ATTACHMENT G:

Rate-of-Progress Technical Support Document

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Clark County 15% VOC Rate-of-Progress Plan: Technical Support Document

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Acronyms and Abbreviations

AIM	Architectural and Industrial Maintenance
ALAPCO	Association of Local Air Pollution Control Officials
CAA	Clean Air Act
CARB	California Air Resources Board
CCNAA	Clark County Ozone Nonattainment Area
CO	Carbon Monoxide
CTG	Control Technique Guideline
DES	Clark County Department of Environment and Sustainability
DOA	Clark County Department of Aviation
DV	Design Value
EMP	Emissions Modeling Platform
EPA	U.S. Environmental Protection Agency
EVR	Enhanced Vapor Recovery Systems
GDF	Gasoline Dispensing Facilities
HA 212	Hydrographic Area 212
HAP	Hazardous Air Pollutant
MCM	Menu of Control Measures
MOU	Memorandum of Understanding
NAICS	North American Industry Classification System
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standard
NO_2	Nitrogen Dioxide
NOx	Nitrogen Oxides
O_3	Ozone
OTC	Ozone Transportation Commission
Pb	Lead
PM_{10}	Particulate matter less than 10 microns
$PM_{2.5}$	Particulate matter less than 2.5 microns
Ppb	Parts per billion
PTE	Permanent Total Enclosure
P/V	Pressure/Vacuum

RFG	Reformulated Gasoline
RACT	Reasonable available control technology
ROP	Rate-of-Progress
SCAQMD	South Coast Air Quality Management District
SCC	Source Classification Code
SI	Spark-ignited
SIP	State Implementation Plan
SO_2	Sulfur dioxide
SORE	Small Off-Road Engine
SMOKE	Sparse Matrix Operator Kernel Emissions
STAPPA	State and Territorial Air Pollution Program Administrators
Tpd	Tons per day
TSD	Technical Support Document
UST	Underground Storage Tank
Workgroup	AIM Coatings and Consumer Products Workgroup
VOC	Volatile Organic Compounds
VCP	Volatile Chemical Product

1.0 Introduction

The Clark County, Nevada ozone Nonattainment Area (CCNAA), also referred to as Hydrographic Area 212 (HA 212), was initially designated in June 2018 as Marginal under the 2015 ozone National Ambient Air Quality Standard (NAAQS). In January 2023, the US Environmental Protection Agency (EPA) redesignated the CCNAA to Moderate. Moderate areas are subject to additional reporting, management, and emissions reduction requirements, including the submittal of a State Implementation Plan (SIP) to the U.S. Environmental Protection Agency (EPA). Clean Air Act Section 182(b)(1) requires moderate nonattainment areas to reduce VOC emissions by 15% following the baseline year (2017). This requirement is known as the Rate of Progress (ROP) requirement.

This technical support document develops the ROP demonstration for the Clark County Department of Environment and Sustainability (DES). The document summarizes the CCNAA 2017 and 2026 emissions inventory (Chapter 2), quantifies CCNAA emissions reductions from the 2017 base year to 2026 future year (Chapter 3), describes reasonable available control technology (RACT) that result in VOC emissions reductions (Chapter 4), and describes the planned local VOC emissions control measure (Chapter 5).

2.0 2017 and 2026 Ozone Season Day Emissions Inventory Summary

The CCNAA for the 2015 ozone NAAQS consists of the Las Vegas Valley, also known as HA 212. Figure 2-1 shows the Clark County boundary and HA 212 inside Clark County. For this analysis, DES developed the 2017 base year and 2026 future year emissions estimates (collectively referred to as the 2015 Ozone ROP SIP Inventory) for ozone precursors within HA 212 only. The figure also shows a grid boundary covering HA212 used to estimate certain emissions via modeling (e.g., on-road mobile sources). The source categories included in the 2015 Ozone ROP SIP Inventory include all anthropogenic emissions categories: stationary point sources, stationary nonpoint (area) sources, on-road mobile sources, nonroad mobile sources, airports, and locomotive sources.

DES used the nonpoint, locomotive, and nonroad emissions estimates from the EPA 2017 Emissions Modeling Platform (EMP)[1] inventory and 2016v3 EMP[2] to develop the 2015 Ozone ROP SIP Inventory. The emission inventory development methodology and results are described in Ramboll (2024). The nonpoint source category includes volatile consumer products (VCP), commercial combustion, asphalt paving, residential wood combustion, and other widespread area sources. The nonroad mobile sources include a wide variety of equipment types that either move under their own power or can be moved from site to site. The nonroad mobile source emissions estimates were derived in the 2016v3 EMP using the nonroad module of the MOVES model.

The 2016v3 EMP uses EPA's new approach and data to derive emissions for VCP sources; the 2017 EMP and previous emissions inventories included VCP emissions based on an older methodology. To obtain estimates based on a consistent methodology for the baseline and future year, DES linearly interpolated the 2016v3 EMP 2016 and 2023 VCP emissions for 2017 instead of using emissions from the 2017 EMP. The Sparse Matrix Operator Kernel Emissions (SMOKE) model was run with 4-km grid spacing (Figure 2-1) for July to generate ozone season weekday emissions estimates using annual nonpoint emissions and monthly nonroad emissions data. These data are organized by source classification code (SCC) in the FF10 flat data files. CCNAA nonpoint emissions are provided by SCC in Appendix A.

DES ran MOVES4 to generate the sub-county on-road emissions inventory for HA 212. DES developed an updated county-specific MOVES input database for 2017 and 2026 with the latest local input data. Sub-county vehicular activity inputs for HA 212 were also developed using either actual activity data or spatial surrogates. DES then ran MOVES4 with the database for only HA 212 to generate the CCNAA emissions estimates for the on-road source category.

Clark County's point source inventory includes all Title V stationary and all minor sources with the potential to emit at least 10 tons of VOCs, or 25 tons of NOx, located within HA 212. 2017 point source emissions inventories were obtained from 2017 annual reports submitted by individual stationary sources. The 2017 point sources emissions were developed from either data collected by direct on-site measurements or calculated emissions using EPA emissions factors and activities data. 2026 point source emissions were estimated by extrapolating from the 2017 emissions using growth factors derived from the Technical Support Document of Second Maintenance Plan for the 1997 8-hour Ozone NAAQS (DES, 2021). Aircraft emissions in the CCNAA were also included in the point source

[1] https://www.epa.gov/air-emissions-modeling/2017-emissions-modeling-platform, Accessed Online in May 2024.
[2] https://www.epa.gov/system/files/documents/2023-03/2016v3_EmisMod_TSD_January2023_1.pdf, Accessed Online in April 2024

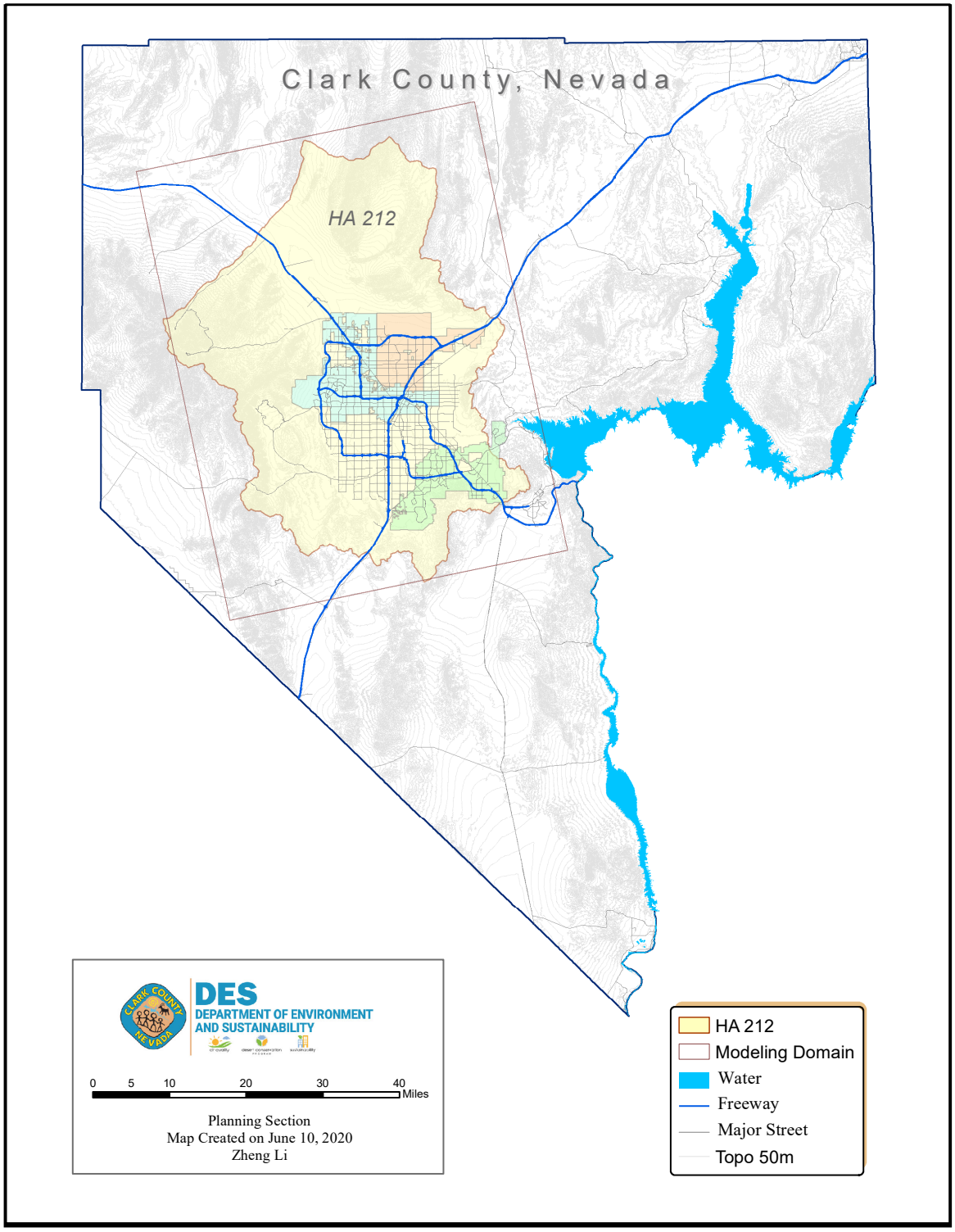

Figure 2-1. Clark County and Ozone Nonattainment Area (HA 212)

inventory. Airports within HA 212 cover commercial aviation (Harry Reid International Airport, North Las Vegas Airport, and Henderson Executive Airport) and Federal aviation (Nellis Air Force Base). Commercial aviation 2017 actual and 2023 and 2032 future year emissions were provided by the Clark County Department of Aviation (DOA); the 2026 emissions were estimated by interpolating from 2023 and 2032 emissions data. Federal aviation 2017 actual and 2026 projected emissions were obtained from Clark County's 1997 8-hour Ozone Second Maintenance Plan (DES, 2021); the 2026 emissions were estimated by interpolating from the 2023 and 2033 emissions data.

The CCNAA emissions inventory described above includes the effects on base and future year emissions of applicable on-the-books regulations such as the Tier 3 Motor Vehicle Emissions and Fuel Standards,[3] Final Rule for Control of Emissions of Air Pollution From Nonroad Diesel Engines and Fuel,[4] and Consumer Products: National Volatile Organic Compound Emissions Standards.[5]

Table 2-1 and Table 2-2 show 2017 and 2026 ozone precursor emissions estimates for the CCNAA (HA 212) by major source category representing a typical summertime weekday. On-road and nonroad mobile sources are the dominant emissions sources for NOx in 2017 followed by airports. The NOx emissions decline in the future year is primarily due to turnover in nonroad and on-road fleets. The nonpoint source category is the dominant anthropogenic emissions source for VOCs followed by on-road and nonroad mobile sources. The emissions from airports (commercial & federal) and locomotives source categories in these tables are estimated separately and excluded from the other source categories to avoid double counting.

Table 2-1. Summary of CCNAA summer weekday VOC emissions (tons per day (tpd)).

Source Category	2017 VOC	2026 VOC
Point source	1.25	1.35
Nonpoint source	57.72	61.69
On-road mobile	24.81	14.60
Nonroad mobile	24.03	24.25
Airports (commercial & Federal)	1.96	2.75
Locomotives	0.04	0.03
Emission Reduction Credits	-	0.05
Total	**109.81**	**104.72**

[3] https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-control-air-pollution-motor-vehicles-tier-3, Accessed Online in September 2022.
[4] https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-control-emissions-air-pollution-nonroad, Accessed Online in September 2022.
[5] https://www.epa.gov/stationary-sources-air-pollution/consumer-products-national-volatile-organic-compound-emission, Accessed Online in September 2022.

Table 2-2. Summary of CCNAA summer weekday NOx emissions (tpd).

Source Category	2017 NOx	2026 NOx
Point source	2.92	3.38
Nonpoint source	6.15	6.53
Onroad mobile	37.91	14.12
Nonroad mobile	36.98	19.10
Airports (commercial & Federal)	11.90	15.90
Locomotives	0.80	0.62
Emission Reduction Credits	-	0.92
Total	**96.66**	**60.57**

3.0 Summary of VOC Emissions Reductions

This section summarizes the CCNAA future year VOC emissions reductions from RACT and the planned local control measure to achieve the 15% VOC ROP requirement. Detailed descriptions of the RACT measures and planned local control measures are provided in Chapter 4 and Chapter 5, respectively.

Table 3-1 shows (i) the VOC emission reductions from 2017 baseline to 2026 future year CCNAA emissions inventories, (ii) estimated VOC emissions reductions for each RACT, (iii) planned local control measure VOC emission reductions, (iv) total VOC emission reductions, and (v) total VOC emission reductions relative to the CCNAA 2017 VOC emission inventory. Net emissions reductions from 2017 to 2026 are 16.66 tpd or 15.17%, indicating that the 15% ROP requirement can be met through implementation of the RACT and planned local control measure presented in this document.

DES projects that the CTG RACT requirements will become effective in early 2024. Efforts to finalize and adopt the AIM Coatings rule will follow closely thereafter in mid-2024. Once the rules become effective, DES expects compliance with the regulations to occur within one year, and full implementation of the rules will be reflected in the 2026 emissions inventory.

Table 3-1 CCNAA future year VOC emissions reductions .

Emission Reduction Type	Description	Future Year VOC Emission Reductions (tpd)
2017 – 2026 CCNAA VOC Emissions (see Table 2-1)	Point source	-0.10
	Nonpoint source	-3.97
	Onroad mobile	10.21
	Nonroad mobile	-0.22
	Airports (commercial & Federal)	-0.79
	Locomotives	0.01
	Emission Reduction Credits	-0.05
	Subtotals	***5.09***
Reasonable Available Control Technology	Metal and Plastic Parts Surface Coating	0.13
	Degreasing	0.33
	Industrial Adhesives	0.90
	Industrial Cleaning Solvents	3.74
	Graphic Arts	2.03
	Cutback Asphalt	0.62
	Subtotals	***7.75***
Local Control Measures	AIM Coatings OTC Model Rules: Phase I and Phase II	3.83
	Subtotals	***3.83***
Total Reductions		**16.67**
Percent Reduction Relative to 2017 CCNAA Anthropogenic VOC Emission Inventory		15.18

4.0 Reasonable Available Control Technology

This chapter summarizes the emissions reductions from the RACT analysis conducted by DES. The CAA requires moderate ozone nonattainment areas to implement RACT on certain stationary sources. The reclassification of HA 212 to moderate nonattainment area triggered RACT level controls within the CCNAA to reduce VOC emissions for any source category for which EPA has issued a Control Technique Guideline (CTG) document. EPA has issued a total of 46 CTG documents to date. Some documents address emissions control for more than one source category, while other documents update emissions control information addressed in older CTG documents. EPA recommends that air pollution control agencies adopt regulations that are consistent with the applicability thresholds and control level in these CTGs. The CAA also requires RACT for all major sources of ozone precursors within moderate ozone nonattainment areas.

DES has conducted a RACT analysis with detailed descriptions and will submit it to EPA as part of Clark County's RACT SIP. The emissions reductions resulting from the RACT requirement are creditable for the 15% ROP requirement.

In summary, DES reviewed the point and nonpoint emissions inventory for HA 212, business license information, minor and major New Source Review (NSR) permits, and conducted web searches to identify stationary sources that belong to CTG source categories. DES conducted this search for all issued VOC CTGs and reviewed each CTG source category group to determine if there is an operating stationary source in HA 212 such that a CTG RACT rule is needed for the source category. Based on the CTG source identification, DES will promulgate new air quality regulations for at least nine source categories:

1. Metal and Plastic Parts Surface Coating;
2. Degreasing Operations;
3. Industrial Adhesives;
4. Industrial Cleaning Solvents;
5. Graphic Arts;
6. Cutback Asphalt
7. Gasoline service stations and vapor balance systems
8. Bulk gas plants
9. Bulk gas terminals

Total estimated emissions reductions that DES projects from these CTG RACT requirements is 7.75 tpd of VOC for the CCNAA (DES, 2023) from six of the new rules. DES also found that no additional emissions reductions will result from three of the rules because they are already meeting the CTG RACT level of control (DES, 2023). Table 4-1 shows the VOC emissions reductions from the CTG RACT requirements for the CTG source categories. The CTG RACT requirements will become effective in early 2024.

Table 4-1. VOC emissions reductions from Clark County's CTG RACT requirement.

Source Category	VOC Emissions Reduction (tpd)
Metal and Plastic Parts Surface Coating	0.13
Degreasing	0.33
Industrial Adhesives	0.90
Industrial Cleaning Solvents	3.74
Graphic Arts	2.03
Cutback Asphalt	0.62
Total	**7.75**

5.0 Planned Local Control Measures

This chapter describes the planned local control measure that would be implemented in the CCNAA to facilitate compliance with the 15% VOC emissions reduction ROP requirement.

5.1 Architectural and Industrial Maintenance (AIM) Coatings

This section focuses on emissions reductions that are achievable for Architectural and Industrial Maintenance (AIM) coatings in the CCNAA. AIM coatings consist of surface coatings such as paint, primers, varnishes, or lacquers, as well as solvents used as thinners and for cleanup. During use, VOCs can be emitted due to the evaporation of the water-based or solvent-based liquid carriers used in these coatings. Table 5-1 summarizes key information for implementation of the control measure evaluated here: the OTC Model Rule for AIM coatings, Phases I and II. Specifically, Table 5-1 presents applicable emissions, emissions reductions, and cost-effectiveness for the CCNAA. The potential emission reductions following full implementation of the rule are reported in Table 5-1. NAA-level emissions, emissions reductions, and cost-effectiveness are described in more detail in the subsections below. The CCNAA future year 2026 emissions inventory is based on the EPA 2016v3 modeling platform. July average weekday emissions were estimated by running the SMOKE Modeling System with 2016v2 modeling platform spatial surrogates and temporal profiles to estimate CCNAA-specific emissions.[6]

Table 5-1. AIM coatings control measure summary.[a]

2026 Applicable Emissions Estimates	
NOx:	-
VOC:	7.05 tons/day
Control Measure Summary	
Future Year NOx Reduction:	-
Future Year VOC Reduction:	3.83 tons/day
Cost-effectiveness:	*Varies from $2,968 to $10,268/ton VOC*

[a] "-" indicate zero NOx emissions in the inventory and thus no emissions reductions.
[b] Calendar Year 2026 July average weekday inventory. Source: EPA 2016v3 modeling platform. Available at https://www.epa.gov/air-emissions-modeling/2016v3-platform, accessed in April 2024. The NAA is a subarea of Clark County; NAA specific emissions were estimated by allocating 2016v3 county-level emissions with 2016v3 spatial surrogates.

5.1.1 Applicable Source(s) Description

According to OTC Regulatory and Technical Guidelines, "Architectural Coating" refers to "a coating to be applied to stationary structures or their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. Coatings applied in shop applications or to non-stationary structures such as airplanes, ships, boats, railcars, and automobiles, as well as adhesives are not considered architectural coatings for the purposes of this rule" (OTC, 2011).

[6] https://www.epa.gov/air-emissions-modeling/2016v3-platform, accessed in April 2024.

"Industrial Maintenance Coating" refers to:

> *a high performance architectural coating, including primers, sealers, undercoaters, intermediate coats, and topcoats, formulated for application to substrates, including floors, exposed to one or more of the following extreme environmental conditions:*
>
> - *Immersion in water, wastewater, or chemical solutions (aqueous and non-aqueous solutions), or chronic exposures of interior surfaces to moisture condensation; or*
> - *Acute or chronic exposure to corrosive, caustic, or acidic agents, or to chemicals, chemical fumes, or chemical mixtures or solutions; or*
> - *Frequent exposure to temperatures above 121°C (250°F); or*
> - *Frequent heavy abrasion, including mechanical wear and frequent scrubbing with industrial solvents, cleansers, or scouring agents; or*
> - *Exterior exposure of metal structures and structural components. (OTC, 2011)*

VOCs are emitted from coatings and from the solvents used for thinners and clean-up products as the coatings dry. Table 5-2 lists the applicable SCCs for AIM Coatings in the Clark County area source inventory. AIM Coating emissions in the 2016v3 Modeling Platform emissions inventory were estimated in EPA's VCPy framework[7]. The VCPy framework is a complex calculation methodology with inputs such as 1) nationwide coating usage, 2) first-order product composition profiles to determine the fraction of coating used that may evaporate, 3) organic composition profiles to speciate potentially evaporative components, 4) compound and use specific volatilization assumptions, and 5) nation to county spatial allocation of emissions. Product usage is estimated for twelve product groupings (including paints and coating) using national-level shipment statistics, commodity prices, and producer price indices.

The first order and organic composition profiles are directly related to VOC content assumptions and therefore the control measure evaluated herein. For AIM coatings, the first-order product composition profile is taken from the California Air Resources Board's (CARB's) 2005 Architectural Coatings Survey[8]. The organic composition profile is taken from EPA's SPECIATEv5.0 database (profile 3141) for industrial coatings and from the CARB's modeling profiles for architectural coatings[9]. For the 2016v3 Modeling Platform, national emissions are disaggregated to states and counties based on spatial allocation factors such as human population, employment, etc. The spatial allocation factor for AIM coatings is human population.

Table 5-2. Applicable SCCs[10].

Description One	Description Two	Description Three	Description Four	SCC	2026 VOC Emissions (tons/year)
Solvent Utilization	Surface Utilization	Architectural Coatings	Total: All Solvent Types	2401001000	5.34
		Industrial Maintenance Coatings		2401100000	1.70
				Total	7.05

[7] Seltzer, K. M., Pennington, E., Rao, V., Murphy, B. N., Strum, M., Isaacs, K. K., and Pye, H. O. T.: Reactive organic carbon emissions from volatile chemical products, Atmos. Chem. Phys., 21, 5079-5100, https://doi.org/10.5194/acp-21-5079-2021, 2021a.

[8] https://ww2.arb.ca.gov/our-work/programs/coatings/architectural-coatings/architectural-coatings-survey, accessed in April 2024.

[9] https://ww2.arb.ca.gov/speciation-profiles-used-carb-modeling, accessed in April 2024.

[10] The base year for this analysis is 2017. 2017 emissions were estimated by linearly interpolating 2016v2 Modeling Platform 2016 and 2023 emissions, then running SMOKE at 4-km resolution to estimate emissions within the Clark County ozone nonattainment area.

5.1.2 Control Measure Description

The OTC developed two sets of model rules in 2002 (Phase I) and 2007 (Phase II) for reducing ozone precursor emissions and thereby reducing ground-level ozone in the Northeast and Mid-Atlantic regions. These model rules are intended for the states to consider in adopting control measures to reduce VOC emissions from AIM coatings. The rules recommend regulations for AIM coatings by limiting the VOC content in the products.

The EPA published the National Volatile Organize Compound Emissions Standards for Architectural Coatings ("National Rule") on September 11, 1998, under the authority of CAA Section 183(e) to regulate emissions of VOCs from architectural coatings that can contribute to ozone pollution. The EPA identified some OTC states as having shortfalls in meeting the one-hour ozone standard. Therefore, on June 1, 2000, the OTC adopted the "Memorandum of Understanding Among the States of the Ozone Transport Commission Regarding the Development of Specific Control Measures to Support Attainment and Maintenance of the Ozone National Ambient Air Quality Standards" (MOU) to develop control measures to facilitate emissions reductions. An AIM Coatings and Consumer Products Workgroup (Workgroup) was set up to develop an OTC model rule based on the national AIM coatings model rule being developed by the State and Territorial Air Pollution Program Administrators and the Association of Local Air Pollution Control Officials (STAPPA/ALAPCO) (OTC, 2001).

STAPPA/ALAPCO's rules are more stringent than the National Rule and the Workgroup elected to use STAPPA/ALAPCO's rules as a basis for their Phase I Model Rule with a few amendments (OTC, 2000). The amendments included using 350 g/L as the VOC content limit for Industrial Maintenance Coatings instead of the 250 g/L VOC content limit in the STAPPA/ALAPCO model rule due to the temperature and humidity in the Northeast (OTC, 2001). In addition, a separate category was created for conversion varnishes with a VOC content limit of 725 g/L, and a category was created for thermoplastic rubber coatings and mastics with a VOC content limit of 550 g/L, consistent with the National Rule (OTC, 2001).

The 2010 OTC Model Rule for AIM Coatings Phase II was based on suggested control measures from CARB's 2007 Model Rule, which CARB developed to provide guidance to local districts in California. The Phase II Model Rule was developed for states that require additional VOC emissions reductions to reach attainment with the ozone standard. Phase II revised the VOC content limits for many of the coating categories, increased the stringency of some standards, and improved the definitions for many of the coating categories (OTC 2011, OTC 2016). Minor revisions were made by the OTC Workgroup on October 13, 2014. Important changes in the Phase II model rule include:

- Eliminating 15 coating categories and sub-categories and combining them with other categories;
- Adding 12 coating categories;
- Lowering VOC limits on 12 coating categories (OTC, 2016).

Several states (Massachusetts, Maine, New Hampshire, New Jersey, Pennsylvania, and Virginia) and the District of Columbia have adopted only the Phase I Model Rule for AIM Coatings. Connecticut, Delaware, Maryland, New York, and Rhode Island have adopted both the Phase I and Phase II Model Rules for AIM Coatings.

The South Coast Air Quality Management District (SCAQMD) developed its own Rule 1113 for AIM Coatings. Rule 1113 was first adopted in September 1977 to limit the emissions of VOCs from architectural coatings used in the SCAQMD. It was last amended in February 2016. It is the most

stringent standard for AIM Coatings in the world and eliminates the use of many coating techniques (SCAQMD 2016a, SCAQMD 2016b, SCAQMD 2017). For example, while the OTC limit for concrete curing compounds is 350 g/L, the Rule 1113 limit is 100 g/L unless it is labeled for roads and bridges only, where it is 360 g/L (SCAQMD, 2016b). The Industrial Maintenance Coatings limit is 250 g/L for OTC, but 100 g/L for Rule 1113. The limit for Primers, Sealers, and Undercoaters is 200 g/L for OTC, but 100 g/L for Rule 1113. The limit for Stains is 250 g/L for OTC, but 100 g/L for Rule 1113 unless it is an interior stain which has a limit of 250 g/L. Waterproofing Concrete/Masonry Sealers have a limit of 400 g/L for OTC, but 100 g/L for Rule 1113. However, there is limited information to establish control efficiency and cost effectiveness for Rule 1113, and thus Rule 1113-based emissions reductions and cost are not estimated herein.

The detailed OTC Model Rules and Rule 1113 can be found in Table B1, B2 and B3 in the Appendix B.

Each OTC Model Rule phase and its estimated control efficiency are shown in Table 5-3. The control efficiency is relative to the inventory in compliance with the previous rule. The Technical Support Document (TSD) for the 2006 OTC Control Measure Evaluation estimated that the 2002 Model Rule can achieve 31% emissions reductions beyond the federal rule (OTC, 2007). The 31% emissions reduction estimate is based on the 1993 Industry Insights Survey for the National Paints and Coatings Association. The TSD published by OTC in 2016 estimated the percent reduction under the 2010 Model Rule to be 33.7% beyond the inventory in compliance with the 2002 Model Rule (OTC, 2016).

Table 5-3. Control efficiency estimates.

Control Measure	Control Efficiency (%)
OTC Model Rule for AIM Coatings Phase I	31.0
OTC Model Rule for AIM Coatings Phase II	33.7

5.1.3 Emissions Reductions

The current CCNAA VOC inventory represents the emissions from AIM coatings that are in compliance with the federal rule but does not reflect emissions reductions from more stringent rules, such as the OTC Model Rules. AIM coatings VOC emissions and emissions reductions in Clark County are presented in Table 5-4. To estimate emission reductions for OTC Model Rule Phase II, the control efficiency for OTC Model Rule Phase II in Table 5-3 is applied to emissions remaining after implementation of the OTC Model Rule Phase I; therefore, the percent reduction in Table 5-4 (23.3%) is lower than the control efficiency in Table 5-3 (33.7%). The OTC Model Rules for AIM coatings Phase I and II are estimated to achieve an overall VOC emissions reduction of 54.3%. The VOC emissions reductions are 3.83 tons/day for a future year based on the 2026 July average weekday inventory.

Table 5-4. CCNAA future year July average weekday emissions reductions.

Source	2026 Emissions (tons/day)	Control Measure	Percent Reduction	Future Year Emissions Reductions (tons/day)
AIM Coatings	7.05	OTC Model Rule for AIM Coatings Phase I (2002)	31.0%	2.19
		OTC Model Rule for AIM Coatings Phase II (2010)	23.3%	1.64
		Overall	**54.3%**	**3.83**

The OTC projected a 100% rule penetration and rule effectiveness for its rules based on "the compliance and distribution practices of this industry." (OTC, 2007) Thus, no further adjustment was made to these estimated emissions reductions.

5.1.4 Cost-effectiveness

Table 5-5 summarizes typical cost-effectiveness estimates and Table 5-6 shows estimated cost for the OTC Model Rule Phases. The cost-effectiveness was obtained from the Technical Support Documents published by the OTC accompanying the model rules (OTC 2007; OTC 2016). The cost-effectiveness is adjusted to the 2021-dollar value using the Consumer Price Index[11] to account for inflation.

Table 5-5. Typical cost-effectiveness for each control measure.

Control Measure	Cost-effectiveness (2021$/ton)	Reference
OTC Model Rule for AIM Coatings Phase I (2002)	$10,268	OTC, 2007
OTC Model Rule for AIM Coatings Phase II (2010)	$2,968	OTC, 2016
Overall across all phases	$7,129	Calculated

Table 5-6. Clark County annual cost of AIM coatings emissions reduction.

Source	Total Annual Cost (thousands of 2021$)
AIM coatings	9,940[a]

[a] Total cost of all Phases, calculated as 2023 July average weekday reduction * 365 days * cost effectiveness in $ per ton

5.1.5 Geographic Applicability

VOC emissions reductions for AIM coatings can be achieved in Clark County since AIM coatings are being used across the county.

5.1.6 Responsible Agency

The Clark County Division of Air Quality is responsible for enforcing SIP-approved control measures and other air permitting rules. The current requirement for AIM coatings is defined under Section 183(e) ("Ozone") of the Clean Air Act.

5.1.7 Implementation Schedule

After a new rule is promulgated, manufacturers are typically given time to comply with the new rule. The most recent OTC Model Rule is based on CARB's 2007 Coating Rule, amended in January 2007 which includes a three-year sell-through provision.

[11] https://www.bls.gov/cpi/data.htm, accessed in July 2022.

Efforts to finalize and adopt the AIM coating rule will take place in mid-2024. Once the rule becomes effective, DES will require full compliance by December 31, 2025, which provides an opportunity for the regulated community to use existing inventory before the compliance date.

5.1.8 Implementation Feasibility

The OTC Model Rules have been adopted by OTC members (Connecticut, Delaware, the District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Virginia). Other local agencies in California such as Antelope Valley Air Quality Management District and Mojave Desert Air Quality Management District have also adopted SCAQMD Rule 1113. Therefore, the rules can be applied to reduce emissions in Clark County.

5.1.9 Public Acceptance

VOC emissions from the use of AIM coatings can cause or contribute to ozone levels that violate NAAQS for ozone. AIM coatings control measures evaluated herein are very cost-effective and therefore may be acceptable to the public. There may be local businesses or distributors who may have a negative perception of these requirements because their product costs and/or business processes may be impacted by these requirements.

6.0 References

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Appendix A Clark County Nonattainment Area Nonpoint Emissions by SCC

Appendix A Clark County Nonattainment Area Nonpoint Emissions by SCC

Table A1. CCNAA nonpoint emissions by SCC.

SCC	SCC Description	2017 (tpd)		2026 (tpd)	
		NOX	VOC	NOX	VOC
2102002000	Stationary Source Fuel Combustion; Industrial; Bituminous/Subbituminous Coal; Total: All Boiler Types	0.2112	0.0010	0.1813	0.0008
2102004001	Stationary Source Fuel Combustion; Industrial; Distillate Oil; All Boiler Types	0.1089	0.0011	0.1366	0.0014
2102004002	Stationary Source Fuel Combustion; Industrial; Distillate Oil; All IC Engine Types	2.1933	0.1525	2.7510	0.1913
2102006000	Stationary Source Fuel Combustion; Industrial; Natural Gas; Total: Boilers and IC Engines	0.9840	0.0541	0.9923	0.0683
2102007000	Stationary Source Fuel Combustion; Industrial; Liquified Petroleum Gas (LPG); Total: All Boiler Types	0.0656	0.0024	0.0075	0.0003
2102008000	Stationary Source Fuel Combustion; Industrial; Wood; Total: All Boiler Types	0.0229	0.0018	0.0224	0.0017
2103004001	Stationary Source Fuel Combustion; Commercial/Institutional; Distillate Oil; Boilers	0.0007	<0.0001	0.0007	<0.0001
2103004002	Stationary Source Fuel Combustion; Commercial/Institutional; Distillate Oil; IC Engines	0.0011	0.0001	0.0011	0.0001
2103006000	Stationary Source Fuel Combustion; Commercial/Institutional; Natural Gas; Total: Boilers and IC Engines	1.9344	0.1064	1.8027	0.1158
2103007000	Stationary Source Fuel Combustion; Commercial/Institutional; Liquified Petroleum Gas (LPG); Total: All Combustor Types	0.0750	0.0027	0.0750	0.0027
2103008000	Stationary Source Fuel Combustion; Commercial/Institutional; Wood; Total: All Boiler Types	0.0373	0.0029	0.0372	0.0029
2103011000	Stationary Source Fuel Combustion; Commercial/Institutional; Kerosene; Total: All Combustor Types	0.0005	<0.0001	0.0005	<0.0001

SCC	SCC Description	2017 (tpd)		2026 (tpd)	
		NOX	VOC	NOX	VOC
2104004000	Stationary Source Fuel Combustion; Residential; Distillate Oil; Total: All Combustor Types	0.0002	<0.0001	0.0002	<0.0001
2104006000	Stationary Source Fuel Combustion; Residential; Natural Gas; Total: All Combustor Types	0.2233	0.0131	0.2233	0.0131
2104007000	Stationary Source Fuel Combustion; Residential; Liquified Petroleum Gas (LPG); Total: All Combustor Types	0.0065	0.0003	0.0065	0.0003
2104008610	Stationary Source Fuel Combustion; Residential; Wood; Hydronic heater: outdoor	0.0002	0.0068	0.0002	0.0069
2104008620	Stationary Source Fuel Combustion; Residential; Wood; Hydronic heater: indoor	0.0001	0.0043	0.0001	0.0044
2104008630	Stationary Source Fuel Combustion; Residential; Wood; Hydronic heater: pellet-fired	<0.0001	<0.0001	<0.0001	<0.0001
2104008700	Stationary Source Fuel Combustion; Residential; Wood; Outdoor wood burning device, NEC (fire-pits, chimneys, etc.)	0.0541	0.3934	0.0611	0.4438
2285002006	Mobile Sources; Railroad Equipment; Diesel; Line Haul Locomotives: Class I Operations	0.7936	0.0366	0.6131	0.0254
2285002007	Mobile Sources; Railroad Equipment; Diesel; Line Haul Locomotives: Class II / III Operations	0.0046	0.0002	0.0047	0.0002
2302002100	Industrial Processes; Food and Kindred Products: SIC 20; Commercial Cooking - Charbroiling; Conveyorized Charbroiling	--	0.0659	--	0.0781
2302002200	Industrial Processes; Food and Kindred Products: SIC 20; Commercial Cooking - Charbroiling; Under-fired Charbroiling	--	0.2243	--	0.2657
2302003000	Industrial Processes; Food and Kindred Products: SIC 20; Commercial Cooking - Frying; Deep Fat Frying	--	0.0472	--	0.0559
2302003100	Industrial Processes; Food and Kindred Products: SIC 20; Commercial Cooking - Frying; Flat Griddle Frying	--	0.0290	--	0.0344
2302003200	Industrial Processes; Food and Kindred Products: SIC 20; Commercial Cooking - Frying; Clamshell Griddle Frying	--	0.0015	--	0.0018

SCC	SCC Description	2017 (tpd)		2026 (tpd)	
		NOX	VOC	NOX	VOC
2401001000[a]	Architectural Coatings	--	4.8222	--	5.3425
2401005000	Auto Refinishing: SIC 7532	--	0.4317	--	0.4822
2401008000	Traffic Markings	--	0.8299	--	0.7194
2401015000	Factory Finished Wood: SIC 2426 thru 242	--	0.0075	--	0.0088
2401020000	Wood Furniture: SIC 25	--	0.1210	--	0.1402
2401025000	Metal Furniture: SIC 25	--	0.1522	--	0.1763
2401030000	Paper: SIC 26	--	0.0008	--	0.0010
2401055000	Machinery and Equipment: SIC 35	--	0.0143	--	0.0165
2401065000	Electronic and Other Electrical: SIC 36 - 363	--	0.0458	--	0.0530
2401070000	Motor Vehicles: SIC 371	--	0.0161	--	0.0193
2401075000	Aircraft: SIC 372	--	0.0003	--	0.0004
2401090000	Surface Coating: Miscellaneous Manufacturing	--	0.1087	--	0.1266
2401100000[a]	Industrial Maintenance Coatings	--	1.4639	--	1.7057
2401200000	Other Special Purpose Coatings	--	0.6791	--	0.7914
2415000000	Degreasing: All Processes/All Industries	--	0.6300	--	0.6256
2420000000	Dry Cleaning	--	0.0325	--	0.0326

SCC	SCC Description	2017 (tpd)		2026 (tpd)	
		NOX	VOC	NOX	VOC
2425000000	Graphic Arts	--	2.2024	--	2.5514
2460030999	C&C: Lighter Fluid, Fire Starter, Other Fuels	--	0.1308	--	0.1494
2460100000	C&C: Personal Care Products	--	8.7457	--	9.9864
2460200000	C&C: Household Products	--	6.6442	--	7.5867
2460400000	C&C: Automotive Aftermarket Products	--	0.8215	--	0.9380
2460500000	C&C: Coatings and Related Products	--	6.5223	--	7.4476
2460600000	C&C: Adhesives and Sealants	--	5.7803	--	6.6003
2460800000	C&C: FIFRA Related Products	--	0.4702	--	0.5369
2460900000	C&C: Miscellaneous Products (Not Otherwise Covered)	--	0.1100	--	0.1256
2461021000	Cutback Asphalt	--	0.8300	--	0.7767
2461022000	Emulsified Asphalt	--	3.3588	--	3.1428
2461850000	Pesticide Application: Agricultural	--	0.0037	--	0.0001
2501011011	Storage and Transport; Petroleum and Petroleum Product Storage; Residential Portable Gas Cans; Permeation	--	0.2020	--	0.2393
2501011012	Storage and Transport; Petroleum and Petroleum Product Storage; Residential Portable Gas Cans; Evaporation (includes Diurnal losses)	--	0.2267	--	0.2685
2501011013	Storage and Transport; Petroleum and Petroleum Product Storage; Residential Portable Gas Cans; Spillage During Transport	--	0.2808	--	0.3327

SCC	SCC Description	2017 (tpd)		2026 (tpd)	
		NOX	VOC	NOX	VOC
2501011014	Storage and Transport; Petroleum and Petroleum Product Storage; Residential Portable Gas Cans; Refilling at the Pump - Vapor Displacement	--	0.0577	--	0.0683
2501011015	Storage and Transport; Petroleum and Petroleum Product Storage; Residential Portable Gas Cans; Refilling at the Pump - Spillage	--	0.0083	--	0.0098
2501012011	Storage and Transport; Petroleum and Petroleum Product Storage; Commercial Portable Gas Cans; Permeation	--	0.0097	--	0.0115
2501012012	Storage and Transport; Petroleum and Petroleum Product Storage; Commercial Portable Gas Cans; Evaporation (includes Diurnal losses)	--	0.0080	--	0.0095
2501012013	Storage and Transport; Petroleum and Petroleum Product Storage; Commercial Portable Gas Cans; Spillage During Transport	--	0.5030	--	0.5960
2501012014	Storage and Transport; Petroleum and Petroleum Product Storage; Commercial Portable Gas Cans; Refilling at the Pump - Vapor Displacement	--	0.2181	--	0.2584
2501012015	Storage and Transport; Petroleum and Petroleum Product Storage; Commercial Portable Gas Cans; Refilling at the Pump - Spillage	--	0.0210	--	0.0249
2501050120	Storage and Transport; Petroleum and Petroleum Product Storage; Bulk Terminals: All Evaporative Losses; Gasoline	--	1.2891	--	1.0622
2501055120	Storage and Transport; Petroleum and Petroleum Product Storage; Bulk Plants: All Evaporative Losses; Gasoline	--	0.0003	--	0.0002
2501060051	Storage and Transport; Petroleum and Petroleum Product Storage; Gasoline Service Stations; Stage 1: Submerged Filling	--	5.5886	--	4.4738
2501060053	Storage and Transport; Petroleum and Petroleum Product Storage; Gasoline Service Stations; Stage 1: Balanced Submerged Filling	--	0.2157	--	0.1726

SCC	SCC Description	2017 (tpd)		2026 (tpd)	
		NOX	VOC	NOX	VOC
2501060201	Storage and Transport; Petroleum and Petroleum Product Storage; Gasoline Service Stations; Underground Tank: Breathing and Emptying	--	1.0519	--	0.8421
2501080050	Storage and Transport; Petroleum and Petroleum Product Storage; Airports : Aviation Gasoline; Stage 1: Total	--	0.3451	--	0.3320
2501080100	Storage and Transport; Petroleum and Petroleum Product Storage; Airports : Aviation Gasoline; Stage 2: Total	--	0.0004	--	0.0004
2505030120	Storage and Transport; Petroleum and Petroleum Product Transport; Truck; Gasoline	--	0.0706	--	0.0588
2505040120	Storage and Transport; Petroleum and Petroleum Product Transport; Pipeline; Gasoline	--	0.1018	--	0.0839
2610000500	Waste Disposal, Treatment, and Recovery; Open Burning; All Categories; Land Clearing Debris (use 28-10-005-000 for Logging Debris Burning)	0.1672	0.4723	0.1672	0.4723
2610030000	Waste Disposal, Treatment, and Recovery; Open Burning; Residential; Household Waste (use 26-10-000-xxx for Yard Wastes)	0.0188	0.0196	0.0188	0.0196
2630020000	Waste Disposal, Treatment, and Recovery; Wastewater Treatment; Public Owned; Total Processed	--	0.0757	--	0.0896
2680003000	Waste Disposal, Treatment, and Recovery; Composting; 100% Green Waste (e.g., residential or municipal yard wastes); All Processes	--	0.7757	--	0.7757
2805002000	Miscellaneous Area Sources; Agriculture Production - Livestock; Beef cattle production composite; Not Elsewhere Classified	--	0.0019	--	0.0019
2805007100	Miscellaneous Area Sources; Agriculture Production - Livestock; Poultry Waste; Poultry Production - Layers with Dry Manure Management Systems: Confinement	--	<0.0001	--	<0.0001
2805009100	Miscellaneous Area Sources; Agriculture Production - Livestock; Poultry production - broilers; Confinement	--	<0.0001	--	<0.0001
2805010100	Miscellaneous Area Sources; Agriculture Production - Livestock; Poultry production - turkeys; Confinement	--	<0.0001	--	<0.0001

SCC	SCC Description	2017 (tpd)		2026 (tpd)	
		NOX	VOC	NOX	VOC
2805018000	Miscellaneous Area Sources; Agriculture Production - Livestock; Dairy cattle composite; Not Elsewhere Classified	--	<0.0001	--	<0.0001
2805025000	Miscellaneous Area Sources; Agriculture Production - Livestock; Swine production composite; Not Elsewhere Classified (see also 28-05-039, -047, -053)	--	<0.0001	--	<0.0001
2805035000	Miscellaneous Area Sources; Agriculture Production - Livestock; Horses and Ponies Waste Emissions; Not Elsewhere Classified	--	0.0003	--	0.0003
2805040000	Miscellaneous Area Sources; Agriculture Production - Livestock; Sheep and Lambs Waste Emissions; Total	--	<0.0001	--	<0.0001
2805045000	Miscellaneous Area Sources; Agriculture Production - Livestock; Goats Waste Emissions; Not Elsewhere Classified	--	<0.0001	--	<0.0001
2810025000	Miscellaneous Area Sources; Other Combustion; Residential Grilling (see 23-02-002-xxx for Commercial); Total	0.0362	0.0960	0.0429	0.1138
2810060100	Miscellaneous Area Sources; Other Combustion; Cremation; Humans	0.0048	0.0004	0.0056	0.0005
2810060200	Miscellaneous Area Sources; Other Combustion; Cremation; Animals	<0.0001	<0.0001	<0.0001	<0.0001
Totals		**6.9445**	**57.7641**	**7.1522**	**61.7171**

[a] AIM Coatings SCCs

Appendix B Architectural and Industrial Maintenance (AIM) Coatings: VOC Content Limits

Appendix B Architectural and Industrial Maintenance (AIM) Coatings: VOC Content Limits

Table B1. OTC Model Rule Phase I and Phase II VOC Content Limits for AIM Coatings.

Coating Category	VOC Content Limit (grams per liter) Phase I[1]	VOC Content Limit (grams per liter) Phase II[2]
Flat Coatings	100	50
Nonflat Coatings	150	100
Nonflat – High Gloss Coatings	250	150
Specialty Coatings		
Aluminum Roof	N/A	450
Antenna Coatings	530	N/A
Antifouling Coatings	400	N/A
Basement Specialty Coatings	N/A	400
Bituminous Roof Coating	300	270
Bituminous Roof Primers	350	350
Bond Breakers	350	350
Calcimine Recoaters	475	475
Clear Wood Coatings		
• Clear Bushing Lacquers	680	N/A
• Conversion Varnishes	725	
• Lacquers (including lacquer sanding sealers)	550	
• Sanding Sealers (other than lacquer sanding sealers)	350	
• Varnishes	350	
Concrete Curing Compounds	350	350-
Concrete/Masonry	N/A	100
Concrete Surface Retarders	780	780
Conjugated Oil Varnishes	N/A	450
Conversion Varnish	725	725
Driveway Sealers	N/A	50
Dry Fog Coatings	400	150
Faux Finishing Coatings	350	350
Fire Resistive Coatings	350	350

Coating Category	VOC Content Limit (grams per liter) Phase I[1]	VOC Content Limit (grams per liter) Phase II[2]
Fire Retardant Coatings		
• Clear	650	N/A
• Opaque	350	
Floor Coatings	250	100
Flow Coatings	420	N/A
Form-Release Compounds	250	250
Graphic Arts Coatings (Sign Paints)	500	500
High Temperature Coatings	420	420
Impacted Immersion Coatings	780	780
Industrial Maintenance Coatings	340	250
Low-Solids Coatings	120	120
Magnesite Cement Coatings	450	450
Mastic Texture Coatings	300	100
Metallic Pigmented Coatings	500	500
Multi-Color Coatings	250	250
Nuclear Coatings	450	450
Pre-Treatment Wash Primers	420	420
Primers, Sealers, and Undercoaters	200	100
Quick-Dry Enamels	250	N/A
Quick-Dry Primers, Sealers, and Undercoaters	200	N/A
Reactive Penetrating Sealer	N/A	350
Reactive Penetrating Carbonate Stone Sealer	N/A	500
Recycled Coatings	250	250
Roof Coatings	250	250
Rust Preventative Coatings	400	250
Shellacs		
• Clear	730	730
• Opaque	550	550

Coating Category	VOC Content Limit (grams per liter) Phase I[1]	VOC Content Limit (grams per liter) Phase II[2]
Specialty Primers, Sealers, and Undercoaters	350	100
Stains	250	250
Stone Consolidant	N/A	450
Swimming Pool Coatings	340	340
Swimming Pool Repair and Maintenance Coatings	340	N/A
Temperature-Indicator Safety Coatings	550	N/A
Thermoplastic Rubber Coatings and Mastics	550	550
Traffic Marking Coatings	150	100
Tub and Tile Refinish	N/A	420
Waterproofing Membranes	N/A	250
Waterproofing Sealers	250	N/A
Waterproofing Concrete/Masonry	400	N/A
Wood Coatings	N/A	275
Wood Preservatives	350	350
Zinc-Rich Primer	N/A	340

[1] N/A for Phase I limits indicates that the relevant source category was not controlled as part of the OTC Phase I rule, or several limits from Phase I were combined into a new source category for Phase II

[2] N/A for Phase II limits indicates that the relevant source category emission limit was not included in Phase II, because it was combined into a new source category (e.g., Clear Wood Coatings were controlled at separate limits in Phase I and all combined in Wood Coatings with one limit in Phase II)

Table B2. SCAQMD Rule 1113 VOC Limits as of February 5, 2016.

Coating Category	Current Limit[1]	Effective Date			Small Container Exemption
		1/1/2014	2/5/2016	1/1/2019	
Bond Breakers	350				✓
Building Envelope Coatings	100			50	✓
Concrete-Curing Compounds	100				✓
Concrete-Curing Compounds (For Roadways and Bridges[2])	350				✓[3]
Concrete Surface Retarder	50	50			✓
Default	50	50			✓

Coating Category	Current Limit[1]	Effective Date			Small Container Exemption
		1/1/2014	2/5/2016	1/1/2019	
Driveway Sealer	50				✓
Dry-Fog Coatings	50	50			✓
Faux Finishing Coatings					
• Clear Topcoat	100	100			✓
• Decorative Coatings	350				✓
• Glazes	350				✓
• Japan	350				✓
• Trowel Applied Coatings	50	50			✓
Fire-Proofing Coatings	150	150			✓
Flats	50				✓[5]
Floor Coatings	50				✓
Form Release Compound	100	100			✓
Graphic Arts (Sign) Coatings	200	150	200		✓
Industrial Maintenance (IM) Coatings	100				✓[5]
• Color Indicating Safety Coatings	480				✓[5]
• High Temperature IM Coatings	420				✓[5]
• Non-Sacrificial Anti-Graffiti Coatings	100				✓[5]
• Zinc-Rich IM Primers	100				✓[5]
Magnesite Cement Coatings	450				✓[3]
Mastic Coatings	100	100			✓
Metallic Pigmented Coatings	150	150			✓
Multi-Color Coatings	250				✓[3]
Nonflat Coatings	50				✓[5]
Pre-Treatment Wash Primers	420				✓[3]
Primers, Sealers, and Undercoaters	100				✓
Reactive Penetrating Sealers	350				✓[4]
Recycled Coatings	250			150	✓
Roof Coatings	50				✓
• Roof Coatings, Aluminum	100				✓
Roof Primers, Bituminous	350				✓[3]
Rust Preventative Coatings	100				✓[6]
Sacrificial Anti-Graffiti Coatings	50				✓[3]
Shellac					

Coating Category	Current Limit[1]	Effective Date			Small Container Exemption
		1/1/2014	2/5/2016	1/1/2019	
• Clear	730				✓[4]
• Pigmented	550				✓[4]
Specialty Primers	100				✓
Stains	100				✓
• Stains, Interior	250				✓
Stone Consolidants	450				✓[3]
Swimming Pool Coatings					
• Repair	340				✓[3]
• Other	340				✓[3]
Tile and Stone Sealers	100				✓
Traffic Coatings	100				✓
Tub and Tile Refinishing Coatings	420				✓[4]
Waterproofing Sealers	100				✓
Waterproofing Concrete/Masonry Sealers	100				✓
Wood Coatings	275				
• Varnish	275				
• Sanding Sealers	275				
• Lacquer	275				
Wood Conditioners	100				
Wood Preservatives					
• Below-Ground	350				✓[3]
• Other	350				✓[3]
Low-Solids Coating	120				
Architectural Coatings, excluding IM Coatings	50				
Solvent-Based IM	600				
Waterborne IM	50				

[1] The specified limits remain in effect unless revised limits are listed in subsequent columns in the Table of Standards.
[2] Does not include compounds used for curbs and gutters, sidewalks, islands, driveways and other miscellaneous concrete areas.
[3] Effective 02/05/2016, the small container exemption no longer applies per (f)(1).
[4] Effective 01/01/2018, the small container exemption no longer applies per (f)(1).
[5] Effective 01/01/2018, the small container exemption is further restricted per (f)(1).
[6] Effective 01/01/2018, the small container exemption is further restricted per (f)(1).