

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Environmental Assessment:

Proposed Rule 1144 – Vanishing Oils and Rust Inhibitors

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Preface

The Draft Environmental Assessment (EA) for the Proposed Rule 1144—Vanishing Oils and Rust Inhibitors was circulated for a 30-day public review and comment period from October 14, 2008 to November 12, 2008. No comments were received during the public comment period. Subsequent to the release of the Draft EA for public comment, modifications were made to PR 1144 in response to comments by the public on proposed rule requirements. Modifications were made to the Draft EA to reflect the changes made to PR 1144 and were evaluated to determine if they would alter any conclusions in the Draft EA as explained below. Deletions and additions to the text of the Draft EA are denoted using ~~struckthrough~~ and underlined, respectively, so this document is now considered the Final EA for the proposed project. The primary changes to the proposed project since the release of the Draft EA are:

- Separation of the general 25 gram per liter of material VOC content limit into a 50 gram per liter of material VOC content limit for vanishing oils effective January 1, 2010; and a 300 gram per liter of material VOC content limit for rust inhibitors effective January 1, 2010, with a reduction to 50 grams per liter of material effective January 1, 2012.
- Exceptions were added for certain applications, including lapping, sinker electrical discharge machining, rust inhibitors and vanishing oils applied to avionics, assembled aircraft; and space vehicle components. Rust inhibitors subject to a military specification, military standard or Product Part Approval Process are exempt from VOC content requirements until January 1, 2011.
- Minor clarifications were made to the applicability, definitions, prohibition of sale, recordkeeping requirements and test methods and procedures.

Although the modifications to PR 1144 would delay some originally-anticipated VOC emission reductions for a subset of affected fluids, overall the modifications would produce slightly less VOC emission reductions than was originally anticipated (2.71 versus 3.08 tons per day). Further, the modifications to the proposed rule would slightly reduce adverse environmental impacts from the rule, since the proposed project's adverse environmental impacts presented in the Draft EA would be caused by secondary effects. For example, by extending the effective dates for VOC content limits, construction would occur over a longer time period; therefore, reducing the likelihood of overlapping construction at multiple facilities. Increases in the allowable VOC content limits compared to the limits in the originally proposed rule would reduce the number of facilities that would have to make product replacement or reformulation changes, and potentially reduce the number of facilities that would be required to install additional cleaning processes.

Since the version of PR 1144 that circulated with the Draft EA would have potentially slightly greater, but not significant, adverse environmental impacts than the current version of PR 1144, the version circulated in the Draft EA is considered to be a slightly more conservative analysis. Therefore, no changes have been made to the environmental analysis. Because none of the changes to PR 1144 alter the objective or the conclusions of the proposed project that were stated in the Draft EA, recirculation is not necessary since the proposed project revisions do not result in new avoidable significant effects (CEQA Guidelines §15073.5).

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CHAPTER 1 - PROJECT DESCRIPTION

Introduction

California Environmental Quality Act

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Emissions Inventory

Compliance Options

INTRODUCTION

The California Legislature created the South Coast Air Quality Management District (SCAQMD) in 1977¹ as the agency responsible for developing and enforcing air pollution control rules and regulations in the South Coast Air Basin (Basin) and portions of the Salton Sea Air Basin and Mojave Desert Air Basin (collectively known as the “district”). By statute, the SCAQMD is required to adopt an air quality management plan (AQMP) demonstrating attainment of all federal and state ambient air quality standards for the district². Furthermore, the SCAQMD must adopt rules and regulations that carry out the AQMP³. The 2007 AQMP concluded that major reductions in emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NOx) are necessary to attain the state and national ambient air quality standards for ozone, particulate matter with an aerodynamic diameter of 10 microns or less (PM10) and particulate matter with an aerodynamic diameter of 2.5 microns or less (PM2.5). Ozone, a criteria pollutant, is formed when VOCs react with NOx in the atmosphere and has been shown to adversely affect human health. VOC emissions also contribute to the formation of PM10 and PM2.5. The federal one-hour and eight-hour ozone standards were exceeded in all four counties and in the Salton Sea Air Basin in 2007. The Central San Bernardino Mountain area recorded the greatest number of exceedences of the one-hour state standard (67 days), eight-hour state standard (115 days), eight-hour federal standard (59 days), as well as, health advisory days (four days). Altogether, in 2007, the South Coast Air Basin exceeded the federal eight-hour standard on 79 days, the state one-hour standard on 96 days, and the state eight-hour standard on 128 days.

~~Lubricants~~ Vanishing oils and rust inhibitors are categorized under miscellaneous solvent operations. They are currently subject to Rule 442 - Usage of Solvents, which addresses VOC emissions from VOC-containing materials that are not subject to VOC limits in any Regulation XI rule. Although the California Air Resources Board (CARB) regulates consumer lubricants, currently there are no local, state, or federal regulations or emissions restrictions specifically concerned with industrial ~~lubricants~~ vanishing oils and rust inhibitors. The exception being solid film lubricants, dry lubricative materials and barrier coatings subject to Rule 1124 - Aerospace Assembly and Component Manufacturing Operations.

Proposed rule (PR) 1144 would apply to VOC emissions from ~~lubricants~~, vanishing oils and rust inhibitors used in ~~manufacturing and industrial facilities during the manufacture and assembly operations at metal working facilities process of parts and products~~ (steel tube and spring manufacturers, steel mills, aerospace manufacturers, automobile part manufacturers and rebuilders and machine shops, including broaching, drilling, drawing, forming, heading, honing, forging, milling, stamping, tapping, threading and turning operations). ~~Lubricants~~ Vanishing oils are direct contact fluids used to reduce heat and friction to prolong the life of tools and machinery, improve product quality and carry away debris. Rust inhibitors protect or prevent metal surfaces from corrosion.

¹ The Lewis-Presley Air Quality Management Act, 1976 Cal. Stats., ch 324 (codified at Health & Safety Code, §§40400-40540).

² Health & Safety Code, §40460 (a).

³ Health & Safety Code, §40440 (a).

Staff proposes the following requirements for Rule 1144:

- Establish a VOC content limit of ~~25-50~~ grams per liter of material for the use of ~~lubricants and rust inhibitors~~ vanishing oils; and a VOC content limit of 300 grams per liter of material for rust inhibitors effective January 1, 2010, with a further reduction to 50 grams per liter effective January 1, 2012.
- Prohibit the sale of non-compliant ~~lubricants~~ vanishing oils and rust inhibitors, except those subject to CARB consumer products regulation found in Title 17 of the California Code of Regulations, beginning at Section 94507.
- Allow ~~lubricants~~ vanishing oils and rust inhibitors manufactured prior to the appropriate effective date to be sold or applied for six months after that date ~~January 1, 2010, to be sold or applied until July 1, 2010.~~
- Require containers for ~~lubricants~~ vanishing oils and rust inhibitors to display the date of manufacture ~~and VOC content as supplied and after recommended dilution.~~
- Exempt certain applications, including lapping, sinker electrical discharge machining (EDM), and high profile aircraft corrosion inhibitors and aerosol aerospace rust inhibitors where alternative low-VOC formulations are not available. Exempt rust inhibitors subject to a military specification, military standard or Product Part Approval Process (PPAP) until January 1, 2011.

If approved, the proposed rule would ~~fully~~ partially implement 2007 Air Quality Management Plan (AQMP) control measure CTS-01. The resolution to the rule would include the requirement that a technology review be completed by September 2009 to resolve technical issues with the VOC content test method, evaluate potential screening tools for high water content samples, and develop VOC limits for other direct-contact lubricants and metal working fluids besides vanishing oils. The proposed rule would reduce emissions by ~~3.08~~ 2.71 tons per day.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

Proposed Rule (PR) 1144 is a discretionary action, which has potential for resulting in direct or indirect change to the environment and, therefore, is considered a “project” as defined by the California Environmental Quality Act (CEQA). SCAQMD is the lead agency for the proposed project and has prepared this draft environmental assessment (EA) with no significant adverse impacts pursuant to its Certified Regulatory Program and SCAQMD Rule 1110. 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 or negative declaration once the Secretary of the Resources Agency has certified the regulatory program. SCAQMD's regulatory program was certified by the Secretary of the Resources Agency on March 1, 1989, and is codified as SCAQMD Rule 110.

CEQA and Rule 110 require that potential adverse environmental impacts of proposed projects be evaluated and that feasible methods to reduce or avoid significant adverse environmental impacts of these projects be identified. To fulfill the purpose and intent of CEQA, the SCAQMD has prepared this draft EA to address the potential adverse environmental impacts associated with the proposed project. The draft EA is a public disclosure document 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.

SCAQMD's review of the proposed project shows that the proposed project would not have a significant adverse effect on the environment. Therefore, pursuant to CEQA Guidelines §15252, no alternatives or mitigation measures are required to be included in this draft EA. The analysis in Chapter 2 supports the conclusion of no significant adverse environmental impacts.

The Draft EA was circulated for a 30-day public comment period from October 14, 2008 to November 12, 2008. No comments were received on the Draft EA.

PROJECT LOCATION

PR 1144 would affect manufacturing and assembly operations at industrial metal working facilities located throughout the SCAQMD's jurisdiction. The SCAQMD has jurisdiction over an area of 10,473 square miles, 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 district, 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 non-desert 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 non-attainment 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 1-1).

PROJECT OBJECTIVE

The objective of PR 1144 is to partially implement the 2007 AQMP control measure CTS-01 – Emission Reductions from Lubricants and reduce VOC emissions from the use of lubricants vanishing oils and rust inhibitors.

PROJECT BACKGROUND

Nationally, some 1.2 million workers are employed in machine finishing, machine tooling, and other metalworking and metal-forming operations who use lubricants, metal working fluids or rust inhibitors. In its Fabricated Metal Sector Notebook (1995), the US Environmental Protection Agency (EPA) estimates 10.2 percent of the fabricated metal industry is located in California. According to listings in the California Manufacturers Register, the Basin accounts for approximately 70 percent of the industry in California. In 2002, there were more than 7,200 machine shops in the four-county area jurisdiction of the SCAQMD. Of these machine shops, the US Census (2002) estimates that 88 percent have fewer than twenty employees. Typical industries using lubricants vanishing oils and rust inhibitors include:

- Aerospace
- Machine Shop (Job Shop)
- Steel Mills
- Auto Rebuild

- Screw Machine
- Steel Tubes (Pipes)
- Steel Springs
- Maintenance
- Captive



Figure 1-1
Boundaries of the South Coast Air Quality Management District

Captive machine shops are machine shops located inside of another type of business (aerospace, automotive, etc.) that support the business, but are not the primary aspect of that business.

As small businesses that generally do not use paints, coatings, inks or adhesives and routinely use very low VOC content cleaning solvents, metal working shops have limited interaction with SCAQMD. Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II, exempts machining equipment that use lubricants vanishing oils and rust inhibitors with VOC contents less than 50 grams per liter or a VOC composite partial pressure of 20 millimeters of mercury. Nearly all lubricants, metal working fluids and rust inhibitors, including those with a high-VOC content, have a VOC composite vapor pressure of five millimeters of mercury or less. Thus, metal working shops rarely have permits with the SCAQMD. Lubricants, also known as metal working fluids, are used to reduce heat and friction to prolong the life of the tool, to improve product quality, and carry away debris. Rust Inhibitors are inhibitors, preventatives or protectants used to prevent the corrosion of metal substrates. Typical operations include:

- Broaching – Keyway (grooves in gears for keys), slots or spline (ridges on a shaft, parallel to its axis and fitting inside corresponding grooves in the hub of a gear) utilized in gear manufacturing.
- Drilling – Producing cylindrical holes.
- Drawing - Forming flat sheet metal into “cup-shaped” parts. If the depth of the formed cup is equal to or greater than the radius of the cup, the process is called deep drawing.
- Forming – Spinning metal until a desired thickness is achieved.
- Forging – Shaping metal by using localized compressive forces. Cold forging is done at room temperature or near room temperature. Hot forging is done at a high temperature, which makes metal easier to shape and less likely to fracture. Common forging processes include: roll forging, swaging, cogging, open-die forging, impression-die forging, press forging, automatic hot forging and upsetting.
- Grinding – Producing a fine finish using an abrasive wheel or belt.
- Heading – A metal forging process which involves rapidly punching a blank into a die to form a desired shape without adding heat. Cold heading is most frequently used to produce fasteners such as bolts and screws without adding heat.
- Honing - Manufacture of precision bores to improve the geometry, surface finish and dimensional control of the finished part.
- ~~Forging – Shaping metal by using localized compressive forces. Cold forging is done at room temperature or near room temperature. Hot forging is done at a high temperature, which makes metal easier to shape and less likely to fracture. Common forging processes include: roll forging, swaging (tooling using a die, or stamp), cogging (tooling to create cogs in a wheel), open-die forging, impression-die forging, press forging, automatic hot forging and upsetting (increasing the diameter of parts by compressing its length).~~
- Milling – A precisely controlled rotating cutter which rotates about the spindle axis and a table to which the workpiece is affixed. The cutter and workpiece move relative to each other, generating a toolpath along which material is removed.
- Rust Preventative/Inhibitor – Preventing corrosion on ferrous materials and some nonferrous materials
- ~~Stamping – A process by which sheet metal strips are punched using a press tool which is loaded on a press to form the sheet into a desired shape.~~
- Tapping – Creating threaded holes in parts or boring into parts and pipelines.
- Threading - Thread cutting and thread rolling applications for pipes and bolts.
- Turning - Operation that produces cylindrical parts.
- Wire drawing - Reducing or changing the diameter of a wire or rod by pulling the wire or rod through a single or series of drawing die(s).

Lubricants, metal working fluids and rust inhibitors are complex mixtures of oils, emulsifiers, anti-weld agents, corrosion inhibitors, extreme pressure additives, buffers (alkaline reserve), biocides, and other additives. Some products are comprised of extreme pressure (EP) additives containing chlorinated, sulfurized, or phosphorus-type extreme pressure ingredients. There are numerous formulations, ranging from straight oils (such as petroleum oils) to water-based fluids, which include soluble oils and semi-synthetic/synthetic fluids. In general, higher oil content provides better lubricity while higher water content allows more rapid cooling.

- **Straight oil (neat oil) metal working fluids** are refined petroleum or vegetable oils. Straight oils are not designed to be diluted with water.
- **Soluble oil (emulsifiable oil) metal working fluids** are combinations of 30 percent to 85 percent straight oils and emulsifiers that may include other performance additives. Soluble oils are typically diluted with five to 40 parts water.
- **Semi-synthetic metal working fluids** contain a lower amount of straight oil in the concentrate (five percent to 30 percent), more emulsifiers, and 30 percent to 50 percent water. The concentrate can be further diluted with 10 to 40 parts water.
- **Synthetic metal working fluids** contain no petroleum oils and may be water soluble or water dispersible. The synthetic concentrate is typically diluted with 10 to 40 parts water.

PROJECT DESCRIPTION

The following summarizes requirements of the proposed rule. A copy of PR 1144 is included in Appendix A.

Purpose and Applicability

The purpose of the proposed rule is to reduce VOC emissions from ~~lubricant~~ vanishing oils and rust inhibitor use at ~~commercial, institutional and~~ industrial facilities during manufacturing and assembly operations. Such operations would include metal working or metal removal activities during the manufacturing and assembly of products and goods. Examples of these activities include, but are not limited to, broaching, drilling, drawing, heading, honing, forging, milling, stamping, tapping, threading, turning and wire drawing. Likewise, fluids used for rust and corrosion prevention and inhibition during manufacturing and assembly of products and goods would be subject to this proposed rule.

Definitions of Terms

The definitions of grams of VOC per liter of material, lubricant, vanishing oil and rust inhibitor are provided. Definitions for exempt compound and volatile organic compound reference Rule 102.

Requirements

The proposed rule would establish a VOC content limit of ~~25-50~~ grams per liter of material effective January 1, 2010 for vanishing oils ~~lubricants and rust inhibitors~~. A VOC content limit of 300 grams per liter of material for rust inhibitors effective January 1, 2010 with a further reduction to 50 grams per liter effective January 1, 3012. The VOC content limit applies to the ~~lubricants~~ fluids as they are used, including dilution. Water or exempt solvents are not removed when calculating VOC content.

PR 1144 includes a prohibition of sale requirement that would restrict the sale or distribution of ~~lubricants~~ vanishing oils or rust inhibitors that do not comply with the VOC limits set forth in the proposed rule. The sale prohibition would not apply to any manufacturer of ~~lubricants~~ vanishing oils or rust inhibitors who sells that product to an independent distributor that was informed in writing by the manufacturer about the compliance status of the product with PR 1144. However, independent distributors would be subject to the prohibition of sale.

PR 1144 includes a use and sell-through provision that would allow products manufactured before the effective date of the rule to be sold and used for up to six months after the rule's effective date. This provision will allow manufacturers, distributors and users to deplete their existing inventories. To facilitate this provision, manufacturers and distributors will be required to display a manufacture date or date code on the container.

The proposed rule would allow the use of high VOC ~~lubricants~~ vanishing oils and rust inhibitors where the emissions are vented to a control device that has an capture efficiency of 90 percent or more on a mass basis and a control efficiency of 95 percent or more on a mass basis or the control device has an output that would be no more than five parts per million (ppm) VOC by volume calculated as carbon with no dilution.

Recordkeeping Requirements

The proposed rule would require that records be kept pursuant to Rule 109. PR 1144 would require that ~~lubricants~~ vanishing oils and rust inhibitors used at affected facilities contain 50 grams of VOC per liter of material or less. ~~Lubricants~~ vanishing oils and rust inhibitors that contain 50 grams of VOC per liter of material or less would be considered super compliant materials pursuant to Rule 109. Rule 109 does not apply to super compliant materials at a facility which can demonstrate that the total permitted and non-permitted facility VOC emissions, including emissions from the super compliant material, do not exceed four tons in any calendar year as shown by annual VOC records. Facility operators with more than four tons of VOC annual emissions may qualify for the monthly recordkeeping option.

Operators who use an emission control system to comply with the proposed rule would be required to keep daily records of key system parameters. Manufactures that utilize the exclusion from the prohibition of sale would be required to maintain notification letters for five years.

Test Methods and Procedures

VOC content would be determined by U.S. EPA Reference Method 24 (Method 24), with the exempt solvent content determined by SCAQMD Method 303 (Determination of Exempt Compounds). In the alternative, VOC content testing could be done by SCAQMD Method 304 (Determination of Volatile Organic Compounds (VOCs) in Various Materials). ~~VOC content would be established by Draft SCAQMD Method 313L — Determination of Volatile Organic Compounds by Gas Chromatography/Flame Ionization Detector. — Flash point would be determined by ASTM D93-07 Standard Test Methods for Flash Point by Pensky-Martins Closed Cup Tester.~~ Efficiency of emission control systems would be determined by a permanent total enclosure as defined by US EPA Method 204 – Criteria for and Verification of a Permanent or Temporary Total Enclosure. Alternatively, if US EPA Method 204 is not employed, capture efficiency would be determined using a minimum of three sampling runs subject to data quality criteria presented in the US EPA Guidelines for Determination of Capture Efficiency, January 9, 1995. Individual capture runs subject to US EPA technical guidelines must be determined by the temporary total enclosure approach of US EPA method 204 to 204F or by SCAQMD Protocol for Determination of Volatile Organic Compounds Capture Efficiency.

The efficiency of the control device and the VOC content measured and calculated as carbon in the control device exhaust gas would be determined by US EPA Method 18, or CARB Method

422, US EPA Test Methods 25, 25A, SCAQMD Method 25.1 or SCAQMD Method 25.3 as applicable.

An equation for determining overall efficiency of the emission control system is provided in the proposed rule.

Exemptions

Prohibition of sale requirements would not apply to ~~lubricants~~ vanishing oils and rust inhibitors subject to ARB’s consumer product regulation, Title 17 of the California Code of Regulations, beginning at Section 94507. The VOC content limits would not apply to vanishing oils and rust inhibitors subject to the ARB’s consumer product regulation until January 1, 2011.

Provisions of the proposed rule would not apply to ~~lubricants~~ vanishing oils and rust inhibitors sold in the district for shipment outside of the district or for shipment to other manufacturers for repackaging.

Provisions of the proposed rule would not apply to ~~lubricants~~ vanishing oils and rust inhibitors subject to VOC limits in other Regulation XI rules.

The VOC content, prohibition of sale and sell-through provisions of the proposed rule would not apply to: lapping operations; sinker EDM operations; rust inhibitors applied to avionics and assembled air craft; space vehicle components; fluids where emissions are controlled pursuant to the control device option of PR 1144; and, until January 1, 2011, rust inhibitors used in association with military specification, military standard, Department of Defense document or PPAP.

EMISSIONS INVENTORY

The overall national inventory of metal working fluids was taken from the International Lubricant Manufacturers Association (2003). It indicates that 117 million gallons were sold nationwide (see Table 1-1).

**Table 1-1
National Sales**

Metalworking Fluid Type	Amount Sold, millions of gallons/year
Straight	27.3
Soluble	49.3
Semi-Synthetic	21.7
Synthetic	18.9
Total	117.2

US EPA estimates that 10.2 percent of the fabricated metal industry are located in California in its Fabricated Metal Sector Notebook (1995). According to listings in the California Manufacturers Register, the Basin accounts for approximately 70 percent of the industry in

California. This would indicate that 8.3 million gallons of metal working fluids were sold in the Basin.

Table 1-2
Ratio of National Sales to California and Basin Sales

Metalworking Fluid	Amount Sold Nationwide, millions of gallons/year	Amount Sold in California, millions of gallons/year	Amount Sold in Basin, millions of gallons/year
Straight	27.3	2.8	2.0
Soluble	49.3	5.0	3.5
Semi-Synthetic	21.7	2.2	1.5
Synthetic	18.9	1.9	1.3
Total	117.2	11.9	8.3

To supplement these estimates, in 2006 SCAQMD staff conducted a survey of local metal working fluid manufacturers, distributors and users. The survey data indicated that those local manufacturers and distributors annually sold ~~3.7-4.2~~ million gallons of industrial lubricants, metal working fluid, and ~~458 thousand gallons of~~ vanishing oils, rust preventatives and solvents in the Basin (Table 1-3). Presumably, the solvents are used as vanishing oils, rust preventatives, for thinning other metal working fluids or cleaning.

Table 1-3
Volume of Metal Working Fluids Surveyed

Metal Working Fluid Type	Volume Surveyed, thousand gallons
<u>General Metal Working Fluid</u> <u>Lubricants and Metal Working Fluids</u>	<u>3,742-2,565</u>
<u>Light Oil</u>	<u>49</u>
<u>100 SUS Naphthenic Oil</u>	<u>1,119</u>
Vanishing Oil	64.1
Rust Inhibitors	156
Solvent	238
Total	<u>4,200-4,191</u>

Approximately 30 percent or 71,000 gallons of the 238,000 gallons of solvents reported in the survey are used for cleaning applications subject to Rule 1124 and, therefore, were not included in the VOC emission inventory for this rule making activity. The revised inventory of the volume of liquids subject to PR 1144 is shown in Table 1-4.

Table 1-4
Applicable Volume of Metal Working Fluids

Metal Working Fluid Type	Applicable Volume Surveyed, thousand gallons
<u>General Metal Working Fluid Lubricants and Metal Working Fluids</u>	<u>3,742-3,684</u>
<u>Light Oil</u>	<u>49</u>
Vanishing Oil	64.1
Rust Inhibitors	156
Solvent	167
Total	<u>4,129-4,120</u>

One drawback from the survey and national sales data was the lack of VOC content information on the metal working fluids. More than eighty percent of the volume surveyed listed the VOC content as “None” or not determined. Therefore, the SCAQMD sampled a broad range of products from local manufacturers and distributors and performed VOC testing to establish a more accurate emissions inventory. The sample results for vanishing oils and rust inhibitor, using Method 24, are presented in Table 1-5.

Table 1-5
**Test Results of Lubricants, Vanishing Oils and Rust Inhibitors Using EPA Method 24
SCAQMD Method 313**

Type	VOC Results Method 313	Number of Samples
Coolants	<u>28* - 210* g/l</u>	3
General Lubricants	<u><10 - 19* g/l</u>	4
Rust Preventatives		
Cleaner/Rust Preventative	<u><25 - 760 g/l</u>	2
Consumer/General	514 g/l	1
Rust Preventative	<u><10 - 560-191 g/l</u>	<u>4-2 (2 pending)</u>
Rust Preventative/Stamping	51* - 125 g/l	2
Cutting/Grinding Lubricants		
Cold heading	<u>2 g/l</u>	1
Cutting	<u><10 - 13 g/l</u>	2
Grinding	<u><10 - 146* g/l</u>	3
Machining	<u><25 - 162* g/l</u>	5
Metal Removal	12 g/l	1
Milling	70 g/l	1
Stamping (Vanishing)	<u>650 - 750 g/l</u>	<u>3-1 (2 pending)</u>
Others Pending	Pending	3

*Before dilution

SCAQMD Draft Test Method 313L was applied to 35 samples including consumer product multipurpose lubricants, synthetic water dilutable coolants, and bio based machining oils. Table 1-5 summarizes the VOC results for these various products. The complete test results are included in Appendix A Lubricant and Rust Inhibitor VOC Content Test Results of the Staff Report. All four general lubricants tested had VOC contents below 25 grams per liter. All three coolants had VOC contents below 25 grams per liter after recommended dilution. Twelve of fourteen lubricants with specified applications also had VOC contents below 25 grams per liter after recommended dilution. One milling product had a VOC content of 70 grams per liter and one stamping (vanishing oil) product had a VOC content of 750 grams per liter. Rust preventatives showed the most variability ranging from less than 10 grams per liter to over 760 grams per liter. Soluble and vegetable based rust preventatives had the lowest VOC content with two results still pending. The traditionally formulated rust preventatives had significantly higher VOC contents with one result still pending.

While some results are still pending, the completed test results indicate that most metal working fluids have a low VOC content. Excluding rust preventatives, only two of 21 products sampled had VOC contents greater than 25 gram per liter. Only one product, a vanishing oil used for stamping applications, had a VOC content greater than 100 gram per liter. Rust preventatives have the widest range of VOC content.

The sales weighted average from the survey information and the EPA Test Method 24 sample test results were used to prepare an emissions inventory. Vanishing oils reported in the survey had a sales weighted average VOC content of 710 grams per liter. Solvent based rust inhibitors had a sales weighted average VOC content of 660 grams per liter. ~~Straight solvents used in lubricant and rust inhibition operations had a sales weighted average VOC content of 790 grams per liter.~~

Using the sales weighted average VOC contents for vanishing oils, rust inhibitors and solvents, and assuming the remaining general metal working fluids have a VOC content of 25 grams per liter or less, the VOC emission inventory for all affected fluids is estimated to be ~~4.3~~3.2 tons per day (Table 1-6).

**Table 1-6
Surveyed Emission Inventory**

Metal Working Fluid Type	Volume Surveyed, thousand gallons	Sales Weighted Average VOC Content, g/l	Total VOC Emission, tons per day
General Metal Working Fluid and Lubricants	3,742-2,565	25-TBA	1.07-TBA
Light Oil	48.9	TBA	TBA
100 SUS Naphthenic Oil	1,119	TBA	TBA
Vanishing Oil	64.1	710	0.52
Rust Inhibitors	156	660	1.17
Solvent	167	790	1.50
Total	4,129-4,120	N/A	4.30-3.19

The SCAQMD survey captured just over half of the metal working fluid sales predicted and could be extended to regional and national manufacturers and distributors if necessary.

COMPLIANCE OPTIONS

SCAQMD staff believes that there are two possible compliance options for PR 1144. The first is reformulation or replacement of existing lubricants, vanishing oils and rust inhibitors. The second is the use of control technology to capture and destroy VOCs emitted from lubricants, vanishing oils and rust inhibitors.

Reformulation or Replacement of Existing Products

The proposed rule would establish a VOC content limit of ~~25-50~~ grams per liter of material for vanishing oils, lubricants effective January 1, 2010. A VOC content limit of 300 grams per liter would be established for rust inhibitors effective January 1, 2010, then reduced to 50 grams per liter effective January 1, 2012. The VOC content limit applies to the lubricants-fluids as they are used, including dilution. Water or exempt solvents are not removed when calculating VOC content. Thus a lubricants-fluid concentrate with a VOC content of 75 grams per liter that is diluted with water at a ratio of two parts water to one part lubricants-fluid concentrate (2:1) would have a VOC content of 25 grams per liter. Many of soluble, semisynthetic and synthetic metal working fluids (lubricants) are heavily diluted with water when used. Typical dilution ratios range from five parts water to one part metal working concentrate to 40 or more parts water to one part concentrate.

An estimated ~~90~~ 89 percent of metal working fluids have a VOC content of ~~25-200~~ grams per liter of material or less after dilution. The soluble, semi-synthetic and synthetic metal working fluid have low VOC because of the high water content of those fluids. However, many straight oils have low VOC because they are essentially non-volatile. ~~Laboratory testing showed that 19 of 21 metal working fluid samples had VOC contents that would meet the proposed limit. The results are summarized in Table 1-7.~~

**Table 1-7
Laboratory Results for Lubricants**

Type	VOC Results Method 313
Coolants	28* 210* g/L
General Lubricants	<10 19* g/L
Cutting/Grinding Lubricants	
Cold heading	2 g/L
Cutting	<10 13 g/L
Grinding	<10 146* g/L
Machining	<25 162* g/L
Milling	70 g/L
Stamping (Vanishing)	750 g/L
Other	Pending

*Before dilution

Light Oils

Light oils with viscosities lower than 20 centistokes at 40°C, but flashpoints greater than 200°F, are used as viscosity additives, lubricants for older high speed spindle machines and as metal working fluids for other applications. Newer spindle machines use heavily water-diluted products and are designed to be resistant to water corrosion while older machines are not.

Vanishing Oils

~~The products that would not meet the limit are stamping Vanishing oils~~ designed to evaporate off quickly leaving no residue, ~~otherwise known as vanishing oils~~. These vanishing oils are typically comprised primarily of solvent such as kerosene or mineral spirits and commonly are just the neat solvent themselves. Vanishing oils have VOC contents ranging from 600 grams per liter to 750 grams per liter with flash points below 200°F. Vanishing oils leave a light coating of lubricant on the part during processing and then evaporate shortly thereafter. They need to provide enough lubricity to prevent machinery and parts from seizing but provide very little protection to tooling. They are used because they evaporate and later cleaning operations are not necessary. Vanishing oils should not leave behind tacky or gummy residues. Because the parts are not cleaned afterwards, the vanishing oil must not encourage corrosion and may even provide some small amount of corrosion protection. Alternatives to high solvent content vanishing oils include water-dilutable metal working fluid and light straight oils. The water-dilutable metal working fluids for use in vanishing oil applications have sufficient rust preventative compounds to protect parts when the water evaporates. They provide sufficient lubricity but, like traditional vanishing oils, provide little tooling protection. Because they are so dilute, they evaporate leaving a dry, light protective film that is not tacky or gummy. Parts machined in this manner were found to have similar or superior corrosion protection to parts machined with conventional solvent-based vanishing oil and did not require subsequent cleaning according to an SCAQMD co-sponsored report, "Assessment, Development and Demonstration of Alternatives to VOC-

Emitting Lubricants, Vanishing Oils and Rust Inhibitors.”⁴ The high water content of the water-dilutable metal working fluid used in these applications makes them less expensive than vanishing oils.

Use of a ~~light straight~~ high flash point oil as a vanishing oil alternative could also provide acceptable results in certain situations. There would be little if any evaporation but the residue would not be tacky or gummy and corrosion protection would be excellent. Cleaning would be required however and would increase the cost to the facility.

Rust Inhibitors

Rust inhibitors, including rust preventatives and corrosion inhibitors, would ~~also be limited to a~~ VOC content of 25-300 grams per liter of material effective January 1, 2010, which would be reduced to 50 grams per liter of material effective January 1, 2012. Some facilities use rust inhibitors that are nearly identical in composition and VOC content to vanishing oils. Metal parts are coated, usually by dipping, with a formulation of solvent like mineral spirits or kerosene that may also contain small amounts of heavier oils and/or wax. The solvent evaporates away leaving behind a small amount of heavier oil, wax or trace amounts of the solvent. The remnant coats the metal surface with a water repellent or protective layer. The heavier oils and wax provide much more protection than the evaporated solvent.

Water-based rust inhibitors have very low VOC content after dilution and are formulated to leave behind a nearly invisible protective coating after the water evaporates. The protective coating is soluble in water but still protects steel, cast iron, and other ferrous parts from in-plant corrosion for up to six months. An added benefit is that the coating can be easily removed using mild aqueous cleaners if required. The water-based rust inhibitors are comparable in price to the solvent-based rust inhibitors.

Alternative ~~lower VOC~~ high flash point straight oil rust inhibitors coat the metal surface with an oil that rejects water. Over a long period of time the oil may thicken into a nearly solid protective coating. These products provide excellent long term protection and while higher cost per gallon, are superior in quality to most high VOC products. The straight oil may contain some small amounts of solvents and the VOC content of such products tested range from less than 25 grams per liter to ~~494~~ 253 grams per liter. Laboratory testing results of rust inhibitors is summarized in Table 1-~~7~~8.

⁴ Institute for Research and Technical Assistance (ITRA), Assessment, Development and Demonstration of Alternatives to VOC-Emitting Lubricants, Vanishing Oils and Rust Inhibitors, August 2006.

Table 1-78
VOC Content of Rust Inhibitors

Type	VOC Results Method 313
Cleaner/Rust Inhibitor	<25 760 121 – 765 g/L
Consumer/General	514 530 g/L
Rust Inhibitor	<10 12-420 g/L
Rust Inhibitor/Stamping	51* 125 295* - 380 g/L

*Before dilution

Assessment, Development and Demonstration of Alternatives to VOC-Emitting Lubricants, Vanishing Oils and Rust Inhibitors Report evaluated 12 companies in the Basin that use metal working fluids in the operations. Low-VOC alternatives were evaluated in 13 facilities in 15 different operations. Effective low-VOC alternatives were found in all cases. Therefore, SCAQMD staff believes that almost all affected facilities would reformulate or replace products to comply with PR 1144.

Control Technology

A provision has been added to PR 1144 that allows the use of a control devices with a capture efficient of 90 percent or more on a mass basis and a control efficiency of 95 percent on a mass basis or a maximum of five ppm VOC by volume from the exhaust to control high VOC ~~lubricants~~ vanishing oils or rust inhibitors emissions. Thermal oxidizer and/or carbon adsorption systems could be used to comply with this provision.

Thermal Oxidizers

There are three main categories of thermal oxidizers that could be used to control VOCs: afterburners with no heat recovery, thermal oxidizers with recuperative heat recovery and highly efficient regenerative heat recovery oxidizers. The following paragraphs briefly describe the three types of thermal oxidizers.

Afterburners: Afterburners are most commonly used to control intermittent and emergency releases of VOCs. Due to factors such as noise and the lack of heat recovery, (which results in high energy consumption and high NOx and CO2 emissions) their use for steady-state control of VOCs is not widespread. They are most often used for controlling intermittent releases of ethylene oxide from medical or food product sterilizers. Afterburners operate in the 1,200°F to 1,400°F range with a residence time of at least 0.3 seconds and destruction rate efficiencies of 95 to 98 percent.

Both recuperative or regenerative thermal oxidation systems generally consist of a refractory-lined chamber, one or more burners, a temperature-control system and heat-recovery equipment. Contaminated gases are collected by an industrial ventilation system and delivered to the preheater inlet, where they are heated by indirect contact with the hot oxidizer exhaust. Gases are then mixed thoroughly with the burner flame in the upstream portion of the unit, and then pass through the combustion zone where the combustion process is completed. The VOC concentrations in most industrial process vent-streams are too low for self-sustaining

combustion. Therefore, a supplemental fuel (natural gas) is required. Depending on the heat recovery efficiency, this supplemental fuel requirement may or may not translate into significant annual operating costs.

Recuperative thermal oxidizers: Recuperative thermal oxidizers recover 60 to 80 percent of the system's energy demands with a shell and tube type heat exchanger. Recuperative units operate in the 1,400°F to 1,600°F range with a residence time of at least 0.5 second and destruction rate efficiencies of 98 to 99 percent. Thermal oxidizers with recuperative heat exchangers can recover 80 to 95 percent of the energy requirement. These recuperative thermal oxidizers use a ceramic medium for heat transfer, which is stored in three or more dedicated beds that feed a central combustion chamber. Valves control which bed is being preheated by exhaust gases and which bed is transferring its heat to incoming VOC contaminated air.

Regenerative thermal oxidizers: Regenerative units operate in the 1,800°F to 2,000°F range with a residence time of at least 0.8 second and destruction rate efficiencies of 99 to 99.9 percent. Regenerative oxidizers cost more than recuperative designs of equal capacity. However, their life-cycle costs are less because annual fuel costs are less than for recuperative units.

Carbon Adsorption

Carbon absorbers consist of either disposable or refillable canisters or fixed-bed regenerative systems. If the facility utilizes canisters, a delivery service arranges to pick up the spent canisters and takes them offsite to recover the solvent or removes and replaces the spent carbon with fresh carbon. For fixed-bed regenerative systems, the carbon bed is regenerated, and the solvent is recovered onsite for re-use by the facility.

Evaluation of Compliance Options

Because low-VOC alternatives to ~~lubricants~~ vanishing oils and rust inhibitors were found to equivalent (for rust inhibitors) or less (~~lubricants~~ vanishing oils) in cost than existing non-PR 1144 compliant products, and compliant projects were found to be available for all affected operations in the Assessment, Development and Demonstration of Alternatives to VOC-Emitting Lubricants, Vanishing Oils and Rust Inhibitors Report, SCAQMD staff believes that it is unlikely that thermal oxidizers or carbon adsorption would be used rather than product reformulation or replacement to comply with PR 1144. In addition, the installation of control would generate additional costs (equipment and fuel) and emissions (combustion in thermal oxidizers or diesel emissions from carbon delivery and removal) that affected operators and/or owners are unlikely to desire.

This provision was included in PR 1144 to allow facilities that have existing control systems for compliance with other SCAQMD rules or regulations to use those same systems to comply with PR 1144.

CHAPTER 2 - ENVIRONMENTAL CHECKLIST

Introduction

General Information

Environmental Factors Potentially Affected

Determination

Environmental Checklist and Discussion

INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project's potential adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

GENERAL INFORMATION

Project Title:	Draft Environmental Assessment (EA) for Proposed Rule (PR) 1144 – Lubricants <u>Vanishing Oils</u> and Rust Inhibitors
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive Diamond Bar, CA 91765
CEQA Contact Person:	Mr. James Koizumi (909) 396-3234
PR 1144 Contact Person:	Mr. Michael Morris (909) 396-3282
Project Sponsor's Name:	South Coast Air Quality Management District
Project Sponsor's Address:	21865 Copley Drive Diamond Bar, CA 91765
General Plan Designation:	Not applicable
Zoning:	Not applicable
Description of Project:	PR 1144 would <u>partially</u> implement the 2007 Air Quality Management Plan (AQMP) control measure CTS-01 – Emission Reductions from Lubricants. PR 1144 would establish a VOC content limit of <u>50</u> 25 grams per liter of material for <u>vanishing oils; lubricants</u> and a VOC content <u>limit of 300 grams per liter for rust inhibitors</u> effective <u>January 1, 2010, which would be reduced to 50 grams per liter effective January 1, 2012; and prohibit the sale of non-compliant lubricants-vanishing oils and rust inhibitors not subject to CARB's consumer products regulation; allow lubricants-vanishing oils and rust inhibitors manufactured prior the effective VOC content dates January 1, 2010 to be sold or applied until six months after the effective date July 1, 2010; and require containers for lubricants and rust inhibitors to display the date of manufacture and VOC content as supplied and after recommended dilution.</u>
Surrounding Land Uses and Setting:	Not applicable
Other Public Agencies Whose Approval is Required:	Not applicable

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. As indicated by the checklist on the following pages, environmental topics marked with an "✓" may be adversely affected by the proposed project. An explanation relative to the determination of impacts can be found following the checklist for each area.

- | | | |
|--|---|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture Resources | <input checked="" type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology/Soils | <input checked="" type="checkbox"/> Hazards & Hazardous Materials | <input checked="" type="checkbox"/> Hydrology/
Water Quality |
| <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise |
| <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Solid/Hazardous Waste | <input type="checkbox"/> Transportation/
Traffic | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION

On the basis of this initial evaluation:

- I find the proposed project, in accordance with those findings made pursuant to CEQA Guideline §15252, COULD NOT have a significant effect on the environment, and that an ENVIRONMENTAL ASSESSMENT with no significant impacts will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will NOT be significant effects in this case because revisions in the project have been made by or agreed to by the project proponent. An ENVIRONMENTAL ASSESSMENT with no significant impacts will be prepared.
- I find that the proposed project MAY have a significant effect(s) on the environment, and an ENVIRONMENTAL ASSESSMENT will be prepared.
- I find that the proposed project MAY have a "potentially significant impact" on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL ASSESSMENT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL ASSESSMENT pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL ASSESSMENT, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: October 3, 2008

Signature: Steve Smith

Steve Smith, Ph.D.
Program Supervisor

ENVIRONMENTAL CHECKLIST AND DISCUSSION

As discussed in Chapter 1, the objective of PR 1144 is to implement the 2007 AQMP control measure CTS-01 – Emission Reductions from Lubricants and reduce VOC emissions from these products. PR 1144 would establish: ~~a VOC content limit of 25 grams per liter of material for lubricants and rust inhibitors effective January 1, 2010; prohibit the sale of non-compliant lubricants and rust inhibitors not subject to CARB's consumer products regulation; allow lubricants and rust inhibitors manufactured prior to January 1, 2010 to be sold or applied until July 1, 2010; and require containers for lubricants and rust inhibitors to display the date of manufacture and VOC content as supplied and after recommended dilution.~~

- A VOC content limit of 50 grams per liter of material for the use of vanishing oils and that are in direct contact with parts and products during manufacturing and assembly.
- Establish a VOC content limit of 300 grams per liter of material for rust inhibitors effective January 1, 2010 with a further reduction to 50 grams per liter effective January 1, 2012.
- The proposed project would also prohibit the sale of non-compliant vanishing oils and rust inhibitors for use in the district which, at the time of sale or manufacture, contains non-compliant VOC per liter after recommended dilution after the effective date established by PR 1144.
- The prohibition of sale would not apply to affected material sold to independent distributors or to viscosity additives. The proposed project also contains a sell-through provision that would allow affected fluids manufactured prior to the effective date of the applicable VOC limit to be sold, supplied, offered for sale or applied up to six months after the specified effective date. The prohibition of sale does not apply to products shipped outside the district or for repackaging or to vanishing oils and rust inhibitors subject to CARB consumer product regulations. The VOC content limits for vanishing oils and rust inhibitors subject to CARB consumer product regulations would not apply until January 1, 2011.
- The VOC content, prohibition of sale and sell-through provisions of the proposed rule would not apply to lapping operations; sinker EDM operations; rust inhibitors applied to avionics and assembled air craft; fluids utilizing the control device option of PR 1144; and, until January 1, 2011, rust inhibitors used in association with military specification, military standard, Department of Defense documents, or PPAP.

The proposed modifications to the proposed rule would slightly reduce adverse environmental impacts from the rule, since the proposed project's adverse environmental impacts presented in the Draft EA would be caused by secondary effects. For example, by extending the effective dates for VOC content limits, construction would occur over a longer time period; therefore, reducing the likelihood of overlapping construction at multiple facilities. Increases in the allowable VOC content limits compared to the originally-proposed rule would reduce the number of facilities that would have to make product replacement or reformulation changes, and potentially reduce the number of facilities that would be required to install additional cleaning processes.

Since the version of PR 1144 that circulated with the Draft EA would potentially have slightly greater, but not significant, adverse environmental impacts than the current version of PR 1144, the version circulated in the Draft EA is considered to be a slightly more conservative analysis. Therefore, no changes have been made to the environmental analysis, except for updating fleet year emission factors from 2008 to 2009.

New Construction or Operations

Since PR 1144 would only affect the VOC contents of ~~lubricants~~ vanishing oils and rust inhibitors, PR 1144 would not generate any new development or construction of new ~~lubricant~~ vanishing oil or rust inhibitor processes. Instead, PR 1144 is only expected to affect operations the VOC content of ~~lubricants~~ vanishing oils and rust inhibitors used at 427 existing facilities.

Existing Facilities

PR 1144 would affect the VOC contents of ~~lubricants~~ vanishing oils and rust inhibitors. Based on the 2006 survey of local metal working fluid manufacturers, distributors and users, staff estimates that there are 7,457 affected companies. Since many ~~lubricants~~ vanishing oils and rust inhibitors already meet the ~~25-gram-per-liter~~ VOC content limits of PR 1144, a subset of the operators at the 7,457 affected companies would be required to change the types of metal working fluids used. It is expected that most affected facility operators using ~~lubricants~~ vanishing oils and rust inhibitors would only need to replace high-VOC rust materials with low-VOC materials. However, it is believed that vanishing fluid ~~and/or light oil~~ operations would need additional cleaning equipment in order to use PR 1144 compliant materials.

Operators that use vanishing fluid ~~and/or light oil~~ are expected to need to purchase cleaning equipment, automated handling equipment for the cleaning equipment, cleaning solutions and pay for related additional electricity. The cleaning solutions would be alkaline with a pH range between 8 and 13. Most cleaners have a pH in around 10 to 11. The cleaning solutions contain small amounts of surfactants, builders, solvents and corrosion inhibitors. The cleaners themselves are usually non-hazardous unless they have a high pH (above 11). However, after use the cleaners contain oil, grease and trace amounts of metal that make them unsuitable for direct discharge into the sewer system and may make them aqueous hazardous wastes. Electricity would be used for the automated handling equipment, heaters and controls for the cleaning system.

SCAQMD staff estimates that approximately 352,700 gallons of water for product reformulation, 20,283 gallons of cleaning solutions, and 385,368 gallons of water for cleaning may be required annually to comply with PR 1144. In addition, it is expected that facility operators would dispose of 405,650 gallons of aqueous hazardous waste.

The new cleaning systems are expected to consist of a one 10-kilowatt automated handling machine, three 12-kilowatt heaters and a 10-kilowatt control system. At maximum power the system would operate at 56 kilowatts; however, once water in the cleaning systems are heated to operating temperature, the heaters would run intermittently to maintain a consistent temperature. Under a conservative scenario, it is anticipated that facilities may require on average an additional 24 kilowatts per facility, which would be total of 28 gigawatt-hours per year (24 kilowatts/facility x 52.5 hours/week x 52 weeks/year x 427 facilities).

PR 1144 allows the use of control devices instead of complying with the requirements of the proposed rule. However, because the cost of using reformulated or replacement ~~lubricants~~ vanishing oils and rust inhibitors is estimated to be equivalent or less than the cost of using existing non-PR 1144 compliant ~~lubricants~~ vanishing oils and rust inhibitors, SCAQMD staff does not believe that any control devices would be installed to comply with PR 1144. Based on the Assessment, Development and Demonstration of Alternatives to VOC-Emitting Lubricants, Vanishing Oils and Rust Inhibitors Report and modifications made to PR 1144 subsequent to the

release of the Draft EA, staff believes that operators can achieve compliance with PR 1144 through the use of compliant ~~lubricants~~ vanishing oils and rust inhibitors. The control equipment provision was added to allow operators that already use control devices to comply with existing rules and regulations to use the same equipment to comply with PR 1144.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
II) AESTHETICS. Would the project:			
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

The proposed project impacts on aesthetics will be considered significant if:

- The project will block views from a scenic highway or corridor.
- The project will adversely affect the visual continuity of the surrounding area.
- The impacts on light and glare will be considered significant if the project adds lighting which would add glare to residential areas or sensitive receptors.

Discussion

I.a), b), c) & d) PR 1144 would not require any new development or require modifications to buildings or other structures to comply with the proposed VOC content limits for ~~lubricants~~ vanishing oils and rust inhibitors. Any construction is expected to occur within the boundaries of 427 existing facilities within buildings on existing process lines. Since all of the affected activities occur within existing structures, there would be no change to the visual character of the existing setting at any of the 427 existing affected facilities.

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 the VOC content requirements of the proposed rule, and the proposed rule does not require night time activities at affected facilities.

Based upon these considerations, significant adverse aesthetics impacts are not anticipated and will not be further analyzed in this Draft EA. Since no significant adverse aesthetics impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
II) AGRICULTURE RESOURCES. Would the project:			
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Project-related impacts on agricultural resources will be considered significant if any of the following conditions are met:

- The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.
- The proposed project will convert prime farmland, unique farmland or farmland of statewide importance as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.
- The proposed project would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural uses.

II.a), b), & c) PR 1144 would not require any new development or require modifications to buildings or other structures to comply with the proposed VOC content limits for ~~lubricants vanishing oils~~ and rust inhibitors. Any construction is expected to occur within the boundaries of existing facilities within buildings on existing process lines. All of the affect activities occur within existing structures, so new use designations, including agricultural designations, are not expected to be altered by the proposed project. Therefore, since PR 1144 only affects operations at 427 existing facilities located in commercial or industrial areas, it is not expected to convert

any classification of farmland to non-agricultural use or conflict with zoning for agricultural use or a Williamson Act contract.

Based upon these considerations, significant agricultural resource impacts are not anticipated and will not be further analyzed in this Draft EA. Since no significant adverse agriculture resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
III. AIR QUALITY. Would the project:			
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

III.a) PR 1144 implements 2007 AQMP control measure CTS-01 – Emission Reductions from Lubricants. PR 1144 would set the VOC content limit for ~~lubricants~~ vanishing oils at 25-50 grams per liter of material by January 1, 2010. A VOC content limit for rust inhibitors of 300 grams per liter would be effective January 1, 2010, then reduced to 50 grams per liter effective January 1, 2012. Since PR 1144 would partially implement 2007 AQMP control measure CTS-01, it would not conflict with or obstruct implementation of the applicable air quality control plan.

III. b), c), and f) For a discussion of these items, refer to the following analysis.

Air Quality Significance Criteria

Attainment of the state and federal ambient air quality standards protects sensitive receptors and the public in general from the adverse effects of criteria pollutants which are known to have adverse human health effects. To determine whether or not air quality impacts from adopting and implementing the proposed amendments are significant, impacts are evaluated and compared to the criteria listed in Table 2-1. The project would be considered to have significant adverse air quality impacts if any one of the thresholds in Table 2-1 are equaled or exceeded.

Air Quality Impacts

**Table 2-1
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
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs) and Odor Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk \geq 10 in 1 million Hazard Index \geq 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality for Criteria Pollutants ^a		
NO2 1-hour average annual average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.25 ppm (state) 0.053 ppm (federal)	
PM10 24-hour average annual geometric average annual arithmetic mean	10.4 $\mu\text{g}/\text{m}^3$ (recommended for construction) ^b & 2.5 $\mu\text{g}/\text{m}^3$ (operation) 1.0 $\mu\text{g}/\text{m}^3$ 20 $\mu\text{g}/\text{m}^3$	
Sulfate 24-hour average	1 $\mu\text{g}/\text{m}^3$	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 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.

KEY: lbs/day = pounds per day ppm = parts per million $\mu\text{g}/\text{m}^3$ = microgram per cubic meter \geq greater than or equal to

Construction Emissions

All construction activities are expected to occur within the property boundaries of existing metal working facilities within existing structures. Operators are expected to need cleaning and automated handling equipment. Many facilities already have the necessary cleaning and automated handling equipment, but to be conservative it was assumed that all 427 affected facilities would need to install such equipment.

It was assumed that the additional equipment would be placed on the concrete foundation of existing structures to existing ~~lubricant~~ vanishing oil or rust inhibitor process lines. Therefore, no earthmoving or concrete pouring would be required. SCAQMD staff assumed that additional equipment would be delivered by heavy-duty diesel truck. Staff assumed that equipment could be placed using forklifts.

Since the VOC content limit would become effective on January 1, 2010, it was assumed that all 427 facilities would need to complete construction over a 12-month period. Based on this assumption it was further assumed that ~~three-two~~ facilities per day might construct cleaning and automated handling equipment. Table 2-2 presents the construction emissions from both a single facility and from ~~three-two~~ facilities undergoing construction at the same time. Detailed construction emission calculations can be found in Appendix B.

Table 2-2
Daily Criteria Construction Emissions

Description	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	SOx, lb/day	VOC, lb/day
Single Facility	7.1 <u>6.6</u>	10.1 <u>9.5</u>	0.66 <u>0.62</u>	0.65 <u>0.60</u>	0.01	1.4 <u>1.3</u>
Two-Three Facilities	14.2 19.9	20.2 <u>28.4</u>	1.3 <u>1.9</u>	1.3 <u>1.8</u>	0.02 <u>0.03</u>	2.7 <u>3.8</u>

Construction emissions were updated with 2009 fleet emission factors

Operational Emissions

Emission Reductions

The proposed rule will establish a VOC content limit of ~~25-50~~ grams per liter for ~~lubricants~~ vanishing oils effective January 1, 2010 ~~and rust inhibitors~~. Rust inhibitors would initially be limited to 300 grams per liter effective January 1, 2010, with further reductions to 50 grams per liter effective January 1, 2012. Exemptions are included for aerospace avionic and assembled aircraft rust inhibitors, military specification or PPAP rust inhibitors and other small volume users. The proposed VOC content limits would not have any impact on the majority of vanishing oils and rust inhibitors. ~~For approximately 90 percent of fluids subjects to the rule that are currently being used, the proposed limit would have no impact as most general metal working fluids already have VOC contents that are less than 25 grams per liter. These low VOC fluids account for only about 25 percent of the total VOC emissions from this emission source category.~~

There would be, however, substantial VOC emission reductions from vanishing oils, and rust inhibitors ~~and solvents used to dilute lubricants or used directly as vanishing oils or rust inhibitors~~. Using the sales weighted average VOC content from surveyed products, establishing a VOC content limits for vanishing oils and rust inhibitors ~~of 25 grams per liter~~ would reduce

VOC emissions by 1.93 tons per day by 2010 (2.0 tons per day by 2011) up to more than 95 percent for the affected categories, resulting in a reduction of 3.08 tons per day of VOC emissions (Table 2-3a).

Based the Development and Demonstration of Alternatives to VOC Emitting Lubricants, Vanishing Oils and Rust Inhibitors Report, discussions with industry and site visits, SCAQMD staff does not expect a substantial increase in the amount of lubricants or rust inhibitor use caused by the reformulation or replacement of high VOC materials with low VOC materials. Based on Table 1-5, high VOC lubricants and rust inhibitors would have a sales weighted average VOC content of greater than 660 grams per liter. Since the VOC content of lubricants and rust inhibitors would be restricted to 25 grams per liter or less by PR 1144, an low VOC content lubricants and rust inhibitors would need to be used in amounts greater than many times the current usage $((660 \text{ g/L})/(25 \text{ g/L}))$ before there would VOC emissions reductions would be lost. Since this has not been observed in SCAQMD commissioned testing or site visits, SCAQMD staff expects that PR 1144 would achieve proposed VOC emission reductions.

Table 2-3a
Emission Reductions Realized in 2010 (Vanishing Oils and Rust Inhibitors)

<u>Fluid Type</u>	<u>Volume Surveyed (thousand gallons)</u>	<u>Sales Weighted Ave VOC Content (g/l)**</u>	<u>Proposed VOC Content (g/l)</u>	<u>Percent Reduction</u>	<u>Total VOC Emission Inventory (tons per day)</u>	<u>Total VOC Emission Reduction (tons per day)</u>
<u>Rust Inhibitors</u>	<u>140.1</u>	<u>660</u>	<u>300</u>	<u>55%</u>	<u>1.06</u>	<u>0.58</u>
<u>Solvent (Rust Inhibitors)</u>	<u>95.2</u>	<u>790</u>	<u>300</u>	<u>62%</u>	<u>0.86</u>	<u>0.53</u>
<u>Specified Rust Inhibitors</u>	<u>15.6</u>	<u>660</u>	<u>300</u>	<u>55%</u>	<u>0.12</u>	<u>0.06*</u>
<u>Vanishing Oil</u>	<u>64.1</u>	<u>710</u>	<u>50</u>	<u>93%</u>	<u>0.52</u>	<u>0.50</u>
<u>Solvent (Vanishing Oil)</u>	<u>38.4</u>	<u>790</u>	<u>50</u>	<u>94%</u>	<u>0.35</u>	<u>0.33</u>
<u>Total</u>	<u>386.8</u>				<u>3.21</u>	<u>2.00</u>

* Realized January 1, 2011

** Based on EPA Method 24

<u>Metal Working Fluid Type</u>	<u>Volume Surveyed (thousand gallons)</u>	<u>Ave VOC Content (g/l)</u>	<u>Proposed VOC Content</u>	<u>Percent Reduction</u>	<u>Total VOC Emission Inventory (ton/day)</u>	<u>Total VOC Emission Reduction (ton/day)</u>
<u>General MWF</u>	<u>3,742</u>	<u>25</u>	<u>25</u>	<u>0%</u>	<u>1.07</u>	<u>0.00</u>
<u>Vanishing Oil</u>	<u>64.1</u>	<u>710</u>	<u>25</u>	<u>96%</u>	<u>0.52</u>	<u>0.50</u>
<u>Rust Inhibitors</u>	<u>156</u>	<u>660</u>	<u>25</u>	<u>96%</u>	<u>1.17</u>	<u>1.13</u>
<u>Solvent</u>	<u>167</u>	<u>790</u>	<u>25</u>	<u>97%</u>	<u>1.50</u>	<u>1.45</u>
<u>Total</u>	<u>4,129</u>				<u>4.26</u>	<u>3.08</u>

MWF — metal working fluid

In 2012, the limit for rust inhibitors would be lowered to 50 grams per liter. This would further reduce VOC emission from rust inhibitor operation by another 0.71 tons per day (see Table 2-3b).

Table 2-3b – Emission Reductions Realized in 2012
(Rust Inhibitors)

<u>Fluid Type</u>	<u>Volume Surveyed (thousand gallons)</u>	<u>Sales Weighted Ave VOC Content (g/l)</u>	<u>Proposed VOC Content (g/l)</u>	<u>Percent Reduction</u>	<u>Total VOC Emission Inventory (tons per day)</u>	<u>Total VOC Emission Reduction (tons per day)</u>
<u>Rust Inhibitors</u>	<u>155.7</u>	<u>300</u>	<u>50</u>	<u>83%</u>	<u>0.53</u>	<u>0.44</u>
<u>Solvent (Rust Inhibitors)</u>	<u>95.2</u>	<u>300</u>	<u>50</u>	<u>83%</u>	<u>0.33</u>	<u>0.27</u>
<u>Total</u>	<u>250.9</u>				<u>0.86</u>	<u>0.71</u>

~~Existing lubricants and rust inhibitors that have high VOC contents are typically petroleum based products. Many of these products either contain or are diluted with mineral spirits and kerosene.~~

~~Multiple low VOC commercially available products have been identified in numerous applications that are already in compliance with the proposed limits. These reformulated or replacement products typically are comprised of waterbased or vegetable based fluids. Cold heading, drawing, grinding, honing machining and metal removal fluids as well as coolants and general lubricants were all found to have low VOC content products in widespread use. For the two applications where high VOC products were identified, stamping (vanishing oil) and rust inhibitors, aqueous and petroleum based technologies were identified and demonstrated in field testing. Those alternatives were analyzed and found to have VOC contents that would meet the proposed limits. The substitution of one type of fluid to another is not expected to have a direct impact on other criteria pollutants.~~

Multiple low-VOC commercially available products have been identified in numerous applications. In many applications, the only products in use are low-VOC products already in compliance with the proposed limits. Cold heading, drawing, honing, forging, milling machining and metal removal fluids as well as coolants and industrial lubricants were all found to have low-VOC content products in widespread use. For applications where high VOC products were identified, compliant aqueous-, bio- and petroleum-based technologies were identified and demonstrated in field testing. Those alternatives were analyzed and found to have VOC contents that would meet the proposed limits.

Because the cost of using reformulated or replacement ~~lubricants~~ vanishing oils and rust inhibitors are expected to be same or less that using existing ~~lubricants~~ vanishing oils and rust inhibitors, the increased use of control equipment is considered very unlikely and; therefore, not expected to be a source of increased pollutants.

Secondary Criteria Emissions

Secondary criteria emissions would be generated by the delivery of cleaning solutions and the removal of aqueous hazardous waste. Approximately one additional 55-gallon drums of cleaning solutions and five additional 55 gallon drums of aqueous hazardous waste would be removed per quarter per facility. SCAQMD staff assumed that two additional medium-duty truck round trips would be required every quarter (one to deliver cleaning solutions and one to remove aqueous hazardous waste), which is eight truck round trips per year per facility. Assuming a 260 day work year, the 427 affected facilities would generate 13 truck round trips per day. Table 2-4 presents the secondary criteria emissions generated by 13 truck round trips per day. Detailed operational emission calculations can be found in Appendix B.

Table 2-4
Secondary Criteria Operation Emissions

Pollutant	CO, lb/day	NOx, lb/day	VOC, lb/day	SOx, lb/day	PM10, lb/day	PM2.5, lb/day
Total Daily Emissions	<u>23.1-21.2</u>	<u>24.9-23.5</u>	<u>3.1-2.9</u>	<u>0.03</u>	<u>0.9-0.8</u>	<u>0.8-0.7</u>

Emissions were estimated using ~~2008~~ 2009 fleet year CARB EMFAC2007 emission factors for the Basin. It was assumed that a one-way trip would be 40 miles.

Worst-Case Criteria Emissions

Since affected facility operators have a year to comply with PR 1144, construction and operational emission could overlap. Therefore, the worst-case criteria emissions would be a day when both construction and operation overlap. Table 2-5 presents the emissions from both construction and operations. No criteria emissions exceed their respective significant thresholds; therefore, PR 1144 is not expected to be significant for criteria pollutants.

Table 2-5
Worst-Case Criteria Emissions from Construction and Operation

Description	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	SOx, lb/day	VOC, lb/day
Construction	<u>14.2-19.9</u>	<u>20.2-28.4</u>	<u>1.3-1.9</u>	<u>1.3-1.8</u>	<u>0.02-0.03</u>	<u>2.7-3.8</u>
Operation	<u>23.1-21.2</u>	<u>24.9-23.5</u>	<u>3.1-0.8</u>	<u>0.03-0.7</u>	<u>0.9-0.03</u>	<u>0.8-2.9</u>
Total Criteria Emissions	<u>37.2-41.1</u>	<u>45.1-51.9</u>	<u>2.2-2.7</u>	<u>2.1-2.5</u>	<u>0.05-0.06</u>	<u>5.8-6.7</u>
Operational Significance Threshold	550	55	150	55	150	55
Significant?	No	No	No	No	No	No

Greenhouse Gases

In addition to criteria pollutant emissions, combustion processes generate GHG emissions that have the potential to affect global climate. Reducing the VOC content of ~~lubricants~~ vanishing oils and rust inhibitors does not produce GHGs. However, construction equipment used to install related devices and mobile sources used to deliver product and remove aqueous liquid wastes during the operational phase are expected to generate GHGs in combustion exhaust. The following GHG analysis focuses on CO₂ and methane emissions because these are the primary GHG pollutant emitted during the combustion process and ~~is~~ are the GHG pollutants for which

emission factors are most readily available. CARB EMFAC2007 and Offroad2007 emission factors were used to determine carbon dioxide (CO₂) and methane (CH₄) emission factors. Other GHGs are emitted, but a complete set of emissions factors are not available; therefore, only CO₂ and methane ~~was~~ were analyzed.

The analysis of GHGs is a much different analysis than the analysis of criteria pollutants for the following reasons. For criteria pollutants, significance thresholds are based on daily emissions because attainment or non-attainment is based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short-term exposure effects on human health, e.g., one-hour and eight-hour. Since the half-life of CO₂ is approximately 100 years, the effects of GHGs are longer-term, affecting global climate over a relatively long time frame. The half-life of methane is seven years; however, methane emissions are a small fraction of the total GHG emissions from combustion (0.005 percent). Further, the action of GHGs is global in nature, rather than local or even regional. As a result, GHG emission impacts are considered to be cumulative impacts rather than project-specific impacts.

Typical GHG emission inventories (EPA⁵, ARB⁶, etc.) present directly emitted GHGs during a given year. GHG emission inventories are often reported in CO₂ equivalent emissions (CO₂eq.). To estimate the CO₂eq., non-CO₂ GHGs are multiplied by their global warming potentials. Since the global warming potential of CO₂ has been defined as one, global warming potentials are normalized to CO₂ emissions. The summation of each GHG emission multiplied by its global warming potential are defined as CO₂eq. Table 2-6 presents CO₂eq. from the proposed project. Detailed calculations of the GHG emissions and CO₂eq. are included in Appendix C.

In the absence of a specific significance threshold, SCAQMD staff has evaluated significance for projects where it is the lead agency on a case-by-case basis. In this analysis, SCAQMD staff has used a variety of benchmarks to evaluate GHG impacts. As additional information is compiled with regard to the level of GHG emissions that constitute a significant cumulative climate change impact, SCAQMD will continue to revisit and possibly revise the level of GHG emissions considered to be significant.

⁵ EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2005, <http://www.epa.gov/climatechange/emissions/downloads06/07CR.pdf>, April 15, 2007

⁶ ARB, Statewide Greenhouse Gas (GHG) Emissions Inventory 1990 to 2004, <http://www.arb.ca.gov/cc/ccei/emsinv/emsinv.htm>.

Table 2-6
Worst-Case Annual CO₂, CH₄ and CO Equivalent Emissions Resulting from PR 1144

Description	CO ₂ Emissions, metric ton/yr	CH ₄ Emissions, metric ton/yr	CH ₄ CO ₂ eq., metric ton/year	CO ₂ eq., metric ton/yr
Construction	338	0.019	0.404	338
Operations	337	0.018	0.384	337
Total for First Year	675	0.038	0.788	676
Total for Each Year After First Year (i.e., without construction)	337	0.018	0.384	337

Construction would be completed by January 1, 2010. After the first year, only operational CO₂ emission would be generated.

The CH₄ global warming potential is 21.

CO₂ equivalent emissions (CO₂eq.) are CO₂ and methane emissions from combustion sources.

In its *CEQA & Climate Change* document (January, 2008), CAPCOA identifies many potential GHG significance threshold options. The CAPCOA document indicates that establishing quantitative thresholds is a balance between setting the level low enough to capture a substantial portion of future residential and non-residential development, while also setting a threshold high enough to exclude small development projects that will contribute a relatively small fraction of the cumulative statewide GHG emissions. For example, CAPCOA identifies one potential significance threshold as 10,000 metric tons per year, which was considered by the Market Advisory Committee for inclusion in a greenhouse gas cap and trade system in California. Another potential threshold identified by CAPCOA is 25,000 metric tons per year, which is CARB's mandatory reporting threshold under AB 32. GHG emissions in the year 2008 and following years from PR 1144 would be lower than both of these reporting thresholds.

Finally, another approach to determining significance is to estimate what percentage of the total inventory of GHG emissions are represented by emissions from a single project. If emissions are a relatively small percentage of the total inventory, it is possible that the project will have little or no effect on global climate change. According to available information, the statewide inventory of CO₂eq. emissions is as follows: 1990 GHG emissions equal 427 million metric tons of CO₂eq. and 2020 GHG emissions equal 600 million metric tons of CO₂eq. with business as usual. Interpolating an inventory for the year 2008 results in 531 million metric tons of CO₂eq. CO₂ emissions during the first year of the project of 675 metric tons from PR 1144 represent 0.00013 percent of the statewide GHG inventory in 2008. CO₂ emissions from each year after construction is completed would be 337 metric tons from PR 1144, which represents 0.000064 percent of the statewide GHG inventory in 2008. CO₂ emissions from the proposed project are presented in Table 2-7. This small percentage of GHG emissions compared to the total projected statewide GHG emissions inventory is another basis for the SCAQMD's conclusion that GHG emissions from implementing PR 1144 or the alternatives is less than significant.

**Table 2-7
Comparison of Proposed Rule 1144 CO₂ Equivalent Emissions to the 2008 Statewide CO₂ Emissions**

	PR 1144 CO₂eq., metric ton/yr	2008 Statewide CO₂eq., million metric ton/yr	Percentage of PR 1144 CO₂ eq. to Statewide CO₂eq.
Proposed Project, First Year	676	531	0.00013
Proposed Project , After First Year (i.e., after construction is completed)	337	531	0.000064

PR 1144 is part of a comprehensive ongoing regulatory program that includes implementing related SCAQMD 2007 AQMP control measures as amended or new rules to attain and maintain all state and national ambient air quality standards for all areas within its jurisdiction. The 2007 AQMP estimates a CO₂ reduction of 427,849 metric tons per year by 2014, and a CO₂ reduction of 1,523,445 metric ton per year by 2020 as a result of implementing the AQMP. Therefore, PR 1144 in connection with other 2007 AQMP control measures is not considered to be cumulatively significant.

Criteria and Greenhouse Gas Conclusions

PR 1144 would result in overall VOC reductions. Therefore, PR 1144 would not diminish an existing air quality rule or future compliance requirement resulting in a significant increase in any air pollutant.

Since PR 1144 would result in a VOC emissions reduction, PR 1144 would not violate any air quality standard; contribute to an existing or projected air quality violation; or result in a cumulative considerable net increase in any criteria pollutant for which the region is in non-attainment under an applicable federal or state ambient air quality standard.

Since GHG emissions are considered cumulative impacts and the GHG emissions from PR 1144 are below the 10,000 metric tons per year Market Advisory Committee threshold; the 25,000 metric tons per year CARB proposed mandatory reporting threshold under AB 32; a small percentage of the total statewide GHG inventory in 2008; and together with other control measures in the 2007 AQMP, which is a comprehensive ongoing regulatory program that would reduce overall GHGs emissions; cumulative GHG adverse impacts from PR 1144 are not considered significant.

III.d) Diesel exhaust particulate is considered a carcinogenic and chronic non-carcinogenic toxic air pollutant. Construction at affected facilities is expected to last one or two days. Exposure to diesel exhaust particulate from a forklift and delivery truck is expected to add negligible health risk, since diesel exhaust particulate does not have a short-term acute hazard index, and carcinogenic and non-carcinogenic chronic health risks are estimated over an extended period of time.

Health risks from the eight additional truck trips per year at affected facilities (one for the delivery of cleaning solutions and one to remove aqueous hazardous waste each quarter) are expected to be negligible. Tier I of the SCAQMD Risk Assessment Procedures for Rules 1401 and 212, version 7.0, lists the screening emission level for diesel exhaust particulate as 0.12 pounds per year for receptors 25 meters or less from a source. A single affected facility would generate about 0.004 pounds of additional diesel exhaust particulate per year. Since the 0.004 pounds per year is less than the screen value of 0.12 pounds per year, PR 1144 would not be significant for health risk from delivery trucks.

PR 1144 is expected to increase the use of waterbased metal working fluids and the water content of waterbased metal working fluids. This would reduce the amount of solvents in metal working fluids and in metal working fluid clean-up. Depending on the composition of the existing metal working fluids, reducing the solvent content of metal working fluids may reduce the amount of toxic compounds in metal working fluids and clean-up solvents.

The Assessment, Development and Demonstration of Alternatives to VOC-Emitting Lubricants, Vanishing Oils and Rust Inhibitors Report concluded that in general alternative lubricants and rust inhibitors are formulated using fatty acid esters and water diluted materials that are lower in toxicity than traditional organic solvents. The water diluted materials are used at low concentrations so their toxicity is minimized. One potential alternative compliant lubricant identified had 10 to 20 percent triethanolamine and one to 10 percent monoethanolamine. Triethanolamine has been identified as causing occupational asthma by the Association of Environmental and Occupational Health Clinics. The American Conference of Industrial Hygienists (ACGIH) Threshold Limit Values (TLV) of five milligrams per cubic meter is associated with eye and skin irritation, and contact dermatitis. The Cal/OSHA permissible exposure limit (PEL) is also five milligrams per cubic meter. TLV and Cal/OSHA PELs are short-term concentration averages (eight-hour averages). The National Toxicology Program concluded that triethanolamine caused liver tumors in female mice and may have caused a slight increase in hemanogiosarcomas of the liver in male mice. However, no cancer potency values were identified in the Assessment, Development and Demonstration of Alternatives to VOC-Emitting Lubricants, Vanishing Oils and Rust Inhibitors Report.

Monoethanolamine causes eye and skin irritation in animal testing and a ACGIH TLV of three ppm has been established to minimize skin and eye irritation in workers. The Cal/OSHA PEL is also three ppm.

Cancer potency and reference exposure limits for triethanolamine and monoethanolamine have not been established by OEHHA. SCAQMD staff does not typically evaluate cancer and non-cancer health risks from chemicals that do not have cancer potency and reference exposure limits provided by OEHHA. The following analysis has been prepared in response to a request from the public during the public workshop. It should be noted that SCAQMD staff does not normally evaluate health risks using the following methodology because it is not consistent with SCAQMD HRA procedures in the SCAQMD's Risk Assessment Procedures for Rules 1401 and 212.

Large vanishing oil and rust preventative operators use approximately 500 gallons of triethanolamine per year. The concentration of triethanolamine in the diluted metal working fluid is estimated to be one percent or less. Thus, a large shop operator would use approximately

five gallons per year of triethanolamine. Since, the alternative ~~lubricants~~ vanishing oils contained monoethanolamine in half the concentration of triethanolamine, approximately 2.5 gallons of monoethanolamine would be used per year. It was estimated that there could be three to five machine shops within a one-quarter square mile.

Since OEHHA cancer potency and reference exposure limits have not been established, but Cal/OSHA PELs and ACGIH TLVs are available, triethanolamine and monoethanolamine concentrations were evaluated against the Cal/OSHA PELs/ACGIH TLVs. Any compound that exceeds the applicable PEL or TLV concentration at the receptor could cause adverse health effects and would, therefore, be considered a significant adverse health impact.

Based on the above assumptions, a receptor at 25 meters or less from a large facility would be exposed to a concentration of 0.12 milligrams per cubic meter of triethanolamine and 0.0002 ppm of monoethanolamine. These concentrations are less than the TLVs and Cal/OSHA PELs of five milligrams per cubic meter for triethanolamine and three ppm for monoethanolamine.

Since diesel exhaust particulate emissions, and triethanolamine and monoethanolamine concentrations are below significance thresholds, significant adverse air quality impacts to sensitive receptors are not expected from implementing PR 1144.

III.e) Historically, the SCAQMD has enforced odor nuisance complaints through SCAQMD Rule 402 - Nuisance. Affected facilities are not expected to create objectionable odors affecting a substantial number of people for the following reasons: 1) operators currently use metal working fluids; 2) PR 1144 is expected to increase the use of waterbased metal working fluids and increase the water content in waterbased metal working fluids, which would reduce the amount of odorous solvents used in metal working fluids and related clean-up; and 3) the operations occur at facilities that are typically located in industrial zones.

Conclusion

Based on the preceding discussions, PR 1144 is expected to reduce VOC emissions, which is an air quality benefit.

The proposal has no provision that would cause a violation of any air quality standard or directly contribute to an existing or projected air quality violation. The lower VOC emission would assist in reducing overall VOC, PM, and ozone concentrations throughout the district.

Since VOC air quality effects from implementing PR 1144 are seen as benefits, and PR 1144 would not cause an exceedance of any of the air quality significance thresholds in Table 2-1, air quality impacts are not considered to be cumulatively considerable as defined in CEQA Guidelines §15065(c). The analysis of GHGs also concluded that PR 1144 would not generate significant adverse cumulative GHG impacts. Therefore, the proposed project is not expected to result in significant adverse cumulative impacts for any criteria or GHG pollutant.

Thus, PR 1144 is not expected to result in significant adverse air quality impacts, and mitigation measures are not required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES. Would the project:			
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by §404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts on biological resources will be considered significant if any of the following criteria apply:

- The project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, state or local agencies.
- The project interferes substantially with the movement of any resident or migratory wildlife species.
- The project adversely affects aquatic communities through construction or operation of the project.

Discussion

IV.a), b), c), & d) PR 1144 would not require any new development or require modifications to buildings or other structures to comply with the proposed VOC content limits for ~~lubricants~~ vanishing oils and rust inhibitors. Any construction is expected to occur within the boundaries of 427 existing facilities and within existing buildings. As a result, PR 1144 would not directly or indirectly affect any species identified as a candidate, sensitive or special status species, riparian habitat, federally protected wetlands, or migratory corridors. For these same reasons, PR 1144 is not expected to adversely affect special status plants, animals, or natural communities.

IV.e) & f) PR 1144 would not conflict with local policies or ordinances protecting biological resources or local, regional, or state conservation plans because it would only affect ~~lubricants~~ vanishing oils and rust inhibitor operations at 427 existing facilities. Additionally, PR 1144 will not conflict with any adopted local policies, ordinances protecting biological resources, Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan for the same reason identified in Item IV. a), b), c), and d) above.

The SCAQMD, as the Lead Agency for the proposed project, has found that, when considering the record as a whole, there is no evidence that the proposed project will have potential for any new adverse effects on wildlife resources or the habitat upon which wildlife depends. Accordingly, based upon the preceding information, the SCAQMD has, on the basis of substantial evidence, rebutted the presumption of adverse effect contained in §753.5 (d), Title 14 of the California Code of Regulations.

Based upon these considerations, significant adverse biological resources impacts are not anticipated and will not be further analyzed in this Draft EA. Since no significant adverse biological resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES. Would the project:			
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside a formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts to cultural resources will be considered significant if:

- The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group.
- Unique paleontological resources are present that could be disturbed by construction of the proposed project.
- The project would disturb human remains.

V. a), b), c), & d) PR 1144 would not require any new development or require modifications to buildings or other structures to comply with the proposed VOC content limits for ~~lubricants~~ vanishing oils and rust inhibitors. Any construction is expected to occur within the boundaries of 427 existing facilities. All of the affected activities occur within existing structures. Any construction activities to install associated equipment to comply with PR 1144 would not require large pieces of construction equipment or any grading or other earth disturbing activities. As a result, no impacts to historical resources are anticipated to occur as a result of implementing the proposed project. PR 1144 is not expected to require physical changes to the environment, which may disturb historical, paleontological or archaeological resources. Since all construction or physical modifications related to PR 1144 would occur within the facility boundaries and within structures of 427 existing facilities, it is not expected to disturb any human remains.

Based upon these considerations, significant adverse cultural resources impacts are not expected from the implementing PR 1144 and will not be further assessed in this Draft EA. Since no significant adverse cultural resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
VI. ENERGY. Would the project:			
a) Conflict with adopted energy conservation plans?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the need for new or substantially altered power or natural gas utility systems?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Create any significant effects on local or regional energy supplies and on requirements for additional energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create any significant effects on peak and base period demands for electricity and other forms of energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Comply with existing energy standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts to energy and mineral resources will be considered significant if any of the following criteria are met:

- The project conflicts with adopted energy conservation plans or standards.
- The project results in substantial depletion of existing energy resource supplies.
- An increase in demand for utilities impacts the current capacities of the electric and natural gas utilities.
- The project uses non-renewable resources in a wasteful and/or inefficient manner.

Discussion

VI.a), b), c), d) & e) PR 1144 would only affect the VOC content of ~~lubricants~~ vanishing oils and rust inhibitors at 427 existing facilities. The new systems are expected to consist of one 10-kilowatt automated handling machine, three 12-kilowatt heaters and a 10-kilowatt control system. At maximum power the system would operate at 56 kilowatts; however, once water in the cleaning systems is heated, the heaters would run intermittently to maintain a consistent temperature. Under a conservative scenario, it is anticipated that facilities may require an additional 24 kilowatts per facility to run associated cleaning equipment necessary to comply with PR 1144, which would be total of 28 gigawatt-hours per year (24 kilowatts/facility x 52.5 hours/week x 52 weeks/year x 427 facilities).

According to the Final Program EIR for the 2007 AQMP, 120,194 gigawatt-hours per year were available in southern California in 2002. An increased demand of 28 gigawatt-hours per year is 0.023 percent of 120,194 gigawatt-hours per year. Since under the conservative PR 1144 scenario would reduce the total amount of electricity available by less one percent, it would not be significant for adverse electricity impacts.

PR 1144 is not expected to increase demand for natural gas in any way.

Based on the above information, PR 1144 is not expected to conflict with adopted energy conservation plans or standards; substantial depletion of existing energy resource supplies; increase demand for utilities, which would adversely impact the current capacities of the electric and natural gas utilities or use non-renewable resources in a wasteful and/or inefficient manner. Operators affected by PR 1144 are expected to continue to comply with all existing and applicable energy standards and/or conservation plans and/or programs.

PR 1144 is not expected to generate significant adverse energy resources impacts and will not be discussed further in this Draft EA. Since no significant energy impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS. Would the project:			
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant Impact	No Impact
c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts on the geological environment will be considered significant if any of the following criteria apply:

- Topographic alterations would result in significant changes, disruptions, displacement, excavation, compaction or over covering of large amounts of soil.
- Unique geological resources (paleontological resources or unique outcrops) are present that could be disturbed by the construction of the proposed project.
- Exposure of people or structures to major geologic hazards such as earthquake surface rupture, ground shaking, liquefaction or landslides.
- Secondary seismic effects could occur which could damage facility structures, e.g., liquefaction.
- Other geological hazards exist which could adversely affect the facility, e.g., landslides, mudslides.

Discussion

VII.a) PR 1144 would not require any new development or require modifications to buildings or other structures to comply with the proposed VOC content limits for ~~lubricants~~ vanishing oils and rust inhibitors. Any construction activities are expected to be minor and are expected to occur within the boundaries of 427 existing facilities. All of the affected activities occur within existing structures. Any new equipment is expected to be placed on existing concrete slabs in areas that already support the existing ~~lubricant~~ vanishing oil and/or rust inhibitor processes. Any construction activities to install associated equipment to comply with PR 1144 would not require large pieces of construction equipment or any grading or other earth disturbing activities. As a result, substantial exposure of people or structure to the risk of loss, injury, or death involving seismic-related activities, such as strong seismic shaking, landslides, etc. beyond what

currently may exist is not anticipated as a result of implementing PR 1144 and will not be further analyzed in this Draft EA.

VII.b), c), d) & e) PR 1144 is not expected to require new development or construction of new structures. Therefore, PR 1144 would not significantly impact soils or result in locating new structures on geologic units or soils that are unstable or could potential results in landslides, subsidence, etc. As already noted, any construction activities to install associated equipment to comply with PR 1144 would not require large pieces of construction equipment or any grading or other earth disturbing activities that could affect soil erosion or loss of soils.

Based on the above discussion, the proposed project is not expected to have an adverse impact on geology or soils. Since no significant adverse impacts are anticipated, this environmental topic will not be further analyzed in the draft EA. No mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:			
a) Create a significant hazard to the public or the environment through the routine transport, use, disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Significantly increased fire hazard in areas with flammable materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance Criteria

Impacts associated with hazards will be considered significant if any of the following occur:

- Non-compliance with any applicable design code or regulation.
- Non-conformance to National Fire Protection Association standards.
- Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.
- Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

VIII.a, b) c) & i) An estimated ~~90-89~~ percent of the metal working fluids have a VOC content of ~~25-200~~ grams per liter of material or less after dilution. Products that would not meet the proposed limits are stamping oils designed to evaporate quickly leaving no residue, known as vanishing oils. Vanishing oils are typically comprised of solvents such as kerosene or mineral spirits or straight oils. Alternatives to high solvent content vanishing oils include water-dilutable metal working fluids and light straight oils. Cleaning of PR 1144 ~~complaintant-compliant~~ metal working fluids is expected to be done with water.

PR 1144 is expected to increase the use of waterbased metal working fluids and the water content of waterbased metal working fluids. This would reduce the amount of solvents in metal working fluids and in metal working fluid clean-up. Depending on the composition of the existing metal working fluids, reducing the solvent content of metal working fluids may reduce the amount of toxic compounds in metal working fluids and clean-up solvents.

The Assessment, Development and Demonstration of Alternatives to VOC-Emitting Lubricants, Vanishing Oils and Rust Inhibitors Report concluded that in general alternative lubricants and rust inhibitors are formulated using fatty acid esters and water diluted materials that are lower in toxicity than traditional organic solvents. The water diluted materials are used at low concentrations so their toxicity is minimized. One potential alternative compliant lubricant identified had 10 to 20 percent triethanolamine and one to 10 percent monoethanolamine. Triethanolamine has been identified as causing occupational asthma by the Association of Environmental and Occupational Health Clinics. The American Conference of Industrial Hygienists (ACGIH) Threshold Limit Values (TLV) of five milligrams per cubic meter is associated with eye and skin irritation, and contact dermatitis. The Cal/OSHA permissible exposure limit (PEL) is also five milligrams per cubic meter. TLV and Cal/OSHA PELs are short-term concentration averages (eight-hour averages). The National Toxicology Program concluded that triethanolamine caused liver tumors in female mice and may have caused a slight increase in hemanogiosarcomas of the liver in male mice. However, no cancer potency values were identified in the Assessment, Development and Demonstration of Alternatives to VOC-Emitting Lubricants, Vanishing Oils and Rust Inhibitors Report.

Monoethanolamine causes eye and skin irritation in animal testing and a ACGIH TLV of three ppm has been established to minimize skin and eye irritation in workers. The Cal/OSHA PEL is also three ppm.

Large vanishing oil and rust preventative operators use approximately 500 gallons of triethanolamine per year. The concentration of triethanolamine in the diluted metal working fluid is estimated to be one percent or less. Thus, a large shop operator would use approximately five gallons per year of triethanolamine. Since, the alternative lubricant contained monoethanolamine in half the concentration of triethanolamine, approximately 2.5 gallons of monoethanolamine would be used per year. An evaluation of the health risk from these toxic air contaminates is presented in the Air Quality Section. The concentrations of triethanolamine and monoethanolamine are expected to below the Cal/OSHA PELs.

Since the triethanolamine and monoethanolamine are used in dilute waterbased lubricants and these lubricants are expected to be delivered in a single 55 gallon drum at any one time, the amount of triethanolamine and monoethanolamine that might be accidentally released is small. Aqueous waste containing triethanolamine and monoethanolamine would be sent to hazardous waste disposal sites.

The shift to waterbased metal working fluids under PR 1144 is expected in general to reduce the amount of toxics in metal working fluids and solvent cleaning, which would reduce exposure to the public; including sensitive receptors such as, existing or proposed schools; hospitals, etc., and releases into the environment of toxic or flammable substances. A reduction in the use of toxic formulations would reduce possible exposure routine transport, use or disposal of hazardous material from accidental releases of toxic substances.

VIII.d) 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 of the 427 facilities regulated by PR 1144 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 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

VIII.e), & f) Since PR 1144 would reduce the amount of TACs through increase use of waterbased metal working fluids and increase water content in metal working fluids, implementation of PR 1144 is not expected to increase or create any new hazardous emissions in general, which could adversely affect public/private airports located in close proximity to the affected sites. PR 1144 may increase or introduce the use of triethanolamine and monoethanolamine in small amounts. However, as stated above, the adverse impacts from the use of triethanolamine and monoethanolamine is expected to be less than significant to off-site receptors. Therefore, their use at facilities near public/private airports or airfields is not expected to be significant.

VIII.g) PR 1144 has no provisions that dictate the use of any specific metal working fluid formulation. Operators who use metal working fluids have the flexibility of choosing metal working fluids that are best suited for their operations. If available, it is likely that operators would choose a compliant formulation that does not pose a substantial safety hazard. As shown in the discussion under item VIII.a), b) & c) above, it is expected that replacement metal working fluid would generally be less toxic than currently used solvents. Increased or new use of waterbased lubricants that contain the only identified hazardous materials, triethanolamine and monoethanolamine, is expected to be less than significant.

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.

Although PR 1144 might require minor modifications to emergency response plans to eliminate the use of potentially hazardous solvents, it is not anticipated that PR 1144 would impair implementation of or physically interfere with an adopted or modified emergency response plan or emergency evacuation plan.

VIII.h) Since the use of PR 1144 compliant metal working fluids would generally be expected to occur at 427 existing industrial sites 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 PR 1144.

In conclusion, potentially significant adverse hazard or hazardous material impacts resulting from adopting and implementing PR 1144 are not expected and will not be considered further. No mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY.			
Would the project:			
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant Impact	No Impact
h) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
k) Require or result in the construction of wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
l) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
m) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed, the construction of which could cause significant environmental effects.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
n) Require in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Potential impacts on water resources will be considered significant if any of the following criteria apply:

Water Quality:

- The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.

- The project will cause the degradation of surface water substantially affecting current or future uses.
- The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.
- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The project results in alterations to the course or flow of floodwaters.

Water Demand:

- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use a substantial amount of potable water.
- The project increases demand for water by more than five million gallons per day.

Discussion

IX.a), e), j) & k) PR 1144 would increase the use of water used to clean parts associated with vanishing fluids ~~and light oils~~. The cleaning solutions would be alkaline with a pH range between 8 and 13. Most cleaners have a pH in around 10 to 11 and contain small amounts of surfactants, builders, solvents and corrosion inhibitors. The cleaners themselves are usually non-hazardous unless they have a high pH (above 11). However, after use the cleaners contain oil, grease and trace amounts of metal that make them unsuitable for direct discharge to the sewer system and may make them aqueous hazardous wastes (see Solid/Hazardous Waste Environmental Topic).

Once generated it is expected that the aqueous hazardous waste would be sent in 55 gallon barrels to appropriate hazardous treatment facilities to remove hazardous constituents. The oils, grease and metal would be removed and the pH of the water would be adjusted. After treatment the water would be sent to publicly owned treatment facilities.

Since PR 1144 is expected to increase the use of waterbased and vegetablebased lubricants and rust inhibitors, PR 1144 is not expected to increase the use of petroleum-based cleaning solvents. No increase in cleaning solvent usage was identified after similar amendments to Rules 1122 and 1171.

SCAQMD staff assumes that approximately an additional 903 gallons per year of water would be required to dilute or clean affected lubrication and rust inhibitor processes at each facility. Since there are estimated to be 427 affected facilities, the total water use would be 385,368 gallons per year. Assuming 260 work days per year, PR 1144 would generate, as a worst-case scenario, approximately 385,368 gallons per year (1,482 gallons per day). Based on the 2007 AQMP, POTWs have an overall capacity of about 2,000 million gallons per day. The proposed generation of 1,482 gallons per day would be 0.0001 percent of the overall POTW capacity.

Since aqueous waste from metal working processes is considered hazardous waste it would be treated at hazardous waste treatment facilities. Once treated, the effluent would have to comply with any state or federal pretreatment standards before being released into municipal sewers. Therefore, PR 1144 is not expected to violate any water quality standard or waste discharge

requirement, degrade water quality or exceed the wastewater treatment requirements of the applicable Regional Water Quality Control Board.

IX.b), & n) PR 1144 is not expected to substantially deplete 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. PR 1144 would not significantly increase demand for water from existing entitlements and resources and would not require new or expanded entitlements because the amount of water used would be very small. Therefore, no water demand impacts are expected as the result of implementing the proposed project.

IX c), d), & l) Operations affected by PR 1144 are housed within structures that already have stormwater structures in place, as necessary. All PR 1144 related construction and new or modified operations are expected to occur within the existing structures, therefore, PR 1144 is not expected to create or contribute to additional runoff water. Therefore, PR 1144 would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

As detailed above, the proposed rule is not expected to require more than 354,000 gallons per year of additional wastewater disposal capacity, violate any water quality standard or wastewater discharge requirements, or otherwise substantially degrade water quality, because wastewater would be collected and transferred to appropriate reclamation or disposal facilities. As result, no changes to storm water runoff, drainage patterns, groundwater characteristics, or flow are expected. Therefore, potential adverse impacts to drainage patterns, etc., are not expected as a result of implementing PR 1144.

IX.f), g), h) & i) PR 1144 would not require any development or construction of additional structures; therefore, PR 1144 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, PR 1144 is not expected to expose people or structures to new significant flooding risks. Compliance with PR 114 at the 427 existing affected facilities will not affect any existing risks from flood, inundation, etc. Consequently, PR 1144 would not affect in any way any potential existing flood hazards inundation by seiche, tsunami, or mud flow that may already exist relative to the 427 existing affected facilities.

IX. m) PR 1144 would not require any new development or require modifications to buildings or other structures to comply with the proposed VOC content limits for lubricants vanishing oils and rust inhibitors. Construction to add cleaning processes and automation may occur within existing buildings.

An estimated ~~90-89~~ percent of metal working fluids have a VOC content of ~~25-200~~ grams per liter of material after dilution. The soluble, semi-synthetic and synthetic metal working fluids have low VOC contents because of the existing high water content of those fluids. Neat solvents would not use water for dilution or clean-up, because they are not water soluble.

The lubricants vanishing oils and rust inhibitors are typically sold in concentrate form and the water is added at the metal working facilities. PR 1144 would increase the amount of water usage from product reformulation. It is estimated that approximately 352,700 gallons of water

would be used with reformulate products to comply with PR 1144. Based on a 260 day per year work schedule, this would be 1,357 gallons of water per day.

SCAQMD staff assumes that approximately an additional 903 gallons per year of water would be required to dilute or clean affected ~~lubricants~~ vanishing oil and rust inhibitor processes at each facility. Since there are estimated to be 427 affected facilities, the total water use would be 385,368 gallons per year. Assuming 260 work days per year, PR 1144 would generate, as a worst-case scenario, approximately 385,368 gallons per year (1,482 gallons per day).

Based on the above analysis, 2,839 gallons per day of water would be required by PR 1144 (1,357 gallons per day because of product reformulation and 1,482 gallons per day for cleaning). Since 2,839 is less than the significance threshold of five million gallons per day, sufficient water supplies are expected to be available. As a result implementing PR 1144 would not require the construction of additional water resource, the need for new or expanded water entitlements, or an alteration of drainage patterns. Since the proposed project uses less than five million gallons of water, the project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge.

Based upon the above considerations, significant hydrology and water quality impacts are not expected from the implementation of PR 1144 and will not be further analyzed in this Draft EA. Since no significant hydrology and water quality impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING. Would the project:			
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Land use and planning impacts will be considered significant if the project conflicts with the land use and zoning designations established by local jurisdictions.

Discussion

X.a) PR 1144 would not require any new development or require modifications to buildings or other structures to comply with the proposed VOC content limits for ~~lubricants~~ vanishing oils and rust inhibitors. Any construction is expected to occur within the boundaries of 427 existing facilities. All of the affected activities occur within existing structures. Therefore, PR 1144 does not include any components that would require physically dividing an established community.

X.b) & c) There are no provisions in PR 1144 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 reducing the VOC content of affected metal working fluids. Therefore, PR 1144 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. Present or planned land uses in the region would not be significantly adversely affected as a result of implementing the proposed rule.

Based upon these considerations, significant adverse land use and planning impacts are not expected from the implementation of PR 1144 and will not be further analyzed in this Draft EA. Since no significant land use and planning impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XI. MINERAL RESOURCES. Would the project:			
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Project-related impacts on mineral resources will be considered significant if any of the following conditions are met:

- The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- The proposed project results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Discussion

XI.a) & b) There are no provisions in PR 1144 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 because compliance with PR 1144 does not require mineral resources such as sand, gravel, etc.

Based upon the above considerations, significant adverse mineral resources impacts are not expected from the implementation of PR 1144 and will not be further analyzed in this Draft EA. Since no significant mineral resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XII. NOISE. Would the project result in:			
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airship, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts on noise will be considered significant if:

- Construction noise levels exceed the local noise ordinances or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal Occupational Safety and Health Administration (OSHA) noise standards for workers.
- The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

Discussion

XII.a) PR 1144 would only affect VOC content of metal working fluids at 427 existing facilities. PR 1144 would not require any new development or require modifications to buildings or other structures to comply with the proposed rule. All of the affected activities occur within existing structures. Any new construction of new equipment is expected to occur within existing structures. Any construction activities to install associated equipment to comply with PR 1144 would not require large pieces of construction equipment or any grading or other earth disturbing activities that would expect to generate excessive noise levels. Metal working fluids are associated with metal working or metal removal activities during the repair, maintenance and manufacture of products and goods. Examples of these activities include, but are not limited to, broaching, drilling, drawing, heading, honing, forging, milling, stamping, tapping, threading, turning and wire drawing. These operations currently generate noise. Construction of cleaning processes or automated handling equipment would generate noise similar to existing operations because the main difference would be the use of metal working fluids with different formulations. It is also believed that operations would also generate noise similar to existing operations. Thus, the proposed project is not expected to expose persons to the generation of

excessive noise levels above current facility levels. It is expected that any facility affected by PR 1144 would continue complying with all existing local noise control laws or ordinances.

In commercial environments Occupational Safety and Health Administration (OSHA) and California-OSHA have established noise standards to protect worker health. It is expected that operators at affected facilities will continue complying with applicable OSHA or Cal/OSHA noise standards, which would limit noise impacts to workers, patrons and neighbors.

XII.b) PR 1144 is not anticipated to expose people to, or generate excessive groundborne vibration or groundborne noise levels since construction activities to install associated equipment to comply with PR would not require large pieces of construction equipment or any grading or other earth disturbing activities that would generate excessive groundborne noise or vibrations. Similarly, using different ~~lubricants~~ vanishing oils or rust inhibitors is not expected to alter any existing operation at the 427 facilities and, therefore, any existing noise or vibration levels at affected facilities are not expected to change as a result of implementing PR 1144. Since existing operations are not expected to generate excessive groundborne vibration or noise levels, and PR 1144 is not expected to alter physical operations, no groundborne vibration or noise levels is expected from the proposed rule.

XII.c) A permanent increase in ambient noise levels at the 427 existing affected facilities above existing levels as a result of implementing the proposed project is unlikely to occur because the physical operations are not expected to change greatly at affected facilities. The existing noise levels are unlikely to change and raise ambient noise levels in the vicinities of the existing facilities to above a level of significance, because changes to VOC contents in ~~lubricants~~ vanishing oils and rust inhibitors and associated cleaning equipment are not expected to generate higher noise levels than are already occurring.

XII.d) No increase in periodic or temporary ambient noise levels in the vicinity of affected facilities above levels existing prior to PR 1144 is anticipated because the proposed project would not require substantial construction (e.g. earthmoving) nor substantial changes to metal working fluid processes. As indicated earlier, construction noise levels are expected to be minimal and operational noise levels are expected to be equivalent to existing noise levels.

XII.e) & f) Even if an affected facility is located near a public/private airport, there are no new noise impacts expected from any of the existing facilities as a result of complying with the proposed project. Similarly, any existing noise levels at affected facilities are not expected to increase appreciably. Thus, PR 1144 is not expected to expose people residing or working in the vicinities of public airports to excessive noise levels.

Based upon these considerations, significant adverse noise impacts are not expected from the implementation of PR 1144 and are not further evaluated in this Draft EA. Since no significant noise impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XIII. POPULATION AND HOUSING. Would the project:			
a) Induce substantial growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts of the proposed project on population and housing will be considered significant if the following criteria are exceeded:

- The demand for temporary or permanent housing exceeds the existing supply.
- The proposed project produces additional population, housing or employment inconsistent with adopted plans either in terms of overall amount or location.

Discussion

XIII.a) The proposed project is not anticipated to generate any significant adverse effects, either direct or indirect, on the district's population or population distribution as no additional workers are anticipated to be required for affected facilities to comply with the proposed amendments. Any construction workers necessary to install associated equipment can be drawn from the existing local labor pool in southern California. Human population within the jurisdiction of the SCAQMD is anticipated to grow regardless of implementing PR 1144. As such, PR 1144 would not result in changes in population densities or induce significant growth in population.

XIII.b) & c) Because the proposed project affects VOC contents of ~~lubricants~~ vanishing oils and rust inhibitors, PR 1144 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 people elsewhere.

Based upon these considerations, significant adverse population and housing impacts are not expected from the implementation of PR 1144 and are not further evaluated in this Draft EA.

Since no significant population and housing impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES. Would the proposal result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:			
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts on public services will be considered significant if the project results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives.

Discussion

XIV.a) & b) PR 1144 would only affect VOC content of metal working fluids at 427 existing facilities. PR 1144 would not require any new development or require modifications to buildings or other structures to comply with the proposed rule. All of the affected activities occur within existing structures. Because compliant products are currently available and are already waterbased, many facility operators currently use PR 1144 compliant materials. As shown in the Section VIII - Hazards and Hazardous Material section of this Draft EA, the use of PR 1144 compliant metal working fluids are not expected to generate significant explosion or fire hazard impacts, because compliant products are no more flammable than conventional fluids.

Therefore, PR 1144 is not expected to increase the chances for fires or explosions requiring a response from local fire departments, but would more than likely reduce the chances of fires or explosions. PR 1144 is not expected to have any adverse effects on local police departments for the following reasons. Police would be required to respond to accidental releases of hazardous

materials during transport. Since hazards impacts from implementing PR 1144 were concluded to be less than significant, potential impacts to local police departments are also expected to be less than significant.

XIV.c) & d) As indicated in discussion under item XIII. Population and Housing, implementing PR 1144 would not induce population growth or dispersion because no additional workers are expected to be needed at the 427 existing affected facilities. Therefore, with no increase in local population anticipated as a result of adopting and implementing PR 1144, additional demand for new or expanded schools or parks is also not anticipated. As a result, no significant adverse impacts are expected to local schools or parks.

XIV.e) Besides building permits, there is typically no need for other government services at affected facilities. The proposal would not result in the need for new or physically altered government facilities and, as a result, is not expected to affect in any way acceptable service ratios, response times, or other performance objectives. There would be no increase in population and, as a result of implementing the proposed project, no need for physically altered government facilities.

Based upon these considerations, significant adverse public services impacts are not expected from the implementation of PR 1144 and are not further evaluated in this Draft EA. Since no significant public services impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XV. RECREATION.			
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts to recreation will be considered significant if:

- The project results in an increased demand for neighborhood or regional parks or other recreational facilities.
- The project adversely affects existing recreational opportunities.

Discussion

XV.a) & b) As discussed under “Land Use and Planning” above, there are no provisions in the PR 1144 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 the proposed rule. The proposed project 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 create an adverse physical effect on the environment because it will not directly or indirectly increase or redistribute population.

Based upon these considerations, significant recreation impacts are not expected from the implementation of PR 1144 and are not further evaluated in this Draft EA. Since no significant recreation impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XVI. SOLID/HAZARDOUS WASTE. Would the project:			
a) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Comply with federal, state, and local statutes and regulations related to solid and hazardous waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

The proposed project impacts on solid/hazardous waste will be considered significant if the following occurs:

- The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

Discussion

XVI.a) Landfills are permitted by the local enforcement agencies with concurrence from the California Integrated Waste Management Board (CIWMB). Local agencies establish the maximum amount of solid waste which can be received by a landfill each day and the operational life of a landfill. PR 1144 is not expected to generate any solid waste; therefore, would not affect solid waste landfills.

XVI.b) It is assumed that existing metal working facility operators currently dispose of hazardous waste from waste ~~lubricants~~ vanishing oils and/or waste rust inhibitors. It is further assumed that facility operators at these affected facilities comply with all applicable local, state, or federal waste disposal regulations. Since the volume of the reformulation or replacement ~~lubricants~~ vanishing oils and rust inhibitors is not expected to be different than the existing ~~lubricants~~ vanishing oils and rust inhibitors, PR 1144 is not expected to substantially change hazardous waste handling and disposal practices.

The use of aqueous cleaning solutions may be required for some facility operators to comply with PR 1144. Since the waste aqueous cleaning solutions, like solvent based cleaning solutions, are considered hazardous wastes because of the oil, grease and trace amounts of metals from the metal working processes, it would not be the cleaning solutions themselves that would require disposal as aqueous hazardous waste, but the material removed from the metal parts. Similarly, metal working facility operators currently dispose of solvent based waste ~~lubricants~~ vanishing oils and/or waste rust inhibitors with such contamination (i.e., oil, grease and trace amounts of metals). Therefore, SCAQMD staff believes that affected metal working operators would continue to comply with all applicable local, state, or federal waste disposal regulations regarding hazardous waste containing oil, grease and trace amounts of metals.

There are three Class I landfills in California: Chemical Waste Management Kettleman Hills in Kettleman City, CA; Clean Harbors Buttonwillow in Buttonwillow, CA, and Clean Harbors Westmorland in Westmorland, CA. Chemical Waste Management Kettleman Hills has a remaining capacity of 7,360,000 cubic yards with an estimated closure date of 2037. Clean Harbors Buttonwillow and Westmorland have a remaining capacity of 12,731,000 cubic yards with an estimated closure date of 2036.

Existing facilities are expected to dispose of ~~lubricants~~ vanishing oils, rust inhibitors and wastewater as hazardous waste. Modifications to ~~lubricants~~ vanishing oils and rust inhibitors have increased the amount of water in formulations, which decrease the amount of solvent content.

SCAQMD staff expects that water would be used to clean all metal working fluids. The cleaning solutions would be alkaline with a pH range between 8 and 13. Most cleaners have a pH between 10 to 11. The cleaning solutions contain small amounts of surfactants, builders, solvents and corrosion inhibitors. The cleaners themselves are usually non-hazardous unless they have a high pH (above 11). However, after use the cleaning solutions contain oil, grease and trace amounts of metal that make them unsuitable for direct discharge into the sewer system and may make them hazardous wastes. SCAQMD staff assumed that used cleaning solutions would be treated as an aqueous hazardous waste and sent to a hazardous waste disposal facility for treatment.

SCAQMD staff estimates that approximately an additional 950 gallons per year of aqueous hazardous waste would be generated by each of the 427 affected facilities, which would be 405,650 gallons of aqueous hazardous waste sent to disposal yearly.

Table 2-8 presents the total amount of hazardous waste generation by county and the amount of hazardous waste that was reported as either an alkaline or aqueous solution as reported to the Department of Toxic Substance Control (DTSC). Assuming that the alkaline/aqueous solutions have the same density as water, the proposed project may generate as much as 405,650 gallons of aqueous waste per year, which would weigh approximately 1,880 tons per year. The current disposal capacity for all hazardous waste based on information from the Department of Toxic Substance Control (DTSC) is 1,1486,494 tons per year. The amount of hazardous waste specified as alkaline or aqueous solutions in the DTSC database is 90,790 tons per year. This category may be under reported because aqueous hazardous waste may also be reported under other categories. Based on the estimated current capacity of 90,790 tons per year of disposed aqueous and alkaline hazardous solutions, the percentage increase in alkaline/aqueous hazardous waste generated by the proposed project would be approximately two percent ((1,880 ton/year)/(90,790 ton/year)).

**Table 2-8
2007 Hazardous Waste Generation in the South Coast Air Basin**

County	Alkaline or Aqueous Solution, ton/year	Total Hazardous Waste, ton/year
Los Angeles	72,714	1,193,181
Orange	6,286	113,452
Riverside	2,673	38,937
San Bernardino	9,118	140,924
Total	90,790	1,486,494

- Data from the Department of Toxic Substance Control (DTSC) 2008 Hazardous Waste Tracking System (HWTS), General Public Reports, Total Yearly Tonnage by Waste Code, http://hwts.dtsc.ca.gov/report_search.cfm?id=1.
- Waste is reported for entire county not just portions of county under SCAQMD jurisdiction.
- Alkaline or Aqueous Solution categories were added together (Waste Codes 121, 122, 123, 131, 132, 133, 134, and 135)

Aqueous hazardous waste cannot be disposed of directly into solid/hazardous waste landfills, since it is illegal to dispose of liquids in solid/hazardous waste landfills. Aqueous hazardous waste is treated either at hazardous waste treatment or hazardous waste treatment/disposal sites. The oil, grease and metals are separated out from the water and disposed as solid waste at hazardous waste sites. The water is treated to adjust pH, and then disposed of as sewage to POTWs.

The amount of solid hazardous waste removed from aqueous cleaning solution waste and disposed of at hazardous waste landfill is expected to be small. In addition, the amount of oil, grease and metals in the aqueous solution is expected to be the same as in existing lubricants

vanishing oils and rust inhibitor waste from metal operations, therefore, the amount disposed at hazardous waste landfills.

Therefore, based on the existing capacity and the fact that PR 1144 is not expected to change the amount of hazardous waste disposed, it is believed that there would be sufficient capacity at existing solid hazardous waste facilities that process alkaline or aqueous hazardous solution. Therefore, PR 1144 is not expected to result in the disposal of hazardous wastes that would exceed the capacity of designated hazardous waste landfills.

Based on these considerations, PR 1144 is not expected to significantly increase the volume of solid or hazardous wastes disposed at existing municipal or hazardous waste disposal facilities or require additional waste disposal capacity. Further, implementing PR 1144 is not expected to interfere with any affected facility's ability to comply with applicable local, state, or federal waste disposal regulations. Since no solid/hazardous waste impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION/TRAFFIC. Would the project:			
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant Impact	No Impact
e) Result in inadequate emergency access or?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts on transportation/traffic will be considered significant if any of the following criteria apply:

- Peak period levels on major arterials are disrupted to a point where level of service (LOS) is reduced to D, E or F for more than one month.
- An intersection’s volume to capacity ratio increase by 0.02 (two percent) or more when the LOS is already D, E or F.
- A major roadway is closed to all through traffic, and no alternate route is available.
- There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
- The demand for parking facilities is substantially increased.
- Water borne, rail car or air traffic is substantially altered.
- Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.
- The need for more than 350 employees
- An increase in heavy-duty transport truck traffic to and/or from the facility by more than 350 truck round trips per day
- Increase customer traffic by more than 700 visits per day.

Discussion

XVII.a) & b) SCAQMD staff estimates that PR 1144 may increase the amount of solutions required at affected facilities by 20,283 gallons per year and waste disposal by 405,650 gallons per year. Based on this approximately one additional 55 gallon drums of solutions would be required and approximately five additional 55-gallon drums of aqueous hazardous waste per quarter. SCAQMD staff assumed that two additional medium-duty truck round trips would be required every quarter (one to deliver cleaning solutions and one to remove aqueous hazardous waste), which is eight truck trips per year per facility. Assuming a 260 day work year, the 427 affected facilities would generate 13 truck round trips per day. Given that affected facilities are dispersed throughout the district, it is unlikely that truck traffic from different affected facilities would overlap. As a result, implementing PR 1144 is not expected to substantially affect the level of service (LOS) of any intersection in the district.

Therefore, PR 1144 is not expected to adversely affect traffic or transportation systems. The proposed rule would not change or substantially increase operational transportation demands or services. Therefore, the implementation of PR 1144 is not expected to significantly adversely

affect circulation patterns on local roadways or the level of service at intersections near affected facilities.

XVII.c) Since PR 1144 would not require substantial construction or operations outside existing structures. Further, PR 1144 would not affect in any way air traffic in the region as no ~~lubricants~~ vanishing oils or rust inhibitors would need to be transported by plane.

XVII.d) Since PR 1144 only affects VOC contents of ~~lubricants~~ vanishing oils and rust inhibitors, no offsite modifications to roadways are anticipated for the proposed project that would result in additional design hazards or incompatible uses.

XVII.e) Since PR 1144 only affects VOC contents of ~~lubricants~~ vanishing oils and rust inhibitors at 427 existing facilities, no changes are expected to emergency access at or in the vicinity of the affected facilities. The proposed project is not expected to adversely impact emergency access because it primarily requires replacement of non-compliant ~~inks~~ vanishing oils and ~~end solvents~~ rust inhibitors with compliant products. Using compliant products and associated cleaning systems are not expected to substantially modify a facility's physical layout that would affect emergency access.

XVII.f) Since PR 1144 only affects VOC contents of ~~no lubricants~~ vanishing oils and rust inhibitors at 427 existing facilities, no changes are expected to the parking capacity at or in the vicinity of the affected facilities. PR 1144 is not expected to require additional workers, so additional parking capacity will not be required. Construction is expected to require a single delivery truck and forklift; therefore, is not expected to substantially adversely impact parking at an affected facility. Therefore, the project is not expected to adversely impact on- or off-site parking capacity.

XVII.g) Since PR 1144 only affects VOC contents of ~~no lubricants~~ vanishing oils and rust inhibitors at 427 existing facilities, the implementation of PR 1144 would not result in conflicts with alternative transportation, such as bus turnouts, bicycle racks, et cetera.

Based upon these considerations, PR 1144 is not expected to generate significant adverse transportation/traffic impacts and, therefore, this topic will not be considered further. Since no significant transportation/traffic impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
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XVII. MANDATORY FINDINGS OF SIGNIFICANCE

- | | | | |
|--|--------------------------|-------------------------------------|-------------------------------------|
| a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects) | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

XVIII.a) As discussed in the “Biological Resources” section, PR 1144 is not expected to significantly adversely affect plant or animal species or the habitat on which they rely because PR 1144 affects the VOC contents of no ~~lubricants~~ vanishing oils and rust inhibitors used in metal working operations, which typically occur in existing structures at 427 existing affected facilities. The 427 affected facilities are located at sites that have already been greatly disturbed and that currently do not support such habitats. Additionally, any construction required for PR 1144 is expected to be done on existing concrete foundations within existing structures. PR 1144 is not expected to induce construction of any new land use projects that could affect biological resources.

XVIII.b) Based on the foregoing analyses, ~~since~~ PR 1144 would not generate any project-specific significant adverse environmental impacts or cause cumulative impacts in conjunction with other projects that may occur concurrently with or subsequent to the proposed project. Related projects to the currently proposed project include existing and proposed rules and regulations, as well as AQMP control measures, which produce emission reductions from most industrial and commercial sectors. Furthermore, because PR 1144 does not generate project-specific impacts, cumulative impacts are not considered to be "cumulatively considerable" as defined by CEQA guidelines §15065(a)(3). For example, the environmental topics checked ‘No

Impact' (e.g., aesthetics, agriculture resources, biological resources, cultural resources energy, geology and soils, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, solid/hazardous waste and transportation and traffic) would not be expected to make any contribution to potential cumulative impacts whatsoever. For the environmental topic checked 'Less than Significant Impact' (e.g., air quality, hazards and hazardous materials), the analysis indicated that project impacts would not exceed any project-specific significance thresholds. These conclusions are based on the fact that the analyses for each of these environmental areas concluded that the incremental effects of the proposed project would be minor and, therefore, not considered to be cumulatively considerable. Also, in the case of air quality impacts, the net effect of implementing the proposed project with other proposed rules and regulations, and AQMP control measures is an overall reduction in district-wide emissions, thus, contributing to the attainment of state and national ambient air quality standards. Therefore, it is concluded that PR 1144 has no potential for significant cumulative or cumulatively considerable impacts in any environmental areas.

XVIII.c) Based on the foregoing analyses, PR 1144 is not expected to cause significant adverse effects to human beings. Significant adverse air quality impacts are not expected from the implementation of PR 1144. Based on the preceding analyses, no significant adverse impacts to aesthetics, agriculture 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 and transportation and traffic are expected as a result of the implementation of PR 1144.

As discussed in items I through XVIII above, the proposed project has no potential to cause significant adverse environmental effects.

APPENDIX A

PROPOSED RULE 1144

In order to save space and avoid repetition, please refer to the latest version of proposed Rule 1144 located elsewhere in the rule amendment package. The version “PR 1144, v.101008” of the proposed rule was circulated with the Draft Environmental Assessment that was released on October 14, 2008 for a 30-day public review and comment period ending November 12, 2008.

Original hard copies of the Draft Environmental Assessment, which include the version “PR 1144, v.101008” of the proposed rule, can be obtained through the SCAQMD Public Information Center at the Diamond Bar headquarters or by calling (909) 396-2039 or downloaded from the SCAQMD website at: <http://www.aqmd.gov/ceqa/documents/2007/aqmd/draftEA/1144.pdf>.

APPENDIX B

EMISSION CALCULATIONS

**Table B-1
Construction Emissions**

Construction Schedule			
Equipment Type^{a,b}	No. of Equipment	hr/day	Crew Size
Forklifts	1	6.0	3

Construction Equipment Combustion Emission Factors							
Equipment Type^c	CO lb/hr	NOx lb/hr	PM10 lb/hr	SOx lb/hr	VOC lb/hr	CO2 lb/hr	CH4 lb/hr
Forklifts	<u>0.254-0.249</u>	<u>0.432-0.406</u>	<u>0.048-0.045</u>	0.000	<u>0.074-0.069</u>	119.581	0.0072

Construction Vehicle (Mobile Source) Emission Factors							
	CO lb/mile	NOx lb/mile	PM10 lb/mile	SOx lb/mile	VOC lb/mile	CO2 lb/mile	CH4 lb/mile
Heavy-Duty Truck ^d	<u>0.0136-0.0128</u>	<u>0.0446-0.0418</u>	<u>0.0022-0.0020</u>	0.0000	<u>0.0035-0.0033</u>	<u>4.2107-4.2108</u>	<u>0.0002-0.0002</u>
Personal Vehicle	<u>0.0105-0.0097</u>	<u>0.0011-0.0010</u>	<u>0.0001-0.0001</u>	0.0000	<u>0.0011-0.0010</u>	<u>1.0995-1.0976</u>	<u>0.0001-0.0001</u>

On-Site Number of Trips and Trip Length		
Vehicle	No. of One-Way Trips/Day	One Way Trip Length (miles)
Heavy-Duty Trucks ^e	2	40
Personal Vehicle	4	40

Incremental Increase in Onsite Idling Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/hr) x No. of Equipment x Work Day (hr/day) = Onsite Construction Emissions (lb/day)							
Equipment Type	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	CO2 lb/day	CH4 lb/day
Forklifts	<u>1.52-1.49</u>	<u>2.59-2.44</u>	<u>0.29-0.27</u>	0.00	<u>0.44-0.41</u>	717.49	0.043
Total	<u>1.52-1.49</u>	<u>2.59-2.44</u>	<u>0.29-0.27</u>	0.00	<u>0.44-0.41</u>	717.49	0.043

**Table B-1
Construction Emissions (Concluded)**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)							
Vehicle	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	CO2 lb/day	CH4 lb/day
Heavy-Duty Trucks	2.178 - 2.052	7.133 - 6.695	0.3450 - 0.3193	0.0066 - 0.0064	0.5625 - 0.5269	674 - 674	0.03 - 0.02
Personal Vehicle	3.375 - 3.099	0.353 - 0.322	0.027 - 0.028	0.003 - 0.003	0.345 - 0.318	352 - 351	0.03 - 0.03
Total	5.55-5.15	7.49-7.02	0.37-0.35	0.01	0.91-0.84	1,026-1,025	0.06-0.05

Total Incremental Combustion Emissions from Construction Activities							
Sources	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	CO2 lb/day	CH4 lb/day
On-Site Emissions	7.1 - 6.6	10.1 - 9.5	0.7 - 0.6	0.0	1.4 - 1.3	1,743	0.10

Combustion and Fugitive Summary	PM2.5 Fraction^h	PM10 lb/day	PM2.5 lb/day
Combustion	0.98	0.7 - 0.6	0.6
Fugitive	0.21	0	0
Total		0.7-0.6	0.6

Notes:
 Project specific data may be entered into shaded cells. Changing the values in the shaded cells will not affect the integrity of the worksheets. Verify that units of values entered match units for cell. Adding lines or entering values with units different than those associated with the shaded cells may alter the integrity of the sheets or produce incorrect results.
 a) SCAB values provided by the ARB, Aug 2004. Assumed equipment is diesel fueled.
 b) CARB, EMFAC2002 (version 2.2).
 c) CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

**Table B-2
Number of 55 Gallon Drums Required**

Description	No. of Facilities	Total Usage, gal/yr	Usage by Facility, gal/year	Usage, drum/month	Usage, drum/quarter
Cleaning Solutions	427	20,283	48	0.1	1
Waste	427	405,650	950	1.4	5

**Table B-3
Additional Distance Traveled**

No. of Facilities	Single Facility Trips per Year	Total Daily Trips	Trip Distance, mile/trip	Total Distance Traveled, mile/day
427	8	13	40	1,051

**Table B-4
Criteria Emissions from Truck Travel**

Pollutant	CO	NO _x	ROG	SO _x	PM10	PM2.5
EMFAC2007 Emission Factor, lb/mile	0.0219491	0.0237126	0.0029927	2.56467E-05	0.0008561	0.0007393
Daily Emissions, lb/day	<u>0.02016075</u>	<u>0.02236636</u>	<u>0.00278899</u>	<u>0.00002679</u>	<u>0.00080550</u>	<u>0.00069228</u>

**Table B-5
Greenhouse Gas Emissions from Truck Travel**

No. of Facilities	Single Facility Trips per Year	Total Trips per Year	Trip Distance, mile/trip	Total Distance Traveled, mile/year	CO ₂ EF, lb/mile	CO ₂ Emissions, MT/year	CH ₄ EF, lb/mile	CH ₄ Emissions, MT/year	CO ₂ e Emissions, MT/year
427	12	5,124	40	409,920	2.72	506	0.000148	0.027	506

**Table B-6
Diesel Exhaust Particulate Emissions from Truck Idling at Affected Facilities**

EMFAC2007 Emission Factor for 2008 <u>2009</u> , g/hr	Idling Time, hr/event	No of Trips per Year	PM10 Emissions, lb/year
<u>0.992-0.968</u>	0.25	8	<u>0.00437-0.0042643</u>

**Table B-7
Off-Site Health Risk from Triethanolamine**

No of Adjacent Facilities	Usage, gal/year/facility	Adjacent Facilities Usage, gal/year	Density, lb/gal	Usage, lb/year	Usage, lb/hr	(X/Q), (ug/m3)/(lb/hr)	AF 7-Hr	Conc., ug/m3	Conc., mg/m3
5	5	25	9.34	234	0.08	1,532	0.98	122	0.12

Usage, lb/hr = usage, lb/year/(260 day/year)/(8 hour/day)

HI = [usage, lb/hr x (X/Q)]/PEL, ug/m3

(X/Q) from Table 7 of the Risk Assessment Procedures for Rules 1401 and 212, volume source less than 25 meters away from a receptor.

Conc., mg/m3	Cal/OSHA PEL, mg/m3	Less Than PEL
0.12	5	Yes

**Table B-8
Off-Site Health Risk from Monoethanolamine**

No of Adjacent Facilities	Usage, gal/year/facility	Adjacent Facilities Usage, gal/year	Density, lb/gal	Usage, lb/year	Usage, lb/hr	(X/Q), (ug/m3)/(lb/hr)	AF 7-Hr	Conc., ug/m3	Conc., ppm
5	2.5	12.5	8.51	106	0.04	1,532	0.98	55	0.0002

Usage, lb/hr = usage, lb/year/(260 day/year)/(8 hour/day)

HI = [usage, lb/hr x (X/Q)]/PEL, ug/m3

(X/Q) from Table 7 of the Risk Assessment Procedures for Rules 1401 and 212, volume source less than 25 meters away from a receptor .

Conc., ppm	Cal/OSHA PEL, ppm	Less Than PEL
0.0002	3	Yes