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**Socio-Economic Impact Study:  
Proposed Amendment to Regulation 8, Rule 32  
Wood Products Coatings**

Submitted to:  
Bay Area Air Quality Management District

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# Executive Summary

The Bay Area Air Quality Management District (BAAQMD) regulates emissions from volatile organic compounds (VOC) associated with wood coatings through Regulation 8, Rule 32: Wood Products Coatings (Regulation 8-32). Currently, the BAAQMD is proposing to amend Regulation 8-32, to further reduce VOC emissions from several types of wood coatings to achieve a reduction of 0.45 tons per day (tpd), or about 30 percent, from Bay Area regional wood coating emissions.

## Socio-Economic Impacts

In order to estimate the economic impacts of amending Rule 8-32 on the affected industries, this report compares the industry's annualized compliance costs with its profit ratios. The analysis uses data from the BAAQMD, US Census County Business Patterns, the IRS, and Dun and Bradstreet, a private data vendor.

### ***Economic Profile of Affected Industries***

The BAAQMD identifies the affected industries as Wood Window and Door Manufacturing (NAICS 321911); Other Millwork (Including Flooring) (NAICS 321918); All Other Miscellaneous Wood Product Manufacturing (NAICS 321999); Wood Kitchen Cabinet and Countertop Manufacturing (NAICS 337110); Upholstered and Non-upholstered Wood Household Furniture Manufacturing (NAICS 337121 & 337122); Institutional Furniture (NAICS 337127); Wood Television, Radio, and Sewing Machine Cabinet Manufacturing (NAICS 337129); Wood Office Furniture Manufacturing (NAICS 337211); Custom Architectural Woodwork and Millwork Manufacturing (NAICS 337212); Showcase Partition Shelving and Locker Manufacturing (NAICS 337215); and Re-upholstery and Furniture Repair (NAICS 811420). According to BAAQMD, there are 647 manufacturers and repairers in the region that would be subject to the proposed amendment. However, as BAAQMD staff indicates that the smallest 389 firms are exempt from the rule, the amendments only affect 258 firms.

### ***Economic Impacts to Affected Industries***

IRS data indicate that firms in the wood products coatings sectors, which includes the affected industry, earn 4.9 percent profits on total revenue, resulting in total industry net profits of \$32.7 million. For the 258 firms that use over 20 gallons per year of wood coatings, and will have to comply with the amended regulations, the total profits are \$30.0 million. Compliance costs associated with amending Rule 8-32 were calculated based on data provided by the BAAQMD and California Air Resources Board (ARB), as well as the IRS and Dun & Bradstreet. The total annualized compliance costs will be approximately \$1.8 million. Dividing the compliance costs (\$1.8 million) by annual profits of firms that will have to comply with the amended rules (\$30.0 million) shows that the proposed Rule will result in a 6.1 percent reduction in firm profits, which is below the ARB's 10 percent threshold used to determine cost burden.

### ***Economic Impacts to Consumers***

Although the impacts to the industry are not significantly high, consumers will likely bear a portion of the cost burden. Since customers indirectly purchase wood coatings when purchasing cabinets, furniture, and other wood products, they will likely incur higher costs for the goods they purchase that require higher cost coatings. However, as there are currently products on the market in compliance with the proposed amendment, in order to remain competitive, manufacturers may not be able to pass all of the costs on to the consumers and would likely need to absorb some of the associated costs.

### ***Regional Employment, Indirect, and Induced Impacts***

Since on average, the proposed amendment to Rule 8-32 would not result in significant economic impacts to firms within the affected industries, and consumers will likely bear some portion of the cost burden, the proposed amendment would not impact affected industry or regional employment.

## **Impacts to Small Businesses**

Using the California Government Code 14835's definition of a small business, approximately 97 percent of all affected firms are small businesses. However, as this analysis projects that compliance costs are small enough not to significantly impact profitability, amending Rule 8-32 would not adversely impact small businesses.

## Description of Proposed Rule

Since 1983, the Bay Area Air Quality Management District (BAAQMD) has regulated emissions from volatile organic compounds (VOC) associated with wood coatings through Regulation 8, Rule 32: Wood Products Coatings (Regulation 8-32). Regulation 8-32, which has been amended three times since its adoption, sets VOC limits on all coatings used on wood products, which include furniture, bathroom vanities, kitchen cabinets, picture frames, outdoor speakers, architectural millwork, and others. Regulation 8-32 also establishes standards for wood surface preparation and for the application of coatings.<sup>1</sup>

BAAQMD proposes to amend Regulation 8-32 to further reduce VOC emissions from the application of wood coatings by lowering VOC limits for sealers, fillers, wash-coats, and stains to match standards recently set by several other California air districts. In addition to reducing VOC emissions, proposed alternate VOC limits and revised categories allow for flexibility in compliance. The proposed VOC limits for different coating categories are presented in Table 1.

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<sup>1</sup> BAAQMD Regulation 8, Rule 32 Workshop Report, 2009.

**Table 1: Proposed Coating Categories and VOC Limits**

Coating Category	Proposed VOC Limits								
	General Wood Products			Furniture, Custom Cabinets and Millwork			Custom Furniture		
	g/l	#/gal	g/g	g/l	#/gal	g/g	g/l	#/gal	g/g
<b>High Solids</b>									
Clear Sealer	275	2.3	0.36	275	2.3	0.36	275	2.3	0.36
Clear Topcoat	275	2.3	0.35	275	2.3	0.35	550	4.6	0.70
Conversion Varnish	275	2.3	0.60	550	4.6	1.20	550	4.6	1.20
Sanding Sealer	-	-	-	-	-	-	-	-	-
Pigmented Coating	-	-	-	-	-	-	-	-	-
Pigmented Primer, Sealer, & Undercoater	275	2.3	0.21	275	2.3	0.21	275	2.3	0.21
Pigmented Topcoat	275	2.3	0.25	275	2.3	0.25	275	2.3	0.25
Multicolored Coating	-	-	-	275	2.3	0.33	275	2.3	0.33
High Solids Stain	350	2.9	0.42	350	2.9	0.42	350	2.9	0.42
Filler	275	2.3	0.18	275	2.3	0.18	275	2.3	0.18
<b>Low Solids</b>									
Low Solids Stain	120	1.0	-	120	1.0	-	120	1.0	-
Toner and Wash-coat	120	1.0	-	120	1.0	-	120	1.0	-

Notes:

(a) Measurements:

g/l = grams VOC per liter of coating

#/gal = pounds VOC per gallon of coating

g/g = grams VOC per gram of solids in the coating

(b) Coating compliance may met by meeting any alternative limits.

Sources: BAAQMD; BAE, 2009.

In addition to setting VOC limits based on coating volume, the proposed amendments would allow for alternative VOC standards based on the coating solids content. The proposed category revisions, shown above, split the original category of sanding sealers into clear and pigmented sealers; in addition, pigmented topcoats are differentiated from pigmented primers, sealers, and undercoats. Manufacturers would be able to comply with VOC limits by meeting either the limits listed in grams per liter (or pounds per gallon), or the alternative limits listed in grams per gram solid.

These amendments would make Regulation 8-32 consistent with the categories and limits of South Coast AQMD Rule 1136, and manufacturers would need to begin producing compliant products by 2010. Currently, VOC emissions from the application, surface preparation, and cleanup of wood coatings in the Bay Area total 1.48 tons per day (tpd). The proposed amendments to Rule 8-32 would achieve a reduction in VOC emissions of 0.45 tpd or about 30 percent of the Bay Area's wood coating emissions.

# Regional Trends

This section provides background information on the demographic and economic trends for the San Francisco Bay Area, which represents the BAAQMD’s District. The San Francisco Bay Area includes Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties. Regional trends are compared to statewide demographic and economic patterns since 2000, in order to show the region’s unique characteristics relative to the State.

## Regional Demographic Trends

Table 2 shows the population and household trends for the nine county Bay Area and California between 2000 and 2009. During this time, the Bay Area’s population increased by 8.7 percent, compared to 13 percent in California. Likewise, the number of Bay Area households grew by 7.7 percent, compared to a 10.7 percent statewide increase.

**Table 2: Population and Household Trends, 2000-2009**

<b>Bay Area (a)</b>	<b>2000</b>	<b>2009 (est.)</b>	<b>Total Change 2000-2009</b>	<b>Percent Change 2000-2009</b>
<b>Population</b>	6,784,348	7,375,678	591,330	8.7%
<b>Households</b>	2,465,915	2,656,487	190,572	7.7%
<b>Average Household Size</b>	2.75	2.78		
<b>California</b>				
<b>Population</b>	33,873,086	38,292,687	4,419,601	13.0%
<b>Households</b>	11,504,315	12,733,414	1,229,099	10.7%
<b>Average Household Size</b>	2.87	2.94		

Note:

(a) Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties.

Sources: California, Department of Finance, 2009; BAE 2009.

The slower growth in the Bay Area is related to its relatively built out environment, compared to the state overall. While Central Valley locations, such as the Sacramento region, experienced large increases in the number of housing units, the Bay Area, which was relatively built out before the housing boom, only experienced moderate increases in housing units.

## Regional Economic Trends

In the five-year period between the third quarters of 2003 and 2008, the Bay Area's economic base grew by 4.7 percent, increasing from 3.18 million jobs to 3.33 million jobs. This growth closely reflects the slightly slower growth of the State, which grew by 4.6 percent in the same time period.

Manufacturing, Retail Trade, and Professional, Scientific, and Technical Services, the largest private (non-government) sectors in the Bay Area's economy, each constituted 10 percent of the region's total jobs in 2007. Over the five-year period the Manufacturing sector lost three percent of its jobs, while the Retail Trade sector was relatively stagnant, experiencing no growth. However, during this period, the Professional, Scientific, and Technical Services sector grew by 10 percent.

Statewide, the Manufacturing sector declined by seven percent while Retail Trade and Professional, Scientific, and Technical Services grew by three and 19 percent, respectively. Overall, the Bay Area's economic base reflects the state's base, sharing a similar distribution of employment across sectors. Table 3 shows the jobs by sector in 2003 and 2008. The affected industries, consisting of millwork and wood furniture manufacturing, belong to the Manufacturing sector, with some furniture repair jobs categorized under Other Services. While manufacturing represents a relatively large portion of the region's job base, employment contracted between 2003 and 2008.



**Table 3: Jobs by Sector, 2003-2008 (a)**

Industry Sector	Bay Area					California				
	Q3 2003 (b)		Q3 2008 (c)		% Change 2003-2008	Q3 2003 (b)		Q3 2008 (c)		% Change 2003-2008
	Jobs	% Total	Jobs	% Total		Jobs	% Total	Jobs	% Total	
Agriculture, Forestry, Fishing and Hunting	19,710	1%	20,990	1%	6%	435,282	3%	448,097	3%	3%
Mining	1,688	0%	1,060	0%	-37%	20,308	0%	26,791	0%	32%
Construction	182,168	6%	181,383	5%	0%	806,164	5%	793,114	5%	-2%
Manufacturing	358,498	11%	346,556	10%	-3%	1,532,370	10%	1,427,559	9%	-7%
Utilities	4,805	0%	6,425	0%	34%	55,648	0%	58,723	0%	6%
Wholesale Trade	124,222	4%	128,846	4%	4%	647,417	4%	707,968	5%	9%
Retail Trade	331,679	10%	331,971	10%	0%	1,574,968	11%	1,622,336	10%	3%
Transportation and Warehousing	51,741	2%	54,406	2%	5%	407,146	3%	430,513	3%	6%
Information	116,002	4%	116,223	3%	0%	463,621	3%	471,166	3%	2%
Finance and Insurance	149,705	5%	135,911	4%	-9%	615,069	4%	568,835	4%	-8%
Real Estate and Rental and Leasing	61,896	2%	58,316	2%	-6%	275,684	2%	276,044	2%	0%
Professional, Scientific, and Technical Services	274,606	9%	346,065	10%	26%	906,003	6%	1,078,251	7%	19%
Management of Companies and Enterprises	67,300	2%	60,664	2%	-10%	254,353	2%	204,893	1%	-19%
Administrative and Waste Services	180,712	6%	187,467	6%	4%	958,972	6%	958,083	6%	0%
Educational Services	60,980	2%	72,604	2%	19%	217,082	1%	255,155	2%	18%
Health Care and Social Assistance	282,842	9%	306,056	9%	8%	1,269,971	9%	1,408,635	9%	11%
Arts, Entertainment, and Recreation	52,850	2%	55,341	2%	5%	247,286	2%	263,383	2%	7%
Accommodation and Food Services	255,817	8%	287,897	9%	13%	1,174,673	8%	1,325,229	9%	13%
Other Services, except Public Administration	139,584	4%	160,219	5%	15%	652,212	4%	745,729	5%	14%
Unclassified	231	0%	11,789	0%	5003%	46,183	0%	68,657	0%	49%
Government (d)	411,273	13%	419,880	13%	2%	2,218,003	15%	2,315,150	15%	4%
<b>Subtotal</b>	<b>3,128,309</b>	<b>98%</b>	<b>3,290,069</b>	<b>99%</b>	<b>5.2%</b>	<b>14,778,415</b>	<b>100%</b>	<b>15,454,311</b>	<b>100%</b>	<b>4.6%</b>
Additional Suppressed/Confidential Employment (e)	53,878	2%	41,338	1%		1	0%	7	0%	
<b>Total, All Employment</b>	<b>3,182,187</b>	<b>100%</b>	<b>3,331,407</b>	<b>100%</b>	<b>4.7%</b>	<b>14,778,416</b>	<b>100%</b>	<b>15,454,318</b>	<b>100%</b>	<b>4.6%</b>

Notes:

(a) Includes all wage and salary employment covered by unemployment insurance.

(b) Represents employment for third quarter, 2003.

(c) Represents employment for third quarter, 2008.

(d) Government employment includes workers in all local, state and Federal sectors, not just public administration. For example, all public school staff are in the Government category.

(e) Employment for some industries were suppressed by EDD due to the small number of firms reporting in the industry for a given jurisdiction.

Sources: California Employment Development Department, 2009; BAE, 2009.

## **Affected Industries**

According to the US Census, the Bay Area had 647 firms working in millwork, wood manufacturing, and wood repair in 2006. These firms accounted for a significant number of jobs in the Bay Area, totaling between 6,231 and 7,938 jobs (See Table 4). Wood Kitchen Cabinet and Countertop Manufacturing firms hold the greatest concentration of affected jobs, with over 2,300 jobs in 2006.

Although the proposed amendment could also impact wood coating distributors, furniture retailers, and contractors, this analysis does not consider the impacts to these firms. For distributors, retailers, and contractors, sales from wood products and wood coatings represent a small portion of revenues. Contractors tend to earn the majority of their revenues from labor and materials costs. In addition, distributors and retailers tend to mark up their products using the standard method of charging consumers roughly double their cost, each, so higher costs could translate into higher revenues.

**Table 4: Profile of Affected Industries, 2006**

NAICS	Industry Description	Employment	Number of Establishments by Size of Workforce							Total
			1-4	5-9	10-19	20-49	50-99	100-249	250+	
32191	Millwork	567 - 1,260	26	15	18	10	1	0	0	70
33711	Wood Kitchen Cabinet and Countertop Manufacturing	2,378 - 2,476	125	51	26	23	3	2	1	231
337121	Upholstered Household Furniture Manufacturing	363 - 458	18	11	5	2	3	0	0	39
337122	Nonupholstered Wood Household Furniture Manufacturing	528 - 724	43	11	7	7	1	0	0	69
337129	Wood Television, Radio, and Sewing Machine Cabinet Manufacturing	46 - 103	4	1	1	1	0	0	0	7
337211	Wood Office Furniture Manufacturing	611 - 649	5	3	3	1	1	3	0	16
337212	Custom Architectural Woodwork and Millwork Manufacturing	607 - 863	13	6	7	7	3	1	0	37
337215	Showcase Partition Shelving and Locker Manufacturing	480 - 755	19	4	7	5	2	1	0	38
81142	Reupholstery and Furniture Repair	651	98	27	9	6	0	0	0	140
	<b>Affected Industries Total</b>	<b>6,231 - 7,938</b>	<b>351</b>	<b>129</b>	<b>83</b>	<b>62</b>	<b>14</b>	<b>7</b>	<b>1</b>	<b>647</b>

Sources: US Census; BAE, 2009.

# Socio-Economic Impacts

This section discusses the methodology, economic profile of the affected industry, annualized compliance costs, and estimates of the economic impacts associated with the proposed amendment to Rule 8-32.

## Methodology

In order to estimate the economic impacts of amending Rule 8-32 on the affected industry, this report compares the affected industry's annualized compliance costs with its profit ratios. The analysis uses data from the BAAQMD, US Census County Business Patterns, the IRS, and Dun and Bradstreet, a private data vendor.

The BAAQMD identifies the following industries as affected by the proposed amendments to reduce emissions of Volatile Organic Compounds (VOCs) by reducing the VOC content requirements for wood product coatings: Wood Window and Door Manufacturing (NAICS 321911); Other Millwork (Including Flooring) (NAICS 321918); All Other Miscellaneous Wood Product Manufacturing (NAICS 321999); Wood Kitchen Cabinet and Countertop Manufacturing (NAICS 337110); Upholstered and Non-upholstered Wood Household Furniture Manufacturing (NAICS 337121 & 337122); Institutional Furniture (NAICS 337127); Wood Television, Radio, and Sewing Machine Cabinet Manufacturing (NAICS 337129); Wood Office Furniture Manufacturing (NAICS 337211); Custom Architectural Woodwork and Millwork Manufacturing (NAICS 337212); Showcase Partition Shelving and Locker Manufacturing (NAICS 337215); and Re-upholstery and Furniture Repair (NAICS 811420). According to the 2006 NAICS County Business Patterns, there are 647 manufacturers and repairers in the region; however, BAAQMD records identify approximately 627 wood product coatings firms in the Bay Area that would be subject to the proposed amendment. Of these 627 businesses, about 60 percent (369) consume less than 20 gallons of wood coatings per year and would be exempt from the proposed compliance rules.

## Economic Profile of Affected Industries

As shown in Table 5, according to Dun & Bradstreet data, the average firm in the wood products coatings sector has approximately seven employees and average annual sales of approximately \$701,482.

**Table 5: Wood Coating Business Sales**

<b># of Employees</b>	<b>Number of Businesses</b>	<b>Average Annual Sales (a)</b>	<b>Average # of employees</b>	<b>Total Sales</b>	<b>Total Employees</b>
1-4	414	\$147,841	2	\$61,148,307	748
5-9	90	\$505,588	6	\$45,286,261	543
10-19	50	\$1,421,414	12	\$71,148,351	577
20-49	55	\$3,925,295	28	\$217,161,189	1,549
50-99	11	\$10,495,877	58	\$110,603,606	606
100-249	5	\$12,700,000	163	\$66,915,126	856
250+	3	\$35,700,000	500	\$94,050,000	1,317
<b>TOTAL</b>	<b>627</b>	<b>\$1,062,700</b>	<b>10</b>	<b>\$666,312,839</b>	<b>6,196</b>

Notes:

(a) Represents a 30 percent sample of the wood coating businesses in the Bay Area.

SIC codes 2431, 2434, 2511, 2512, 2517, 2541, 7641

Sources; BAAQMD, 2009; Dun and Bradstreet, 2009; BAE, 2009.

The majority of wood products coatings firms (414 out of the total 627, or 66 percent) are small businesses, employing between one and four employees. For these firms, the average number of employees is two and the average annual sales are calculated to be \$147,800.

Based on IRS data on total sales and net income for the Manufacturing categories of Wood Product and Furniture and Related Product, firms average a 4.9 percent rate of return on total sales. Table 6 presents the profits for wood products coating manufacturers of varying sizes based on a 4.9 percent rate of return.

**Table 6: Profits of Wood Coating Manufacturers**

<b># of Employees</b>	<b>Number of Businesses</b>	<b>Average Annual Sales per Firm</b>	<b>Avg. Return on Sales</b>	<b>Average Profits per Firm</b>	<b>Total Profits</b>
1-4	414	\$147,841	4.9%	\$7,262	\$3,003,492
5-9	90	\$505,588	4.9%	\$24,834	\$2,224,378
10-19	50	\$1,421,414	4.9%	\$69,817	\$3,494,676
20-49	55	\$3,925,295	4.9%	\$192,803	\$10,666,558
50-99	11	\$10,495,877	4.9%	\$515,538	\$5,432,646
100-249	5	\$12,700,000	4.9%	\$623,801	\$3,286,748
250+	3	\$35,700,000	4.9%	\$1,753,518	\$4,619,563
<b>TOTAL</b>	<b>627</b>	<b>\$666,312,839</b>	<b>4.9%</b>	<b>\$32,728,060</b>	<b>\$32,728,060</b>

Sources: Dun & Bradstreet; IRS; BAE, 2009.

As Table 6 shows, wood products coatings manufacturers have annual net profits ranging from \$7,300 to \$1.8 million, depending on the firm's size, with total annual profits from all businesses equaling

approximately \$32.7 million.<sup>2</sup>

## **Description of Compliance Costs**

There are several methodologies to determine the compliance costs associated with amending Rule 8-32. The BAAQMD's Workshop Report specifies that there are a few different ways that different businesses can comply with the new regulation, including switching to low-VOC solvent based or switching to new water based formulated coatings, and modifying spray application equipment, and potentially installing new drying systems.

### **Ongoing Costs**

BAAQMD staff estimate that 80 percent of all affected firms will switch to low-VOC solvent based coatings, while 10 percent will switch to water-based coatings.<sup>3</sup> The 90 percent of firms that switch coatings will have annual ongoing compliance costs, as low-VOC coatings typically carry higher costs than higher-VOC coatings. The BAAQMD reports that low-VOC solvent-based and new water-based formulations will cost about 1.3 to two times as much as the currently used higher-VOC coatings. The cost effectiveness of switching coatings to reduce VOC emissions ranges from \$7,000 to \$22,000 per ton of VOCs reduced. Using an average of \$14,500 per firm, the average annual cost per pound of VOC reduced is calculated to be \$7.25.

### **Capital Costs**

Those firms that choose to switch to water-based coatings will also incur capital compliance costs, as they will need to adjust and reconfigure their spray guns to be compatible with water-based coatings. In addition, some firms may determine that they cannot meet the new requirements unless they invest in new drying equipment. However, BAAQMD staff indicated that only a few firms would find purchasing new drying equipment necessary.

### **Spray Gun Equipment**

BAAQMD estimates that five percent of all affected firms will adjust and reconfigure their spray guns in response to Rule 8-32, and that the capital costs for modifying spray equipment will likely range from \$500 per spray gun and total up to \$5,000 per facility. This analysis assumes that the cost to modify spray equipment will increase with firm size (number of employees), and that capitalization of new equipment will occur over the first five years. Thus, the annualized costs of modifying spray equipment would range from \$150 to \$1,000.

### **Drying Equipment**

Finally, a few firms that switch to water-based coatings may find that they also need to experiment with drying equipment in order to meet Rule 8-32 requirements. These firms will comply by reducing their manufacturing capacity or by installing control equipment. Because of the high costs and economy of scale necessary to install this equipment, this compliance method is usually only used by a very few large

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<sup>2</sup> It should be noted that since profit ratios come from the IRS, these profit rates represent the profit rate on net taxable income after depreciating capital equipment and writing down bad debt.

<sup>3</sup> According to BAAQMD staff, approximately 10 percent of firms are already compliant, using water-based coatings.

facilities. BAAQMD estimates that only the largest two percent of the affected 258 largest businesses will choose this compliance method. The cost to install new systems will cost approximately \$100,000, in addition to increased utility expenses. Annualizing the equipment over a five year period give an annual compliance cost estimate of \$20,000, plus an additional \$5,000 in increased annual utility costs.<sup>4</sup> Again, it should be noted that most firms will find that they can meet new regulations without new drying equipment.

### ***Total Compliance Costs***

Replacing spray equipment and installing new control equipment account for total capital costs. The total compliance costs for the 258 complying regional firms were calculated by multiplying the number of businesses times their average annual emissions (pounds of VOC) times the average annual cost per pound of VOC reduced (assuming that 95 percent of firms will comply by switching coatings) times the average percentage of VOC reduced (30 percent, according to the BAAQMD). This total is then added to the total annualized capital costs, in this case the additional costs of modifying spray equipment for five percent of all firms, or the cost of new drying equipment for the largest firm.

Table 7 presents a detailed estimate of the compliance costs to manufacturing firms using the methodology described above. As Table 7 shows, the total annualized compliance costs to manufacturing firms would be approximately \$1.8 million.

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<sup>4</sup> BAAQMD staff.

**Table 7: Total Annualized Compliance Costs**

<b>ALL AFFECTED FIRMS</b>				
<b># of Employees</b>	<b>Number of Businesses</b>	<b>Avg. Annual Emissions per Firm (lbs. of VOC)</b>	<b>Total Annual Emissions (lbs. of VOC)</b>	<b>Total Compliance Costs</b>
1-4	45	292	13,030	\$26,656
5-9	90	978	87,631	\$178,056
10-19	50	1,861	93,161	\$190,092
20-49	55	4,521	250,132	\$507,605
50-99	11	9,285	97,841	\$198,907
100-249	5	26,239	138,253	\$280,652
250+	3	80,737	212,697	\$455,234
<b>Total</b>	<b>258</b>		<b>892,746</b>	<b>\$1,837,203</b>

<b>FIRMS ONLY SWITCHING COATINGS</b>					
<b># of Employees</b>	<b>Number of Businesses (a)</b>	<b>Avg. Annual Emissions Reduced (lbs. of VOC)</b>	<b>Avg. Annual Cost per lb. of VOC reduced (a)</b>	<b>Avg. Percentage of VOC reduced</b>	<b>Subtotal: Annual Costs of Switching Coatings</b>
1-4	40	3,635	\$7.25	31%	\$26,356
5-9	81	24,449	\$7.25	31%	\$177,256
10-19	45	25,992	\$7.25	31%	\$188,442
20-49	50	69,787	\$7.25	31%	\$505,955
50-99	9	27,298	\$7.25	31%	\$197,907
100-249	5	38,573	\$7.25	31%	\$279,652
250+	2	59,343	\$7.25	31%	\$430,234
<b>SUBTOTAL</b>	<b>232</b>	<b>249,076</b>		<b>31%</b>	<b>\$1,805,803</b>

<b>FIRMS SWITCHING COATINGS AND REPLACING CAPITAL EQUIPMENT</b>				
<b># of Employees</b>	<b>Number of Businesses (b)</b>	<b>Total Annualized Capital Costs per Firm</b>	<b>Subtotal: Annual Costs of Switching Coatings</b>	
1-4	2	\$150	\$300	
5-9	4	\$200	\$800	
10-19	3	\$550	\$1,650	
20-49	3	\$550	\$1,650	
50-99	1	\$1,000	\$1,000	
100-249	1	\$1,000	\$1,000	
250+	1	\$25,000 (c)	\$25,000	
<b>SUBTOTAL</b>	<b>15</b>		<b>\$31,400</b>	

Notes:

- (a) Assumes 90% of all firms will switch to higher cost coatings
- (b) Assumes 5% of all firms will replace spray equipment.
- (c) Assumes the largest firm will install new drying equipment and not switch to higher cost coatings.

Sources: Dun & Bradstreet; IRS; California Air Resources Board; BAAQMD; BAE, 2009.



## Affected Industry Economic Impact analysis

In order to determine the impacts of facilities of various sizes, this analysis uses average revenue estimates from Dun & Bradstreet, in conjunction with IRS profit ratios, to determine whether the estimated annualized compliance costs would result in profit reductions of 10 percent or more. The California Air Resources Board (ARB) uses the 10 percent threshold as a proxy for burden, where profit reductions greater than 10 percent indicate a potential for significant adverse economic impacts. Table 8 shows the annualized compliance costs as a share of total profits. This analysis estimates compliance costs using the ARB's methodology.

**Table 8: Total Annualized Compliance Costs as a Share of Profits**

<b># of Employees</b>	<b>Number of Businesses</b>	<b>Total Annual Sales</b>	<b>Total Profits</b>	<b>Total Annualized Compliance Costs</b>	<b>Compliance Costs as a Share of Annual Profits</b>
1-4	45	\$6,595,065	\$323,937	\$26,656	8.2%
5-9	90	\$45,286,261	\$2,224,378	\$178,056	8.0%
10-19	50	\$71,148,351	\$3,494,676	\$190,092	5.4%
20-49	55	\$217,161,189	\$10,666,558	\$507,605	4.8%
50-99	11	\$110,603,606	\$5,432,646	\$198,907	3.7%
100-249	5	\$66,915,126	\$3,286,748	\$280,652	8.5%
250+	3	\$94,050,000	\$4,619,563	\$455,234	9.9%
<b>Total</b>	<b>258</b>	<b>\$611,759,597</b>	<b>\$30,048,506</b>	<b>\$1,837,203</b>	<b>6.1%</b>

Sources: Dun & Bradstreet; IRS; California Air Resources Board; BAAQMD; BAE, 2009.

Overall, annualized compliance costs represent approximately 6.1 percent of profits for all firms. These costs range from 3.7 percent for businesses with 50 to 99 employees to 9.9 percent for the largest firm that replaces its drying equipment. Overall, compliance costs are well below the 10 percent threshold. However, businesses with 250 or more employees are at the high end of the acceptable range. In addition, to the extent that these firms sell products other than wood products coatings, or that some of their products are currently compliant with the proposed amendment, these impacts could be overstated.

## **Consumer Impacts**

Consumers indirectly purchase most wood coatings when they purchase cabinets, furniture, and other wood products. In order to estimate the potential impacts to consumers, this portion of the analysis assumes that manufacturers would be able to pass along 100 percent of their cost increases to consumers through higher furniture and fixture prices. However, since there are currently products on the market already in compliance with the proposed amendment, manufacturers may not be able to pass all of these costs along to consumers and remain competitive. Those manufacturers would likely need to absorb some portion of their costs.

## **Affected Industry and Regional Employment Impacts**

Since on average, the proposed Rule amendment would not result in significant economic impacts to firms within the affected industries, and consumers could bear some portion compliance cost burden, amending the Rule would not impact the affected industry or regional employment.

## **Regional Indirect and Induced Impacts**

Indirect and induced impacts refer to regional multiplier effects of increasing or decreasing regional economic activity. If the Rule were to significantly impact local businesses, any closures would result in direct regional economic losses. Firms would no longer buy goods from local suppliers, thereby resulting in reduced indirect impacts, or business-to-business expenditures. In addition, firms would no longer employ regional residents, resulting in reduced induced impacts, or household spending.

However, since the proposed amendment to the Rule is not expected to result in significant direct impacts, its adoption would not result in any indirect or induced impacts either.

# Impact on Small Businesses

According to California Government Code 14835, a small business is any business that meets the following requirements:

- Must be independently owned and operated;
- Cannot be dominant in its field of operation;
- Must have its principal office located in California;
- Must have its owners (or officers in the case of a corporation) domiciled in California; and
- Together with its affiliates, be either:
  - A business with 100 or fewer employees, and an average annual gross receipts of \$10 million or less over the previous three tax years, or
  - A manufacturer with 100 or fewer employees.

Using these definitions, approximately 97 percent of all affected firms are small businesses. This analysis has shown that firms with lower revenues will not experience higher impacts on return on profits as a result of the proposed amendment to the rule.