from complying with 100 grams per liter VOC content limit until 12/31/08.	No new exemption for on-press cleaning of screens in screen printing and maintain 100 grams per liter VOC content limit as of 1/01/08.	Establish six-month exemption for cleaning solvents used in on-press cleaning of screens in screen printing to 6/30/08.	Establish two-year exemption for cleaning solvents used in on-press cleaning of screens in screen printing to 12/31/09.	Delay further the final compliance date for cleaning solvents used in all screen printing activities to 1/01/09.
Extend exemption for the cleaning of metering rollers, dampening rollers and printing plates in UV/EB ink application equipment to 12/31/08.	Maintain end of exemption at 1/01/08 for the cleaning of metering rollers, dampening rollers and printing plates in all application equipment.	Extend exemption six months for the cleaning of metering rollers, dampening rollers and printing plates in UV/EB ink application equipment to 6/30/08.	Extend exemption one year for the cleaning of metering rollers, dampening rollers and printing plates in UV/EB ink application equipment to 12/31/09.	Extend exemption one year for the cleaning of metering rollers, dampening rollers and printing plates in all application equipment to 12/31/08.

TABLE 5-2

VOC Content Limits and Compliance Deadlines of PAR 1171 and Project Alternatives

Affected Solvent Cleaning Activity	**Current Limit** (g/l)	**Alternative A** (No Project)		**Proposed Amended Rule 1171**		**Alternative B** (Six-Month Delay in Final Compliance Deadlines)		**Alternative C** (Two-Year Delay in Final Compliance Deadlines)		**Alternative D** (Delay Final Compliance Deadlines for 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	1/01/08	100	1/01/09	100	7/01/08	100	1/01/10	100	1/01/09
On-Press Cleaning of Screens	500	100	1/01/08	100	1/01/09	100	7/01/08	100	1/01/10	100	1/01/09
Screen Printing Applications (except On-Press Cleaning)	500	100	1/01/08	100	1/01/08	100	1/01/08	100	1/01/08	100	1/01/09
Metering Rollers, Dampening Rollers, and Printing Plates in UV/EB Ink Application Equip.	800	100	1/01/08	100	1/01/09	100	7/01/08	100	1/01/10	100	1/01/09
Metering Rollers, Dampening Rollers, and Printing Plates in All Application Equipment (except UV/EB)	800	100	1/01/08	100	1/01/08	100	1/01/08	100	1/01/08	100	1/01/09

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 a feasible project alternative 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 rule. Replacement cleaning solvents are generally less toxic than conventional cleaning solvents. The No Project alternative (Alternative A) is expected to achieve air quality benefits (e.g., VOC reductions) sooner than PAR 1171, because there would be no delays in anticipated VOC emission reductions. Thus, the Alternative A is considered the least toxic alternative.

Alternative A - No Project

Alternative A assumes that the proposed amendments to Rule 1171 will not be adopted. Existing Rule 1171 would remain in effect with no modifications. While the goals of the 2007 AQMP (i.e., VOC emission reductions) would occur by the date originally anticipated under previous amendments to Rule 1171. Uncertainty with regard to the availability of compliant cleaning solvents for specified applications could result in some cleaning operations ceasing to occur. Alternatively, operators of affected facilities could apply for a variance, which could also lead to delayed VOC emission reductions if compliant products are not available.

Alternative B – Six-Month Delay in Final Compliance Deadlines

Alternative B would extend the final compliance deadlines for the final VOC content limits by six months, to July 1, 2008, for UV/EB ink application equipment and on-press cleaning of screens in screen printing (a subset of the existing screen printing solvent cleaning activity). Alternative B would also extend the existing exemption from provisions of the rule for the cleaning of metering rollers, dampening rollers and printing plates applications in UV/EB ink application equipment only by six months, to June 30, 2008. The exemption extension is limited to six months provided the clean up solvents used for the specified cleaning operations do not exceed the current VOC content limit of 800 g/l.

Alternative C – Two-Year Delay in Final Compliance Deadlines

Alternative C would extend the final compliance deadlines for the final VOC content limits by two years, to January 1, 2010, for UV/EB ink application equipment and on-press cleaning of screens in screen printing (a subset of the existing screen printing

solvent cleaning activity). Alternative C would also extend the existing exemption from provisions of the rule for the cleaning of metering rollers, dampening rollers and printing plates applications in UV/EB ink application equipment only by two year, to December 31, 2009. The exemption extension is limited to two years provided the clean up solvents used for the specified cleaning operations do not exceed the current VOC content limit of 800 g/l.

Alternative D – Delay Final Compliance Deadlines for More Solvent Cleaning Activities

Alternative D would extend the final compliance deadlines for the final VOC content limits by one year, to January 1, 2009, for UV/EB ink application equipment and for all screen printing activity (including on-press cleaning of screens). Further, the proposed exemption extension for the cleaning of metering rollers, dampening rollers and printing plates from provisions of the rule would not be just for UV/EB ink application equipment but rather for all application equipment. The exemption would be extended one year to January 1, 2009.

COMPARISON OF THE ALTERNATIVES

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

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 proposed amendments to Rule 1171 will not be adopted and the existing Rule 1171 would remain in effect with no modifications. As noted in Chapter 3 – Existing Setting, compliance with all existing requirements on January 1, 2008 would generate approximately 5,020 pounds per day of anticipated VOC emissions reductions from solvent cleaning operations, which would assist in attaining the goals of the 2007 AQMP to meet federal and state ozone standards. However, UV/EB ink application equipment and on-press cleaning of screens operations may have to cease

operations. Alternatively, to continue operations, operators of affected facilities would have to apply for a variance if compliant cleaning solvents are unavailable.

Alternative B – Six-Month Delay in Final Compliance Deadlines

Compared to the proposed project, Alternative B would extend the final VOC content limits requirement for only six months, July 1, 2008, for UV/EB ink equipment applications, on-press cleaning of screens and extend an existing exemption. While the delay of VOC emissions of 340 pounds per day is not different from the proposed project on a daily basis, the delay in achieving the reductions would occur for a shorter period of time compared to PAR 1171.

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 for Alternative B are expected to be the same as for PAR 1171. 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. Compared to the proposed project, Alternative B would delay the final compliance date by six months rather than one year. As a result, potential exposure to high VOC solvents that are potentially more toxic than compliant solvents would occur for a shorter period of time. 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

Compared to the proposed project, Alternative C would extend the final VOC content limits requirement for two years, to January 1, 2010, for UV/EB ink equipment applications, on-press cleaning of screens and extend an existing exemption. While the delay of VOC emissions of 340 pounds per day is not different from the proposed project on a daily basis, the additional time to achieve the reductions will result in delayed VOC emissions reductions for a longer period of time compared to PAR 1171. However, as of Janaury 1, 2010, Alternative C would ultimately achieve similar VOC emission reductions as PAR 1171. Similarly, exposure to potentially toxic high VOC cleaning solvents would occur for a longer period of time compared to PAR 1171. As is the case for PAR 1171, 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 – Delay Final Compliance Deadlines for More Solvent Cleaning Activities

Alternative D would provide the same additional one-year compliance date extension as the proposed project, however, it would extend the final compliance date to cleaning products used in a wider variety of solvent cleaning activities, which would otherwise be required to comply with lower VOC content limit on January 1, 2008. Alternative D applies to the same UV/EB ink application equipment universe as the proposed project, however, instead of delaying the final compliance date only for on-press cleaning of screens and metering rollers, dampening rollers and printing plates in UV/EB ink application equipment, Alternative D woiuld provide a one-year extension of the final compliance date for cleaning solvents used in all screen printing activity and all application equipment operating metering rollers, dampening rollers and printing plates. Screen printing activity includes both screen reclamation and on-press cleaning of screens in screen printing equipment. 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. Another process where solvents are used to remove inks is in reclamation 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.

Because of the expanded applicabilility, Alternative D would result in a delay of 1,470 pounds of VOC per day of anticipated emission reductions until January 1, 2009. Alternative D would generate the greater emission reduction foregone than the proposed project. Similarly, there would be more exposure to potentially toxic high VOC cleaning solvents. Like the proposed project, this would not be considered a significant adverse impact because it extends the existing exposure scenario, although to a wider category of solvent cleaning activities.

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. While the No Project alternative (Alternative A) and Alternative B are expected to achieve air quality benefits (e.g., VOC reductions) sooner than PAR 1171, Alternative A would achieve anticipated VOC emission reductions as scheduled, although some types of cleaning operations might have to cease operations due to the possibility of compliant products being unavailable. Therefore, of the remaining alternatives, Alternative B is considered the environmentally superior alternative because it would produce emission reductions forgone for a shorter time period than PAR 1171 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 VOC emission reductions foregone. However, the affected industry

has raised concerns whether Alternative B would allow the necessary time for testing to identify compliant cleaning products.

Emission Reductions from PAR 1171 and Alternatives

Table 5-3 highlights the estimated emission reductions and, thus, delay in emission reductions, from PAR 1171 and each project alternative.

TABLE 5-3

Comparison of Delay in Emission Reductions from PAR 1171 and Project Alternatives

	UV/EB Ink Application Equipment[1] (pounds per day)	**Screen Printing** (pounds per day)	**Rollers in All Application Equipment** (pounds per day)	**TOTAL DELAY in Emission Reductions** (pounds per day)	**Delay will Last Until Final Compliance Date**	**SCAQMD VOC Daily Significance Threshold** (pounds per day)	**Significant ?**
Proposed Project	220	120	n/a	**340**	1/01/09	55	Yes
Alternative A	0	0	0	**0**[2]	1/01/08	55	No
Alternative B	220	120	n/a	**340**	7/01/08	55	Yes
Alternative C	220	120	n/a	**340**	1/01/10	55	Yes
Alternative D	220	1140	110	**1470**	1/01/09	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.
2. Assumes no variances granted to continue using high VOC cleaning solvents.

TABLE 5-4

Comparison of Adverse Environmental Impacts of PAR 1171 to the Alternatives

Environmental Topic	**Proposed Project**	**Alternative A** (No Project)	**Alternative B** (Six-Month Delay in Final Compliance Deadlines)	**Alternative C** (Two-Year Delay in Final Compliance Deadlines)	**Alternative D** (Delay Final Compliance Deadlines for More Solvent Cleaning Activities)
Air Quality – Criteria Pollutants (VOCs)	Significant (340 pounds delay in VOC emission reductions for one year)	Not Significant (5,020 pounds of VOC emission reductions by 1/01/08)	More significant than PAR 1171 (340 pounds per day delay in VOC emission reductions for six months)	More significant than PAR 1171 (340 pounds per day delay in VOC emission reductions for two years)	More significant than PAR 1171 (1,470 pounds per day delay in VOC emission reductions for one year)
Non-Criteria Pollutants (TACs)	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant

TABLE 5-5

Ranking of Alternatives

Proposed Project and Alternatives	**Air Quality Impacts**		
	Criteria Pollutants	Non-Criteria Pollutants	Cumulative
PAR 1171	***x (3)***	***✓(3)***	✓
Alternative A	***✓(1)***	***✓(1)***	✓
Alternative B	***x (2)***	***✓(2)***	✓
Alternative C	***x (4)***	***✓(4)***	✓
Alternative D	***x (5)***	***✓(5)***	✓

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 and 5-2 describe the alternatives considered by the SCAQMD and how they compare to PAR 1171. Table 5-3 shows how the alternatives compare to the proposed project relative to generating significant adverse air quality impacts. Table 5-4 presented a matrix that lists the significant adverse impacts associated with the proposed project and the project alternatives for the only affected environmental topic analyzed. The table also 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.

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 Final ~~Draft~~ SEA identified air quality as the only environmental area with significant impacts as a result of the proposed project.

The delay in emission reductions is temporary and, after January 1, 2009, an overall 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 PAR 1171 will not, by itself, 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.

APPENDIX A

PROPOSED AMENDED RULE 1171

In order to save space and avoid repetition, please refer to the latest version of the PAR 1171 located elsewhere in the final rule package. The PAR 1171 version (dated November 9, 2007) of the proposed amended rule circulated with the Draft SEA released on November 21, 2007 for a 45-day public review and comment period ending January 4, 2008 has 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 PAR 1171 version (dated November 9, 2007) of the proposed amended rule 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.

APPENDIX B

COMMENTS ON THE DRAFT SEA AND RESPONSES TO THE COMMENTS

STATE OF CALIFORNIA — Arnold Schwarzenegger, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION
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(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net

December 21, 2007

Mr. Michael Krause, Air Quality Specialist
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Drive
Diamond Bar, CA 91765-4182

Re: SCH#2007111098; CEQA Notice of Completion of Draft Subsequent Environmental Assessment (SEA)) for Proposed Amendments to Rule 1171 – Solvent Cleaning Operations; four counties: Orange, and non desert portions of Los Angeles, Riverside and San Bernardino counties, California

Dear Mr. Krause:

1-1 The Native American Heritage Commission is the state agency designated to protect California's Native American Cultural Resources. The California Environmental Quality Act (CEQA) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per CEQA guidelines § 15064.5(b)(c). In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE)', and if so, to mitigate that effect. To adequately assess the project-related impacts on historical resources, the Commission recommends the following action:

1-2 √ Contact the appropriate California Historic Resources Information Center (CHRIS). Contact information for the Information Center nearest you is available from the State Office of Historic Preservation (916/653-7278)/ http://www.ohp.parks.ca.gov/1068/files/IC%20Roster.pdf The record search will determine:
- If a part or the entire APE has been previously surveyed for cultural resources.
- If any known cultural resources have already been recorded in or adjacent to the APE.
- If the probability is low, moderate, or high that cultural resources are located in the APE.
- If a survey is required to determine whether previously unrecorded cultural resources are present.

1-3 √ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
- The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure.
- The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.

1-4 √ Contact the Native American Heritage Commission (NAHC) for:
* A Sacred Lands File (SLF) search of the project area and information on tribal contacts in the project vicinity that may have additional cultural resource information. Please provide this office with the following citation format to assist with the Sacred Lands File search request: USGS 7.5-minute quadrangle citation with name, township, range and section; .
- The NAHC advises the use of Native American Monitors to ensure proper identification and care given cultural resources that may be discovered. The NAHC recommends that contact be made with Native American Contacts on the attached list to get their input on potential project impact (APE). In some cases, the existence of a Native American cultural resources may be known only to a local tribe(s).

1-5 √ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
- Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5 (f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
- Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.

1-6 √ Lead agencies should include provisions for discovery of Native American human remains or unmarked cemeteries in their mitigation plans.
* CEQA Guidelines, Section 15064.5(d) requires the lead agency to work with the Native Americans identified by this Commission if the initial Study identifies the presence or likely presence of Native American human remains within the APE. CEQA Guidelines provide for agreements with Native American, identified by the

1-6 Cont. NAHC, to assure the appropriate and dignified treatment of Native American human remains and any associated grave liens.

1-7 √ Health and Safety Code §7050.5, Public Resources Code §5097.98 and Sec. §15064.5 (d) of the CEQA Guidelines mandate procedures to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

1-8 √ Lead agencies should consider avoidance, as defined in § 15370 of the CEQA Guidelines, when significant cultural resources are discovered during the course of project planning and implementation

Please feel free to contact me at (916) 653-6251 if you have any questions.

Sincerely,

Dave Singleton
Program Analyst

Attachment: List of Native American Contacts

Cc: State Clearinghouse

Native American Contacts
Orange, Los Angeles, Riverside, San Bernardino Counties
December 21, 2007

Cahuilla Band of Indians
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chemehuevit@yahoo.com
(760) 858-4301
(760) 858-5400 Fax

Pechanga Band of Mission Indians
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(951) 676-2768
(951) 506-9491 Fax

Juaneno Band of Mission Indians Acjachemen Nation
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Ramona Band of Mission Indians
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This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American with regard to cultural resources for the proposed SCH#2007111098; CEQA Notice of Completion of Draft Subsequent Environmental Assessment (SEA) for Proposed Amendments to Rule 1171 - Solvent Cleaning Operations in four counties: Orange, and non-desert areas of Riverside, Los Angeles and San Bernardino, California.

Native American Contacts
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December 21, 2007

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(951) 755-5200/323-0822-cell
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Gabrielino/Tongva Council / Gabrielino Tongva Nation
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Gabrielino Band of Mission Indians of CA
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Native American Contacts
Orange, Los Angeles, Riverside, San Bernardino Counties
December 21, 2007

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Juaneno Band of Mission Indians
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Responses to Draft SEA Comment Letter #1

Native American Heritage Commission
Dave Singleton

December 21, 2007

Response 1-1

The SCAQMD is aware of the requirements of CEQA Guidelines §15064.5 as well as all other relevant CEQA requirements. As stated on page 4-10 of the Draft Subsequent Environmental Assessment (SEA) for the proposed amended Rule (PAR) 1171, potential significant adverse impacts on cultural resources are not anticipated. This conclusion is based on the fact that 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 PAR 1171 are not expected, no impacts to historical or cultural resources are anticipated to occur as a result of implementing the proposed project.

PAR 1171 is 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 PAR 1171.

Response 1-2

Operators conducting solvent cleaning operations subject to PAR 1171 are expected to conduct the solvent cleaning operations within the boundaries of existing facilities. In addition, since no construction activities are required to reformulate cleaning solvents, no subsurface activities in or surrounding the property are anticipated, which would have an effect on cultural resources or Native American remains. Solvent cleaning facilities in which the solvent cleaning operations take place could be listed in the National Register of Historic Places, California Historical Landmarks, California State Historic Resources Inventory, California Points of Historical Interest, and/or Los Angeles County Landmarks, but since the proposed project involves the reformulation of solvents, it would have no effect on the physical property or potential landmark status. Thus, the proposed project will not cause an adverse direct or indirect change in the significance of a resource listed in the California Register of Historical Resources or in a local register of historical resources.

Response 1-3

An archaeological inventory survey is not required to be performed for the proposed project. See Responses 1-1 and 1-2 for reasons why a survey was not required.

Response 1-4

As noted in Response 1-1, additional archaeological investigations are not required because the proposed project would not require construction or grading activities that could affect cultural resources, so it is not necessary to contact the Native American Heritage Commission.

Response 1-5

While lack of evidence of archeological resources does not preclude their subsurface existence, the proposed project does not require subsurface excavation activities, which would discover or otherwise adversely affect any cultural or archaeological resources, at affected solvent cleaning operations. Thus, as concluded on page 4-10 of the Draft SEA for the PAR 1171, no impacts to cultural resources were determined to result from the proposed project. As a result, no further analysis of cultural resources in the Final SEA is required.

Response 1-6

There are standard procedures for encountering any archaeological, Native American or cultural resources on-site. Compliance with all local, state and federal regulations (and notifications) will be required to take place in the event of an accidental discovery of any cultural or historic resources. However, with regard to the potential for discovery of Native American remains resulting from the proposed project, refer to Responses 1-1, 1-2 and 1-5.

As stated in Responses 1-1, 1-2 and 1-5, the proposed project does not require subsurface excavation activities, which would discover any presence of Native American human remains, at affected solvent cleaning operations. Therefore, agreements with Native Americans to assure appropriate treatment of Native American human remains are not required or warranted.

Response 1-7

As noted in Responses 1-1, 1-2 and 1-5, discovery of human remains relative to the proposed project is not likely since proposed project would not require construction or grading activities that could affect cultural resources. However, it should be noted that Public Resources Code 5097.98-99 and Health and Safety Code 7050.5 requires activities to cease to prevent further disturbance if human remains are unearthed until the County Coroner has made the necessary findings with respect to origin and disposition.

Response 1-8

CEQA Guidelines §15370(a) defines avoidance as: "Avoiding the impact altogether by not taking a certain action or parts of an action." As stated on page 4-10 of the Draft SEA, the presence or likely presence of Native American human remains was not identified as a potential significant impact. See also Responses 1-1, 1-2 and 1-5. Therefore, it is not necessary to implement avoidance measures relative to cultural resources by not taking a certain action or parts of an action.