

**Socioeconomic Analysis
Proposed Amendments
Regulation 8 Rule 10
Process Vessel Depressurization**

Prepared for

**Bay Area Air Quality Management District
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1. EXECUTIVE SUMMARY

The purpose of Regulation 8 Rule 10 is to reduce the emission of VOCs by requiring controls on emissions from the depressurization of process vessels at refineries and chemical plants. The following are some of the key findings from the socioeconomic analysis of the proposed amendments.

- According to the Bay Area Air Quality Management District (BAAQMD), there are 5 petroleum refineries in the region that are subject to Regulation 8, Rule 10. These corporations are Chevron, Shell, Connoco Phillips, Valero, and Tesoro.
- In 2002, these five refineries employed an estimated 2,280 workers, generated revenues of \$4.5 billion, and earned an estimated \$220 million in profits.
- The BAAQMD also indicates that there are an additional 22 sites in their database that are likely to be affected by proposed amendments to Regulation 8, Rule 10. These sites are facilities within the chemical and allied products industry (SIC 28).
- In aggregate, the 22 sites employ an estimated 926 workers, generated revenues of \$340 million, and earned an estimated \$12.6 million in profit in the year 2002.
- The BAAQMD estimates that each facility that is subject to the proposed amendments to Regulation 8, Rule 10 will be subject to \$24,400 in costs, meaning that the proposed amendments will result in aggregate compliance costs of an estimated \$658,800—or 0.3 percent of aggregate profits for the 27 affected sites. Among the 27 affected sites, there are 5 oil refineries. The five refineries will bear \$122,000 in costs as a result of the proposed amendments, or 0.1 percent of estimated profits. Thus, the proposed amendments to Regulation 8, Rule 10 do not result in any economic impact on affected sites.

2. INTRODUCTION

Regulation 8, Rule 10 was adopted by the BAAQMD Board of Directors on March 17, 1982 and amended July 20, 1983. It is intended to limit emissions of precursor organic compounds from process vessel depressurization during refining unit turnarounds. It requires that organic compounds, after passing through a knockout pot to remove the condensable compounds, be: (1) recovered and combusted in the fuel gas system, (2) controlled and piped to an appropriate firebox or incinerator, (3) flared, or (4) contained and treated. The proposed amendments to Regulation 8, Rule 10 require more stringent controls on emissions from the depressurization of process vessels at refineries and chemical plants.

This report describes the socioeconomic impacts of proposed amendments to Regulation 8, Rule 10. Following this introduction, the report summarizes proposed amendments to the rule and describes the methodology for the socioeconomic analysis. In Section 5, the report describes the economic characteristics of sites affected by the proposed amendment. The sixth section analyzes the socioeconomic impacts of proposed amendments to Regulation 8, Rule 10.

3. DESCRIPTION OF PROPOSED AMENDMENTS

The Bay Area Air Quality Management District (BAAQMD) seeks to amend Regulation 8, Rule 10 (Process Vessel Depressurization) to require more stringent controls on emissions from the depressurization of process vessels at refineries and chemical plants. These vessels typically process hydrocarbons and other materials, often under pressure. These vessels require periodic maintenance and repairs that may involve entry into the confined space by plant personnel. To make a vessel safe for entry, it must be purged of the hydrocarbons and other materials it contains. This purging requires great care in order to minimize any risk of explosion or risk to personnel. Typically, hydrocarbons are swept from a vessel by non-combustible purge gas until the hydrocarbon content is well below the level at which an explosion may occur. Once this level is reached, air can be used to purge remaining vapors from the vessel. Personnel may then enter the vessel to perform repairs or maintenance.

The proposed amendments implement what is called Control Measure SS-17 by supplementing the existing control options with a concentration standard or a mass emission limit. In addition to reducing emissions of organic and other pollutants, including toxic compounds, the amendments will:

- Prohibit process vessels from venting to the atmosphere unless the emissions of total organic compounds are reduced to a concentration of below 10,000 parts per million (ppm);
- Limit the mass emissions of a limited number of vessels that exceed 10,000 ppm to below 15 pounds per day;
- Expand the number of process vessels covered by this rule; and
- Add monitoring and recording requirements to measure emissions vented to atmosphere once each 24-hour period.

4. METHODOLOGY

The socioeconomic analysis involves the use of information provided directly by the District, the corporations and sites directly affected by proposed amendments, as well as secondary data used to describe the industries affected by proposed amendments to Regulation 8, Rule 10. The approach is briefly described below.

ADE began the analysis by requesting from the District a list of all sites subject to the proposed amendments to Regulation 8, Rule 10. In addition to a list of all sites, we also requested the Standard Industrial Code (SIC) for each affected site, the name of the company that manages and or owns sites, as well as information on site location.

We then began to prepare a statistical description of the industry groups of which the affected sites are part, as well as to analyze data on the number of jobs, sales levels, the typical profit ratios and other economic indicators for each industry. ADE also reviewed and summarized documents available to the public such as annual reports for publicly traded companies.

With the annual reports and data from the US Economic Census, ADE was able to estimate sales and profit ratios for many of the sites affected by the proposed amendments to Regulation 8, Rule 10. ADE calculated an average sales figure per affected refinery to estimate sales for and profitability of sites affected by the proposed amendments to the rule. To estimate employment, ADE used employment data from data vendors such as the US Economic Census and the Minnesota IMPLAN Group.

Using the annual reports and data culled by Dun and Bradstreet, ADE calculated ratios of profit per dollar of sales for each refinery. This corporate profitability ratio was applied against site-level sales estimates to yield an estimate of profit generated at refineries affected by the proposed amendments. The result of the socioeconomic analysis shows what proportion of profit the compliance costs represent. Based on a given threshold of significance, ADE discusses in the report whether the affected sites are likely to reduce jobs as a means of recouping the cost of rule compliance or as a result of reducing business operations.

To the extent that such jobs losses appear likely, the indirect multiplier effects of the jobs losses are estimated using a regional IMPLAN input-output model.

5. IMPACTED SOURCES SUBJECT TO PROPOSED AMENDMENTS TO REGULATION 8, RULE 10

This section of the socioeconomic analysis describes demographic and economic trends in the San Francisco Bay Area region. The first part of this section compares the Bay Area against California as a whole and, in so doing, provides a context for understanding demographic and economic changes that occurred within the Bay Area between 1997 and 2002. Starting with sub-section 5.2, the second part of this section narrows the focus of the socioeconomic analysis to those industries identified by the District as subject to the proposed amendments. For the most part, the 27 sites that are subject to the proposed amendments to Regulation 8, Rule 10 are within SIC 28 (chemical and allied products manufacturing) and SIC 29 (petroleum refining), which are broadly analyzed in Section 5.2. The second part of this section describes the economic characteristics of impacted sites subject to Regulation 8, Rule 10. For the purposes of this report, the Bay Area region is defined as Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano and Sonoma Counties.

5.1 REGIONAL DEMOGRAPHIC AND ECONOMIC TRENDS

Regional Demographic Trends

The San Francisco Bay Area experienced moderate population growth during the 1990s. The nine-county region as a whole increased by 13 percent, from 6.0 million in 1990 to 6.8 million in 2000. The Bay Area grew almost at the same pace with the state, which increased by 14 percent. San Francisco, Marin, and San Mateo counties grew at significantly slower paces, perhaps because of the high cost of housing in these parts of the Bay Area.

TABLE 1
Population Growth: San Francisco Bay Area
1990 - 2000

	California	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano	Sonoma
1990	29,760,021	1,443,741	948,816	247,289	124,279	776,733	707,161	1,682,585	394,542	458,614
2000	33,871,648	1,279,182	803,732	230,096	110,765	723,959	649,623	1,497,577	340,421	388,222
%Change	14%	13%	18%	7%	12%	7%	9%	12%	16%	18%

Source: US Census, 1990 and 2000

Regional Economic Trends

Economic development practitioners and planners have traditionally divided economies into two broad industrial categories—the economic base and local support industries. Economic base industries are the drivers of local and regional economies in that these industries draw income into a local economy by selling products outside of the local economy, much like the export industries of a national economy. Accrued earnings then circulate throughout the local area in the form of wages and salaries, investments, purchase of fixed assets, and goods and services, generating more jobs and wealth.

The economic base is typically comprised of industries within the manufacturing, minerals-resource extraction, and agricultural sectors. There are also the “local support industries” such as retail or service sectors, the progress of which is a function of the economic base and demographic changes, and more so the latter than the former. As population increases in a given area, demand for services – such as realtors, teachers, healthcare – increases, as does demand for basic retail items like groceries, gas for commuting, or clothing at the local apparel shops.

With notable companies such as Intel, Apple, NUMMI, to name a few, manufacturing continues to be the economic base of the San Francisco Bay Area, exporting goods and produce throughout the nation and globe. The industries affected by Regulation 8, Rule 10 are a prominent part of the region’s economic base. Over the course of the late 1990s, local support industries gained somewhat within the region. Growth in local support industries, such as construction, retail and services, is in large part due to regional population growth, particularly in Alameda (Livermore Valley region), Contra Costa, Solano and Sonoma Counties.

As Table 2 shows, the service sector is the largest employment sector in the region, at 1.1 million or 40 percent of all private sector jobs. In 1997, services represented 37 percent of all jobs (1.0 million jobs). While the proportion of people employed in the services-based sector increased between 1997 and 2002, the proportion of people employed in the manufacturing economic base declined, from 18 to 15 percent of all private sector workers in the Bay Area. Between 1997 and 2002, manufacturing jobs decreased by 16 percent, from 495,500 to 416,500, as Table 2 shows.

Between 2000 and 2002, construction decreased, leading to the overall 1 percent decline in the number of construction jobs between 1997 and 2002. Retail also declined, by 3 percent between 1997 and 2002. In short, Bay Area's economy continues to be diverse even as it experiences one of its worst recessions in history. However, the region has lost jobs in the relatively higher wage generating economic base of manufacturing, while population-driven local support industries as a whole have been stable. Services increased by 6 percent between 1997 and 2002, and has become an even greater share of regional employment, while retail, finance and real estate industries have declined.

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TABLE 2
Employment Profile Of The San Francisco Bay Area, 1997 - 2002

Description	Bay Area Employment 1997	Bay Area Employment 2002	Percentage Change in Bay Area Employment 1997 to 2002	State Employment 1997	State Employment 2002	Percentage Change in State Employment 1997 to 2002
Agriculture	42,617	37,714	-12%	501,483	461,708	-8%
Mining	4,003	3,881	-3%	28,962	25,246	-13%
Construction	142,408	140,486	-1%	551,269	582,641	6%
Manufacturing	495,584	416,460	-16%	1,902,332	1,680,811	-12%
Transportation And Public Utilities	179,333	171,438	-4%	650,006	659,116	1%
Wholesale Trade	176,870	165,640	-6%	774,779	782,708	1%
Retail Trade	513,214	497,373	-3%	2,271,468	2,306,136	2%
Finance, Insurance, And Real Estate	202,944	181,113	-11%	759,924	728,334	-4%
Services	1,017,933	1,075,368	6%	3,984,420	3,984,420	0%
Not Elsewhere Classified	356	356	0%	23,867	23,867	0%
Total	2,775,262	2,689,828	-3%	11,448,510	11,234,987	-2%

Sources: Applied Development Economics, based on data from the US Economic census, IMPLAN, and California EDD-LMID

5.2 DESCRIPTION OF AFFECTED INDUSTRIES

Regulation 8, Rule 10 affects a wide set of industries within SIC 28 (chemical and allied products), as well as five oil refineries (SIC 2911). Table 3 identifies economic trends for select industries in SIC 28 (chemical and allied products) and for oil refineries (SIC 2911) in the Bay Area and state, and it provides a comparison between two points in time—1997 and 2002. Data in Table 3 are for all sources, not just the five (5) impacted sources subject to the proposed amendments. Employment and other estimates for the year 2002 for sites affected by Regulation 8, Rule 10 are based on from vendors such as the California LMID-EDD, Minnesota IMPLAN Group, and the US Census Economic Census.

As Table 3 shows, employment in oil refineries increased by an estimated 8 percent for the five-year period from 1997 to 2002 — from 7,292 to 7,849 jobs. In contrast, between 1997 and 2002, manufacturing as a whole decreased by 16 percent and 12 percent in the Bay Area region and California respectively, as Table 2 above demonstrates. In short,

employment in petroleum refining industries in the Bay Area increased at a time when manufacturing as a whole declined significantly.

Table 3 also shows employment trends for select industries within SIC 28 (chemical and allied products). The select industries correspond to SIC codes for non-oil refinery sites subject to Regulation 8, Rule 10. The SIC codes for these industries range between SIC 2813 and SIC 2899. Between 1997 and 2002, in aggregate, employment in these industries increased by 2 percent, from 8,924 to 9,112 in the nine-county Bay Area. By contrast, employment in these industries increased by 0.7 percent in the state as a whole during the same time.

TABLE 3
Employment Trends: Industries Affected By Proposed Amendments to Regulation 8, Rule 10
1997 - 2002

	Bay Area 1997	Bay Area 2000	Bay Area 2002 (est)	Bay Area 1997 -2002	State 1997	State 2000	State 02 (est)	State 1997 -2002
Manufacturing (all)	495,584	510,376	416,460	-16%	1,902,332	1,939,161	1,680,811	-12%
2813 Industrial gases	607	310	613	1%	1,586	1,232	1,213	-23%
2819 Industrial inorganic	1,695	1,640	1,744	3%	3,466	3,062	3,016	-13%
2821 Plastics materials	644	509	688	7%	2,919	3,306	3,905	34%
2835 Diagnostic substances	853	1,236	926	9%	2,972	4,008	3,947	33%
2842 Polishes and sanitation	1,137	1,067	1,173	3%	3,720	2,965	2,918	-22%
2844 Surface active agents	379	322	385	1%	7,354	7,983	8,062	10%
2851 Paints, varnishes	629	1,047	498	-21%	4,423	4,768	4,586	4%
2869 Industrial organic	1,139	760	1,168	3%	2,764	1,917	1,888	-32%
2875 Fertilizers, mixing only	100	98	112	12%	1,075	931	916	-15%
2879 Agricultural chemicals	635	353	650	2%	1,183	789	776	-34%
2891 Adhesives and sealants	474	282	492	4%	3,344	3,451	3,396	2%
2892 Explosives	13	8	14	8%	398	443	436	10%
2899 Chemical preparations	619	613	650	5%	2,025	2,457	2,418	19%
<i>SIC 28 Chemical allied products</i>	<i>8,924</i>	<i>8,245</i>	<i>9,112</i>	<i>2%</i>	<i>37,229</i>	<i>37,312</i>	<i>37,477</i>	<i>0.7%</i>
2911 Oil refineries	7,292	7,539	7,849	8%	16851	14,351	14,900	-12%
Total Employment	2,775,262	3,097,902	2,689,828	-3%	11,448,510	12,652,960	11,234,987	-2%

Sources: Applied Development Economics, based on data from the US Economic Census, IMPLAN, and California EDD-LIMD

5.3 ECONOMIC CHARACTERISTICS OF 27 SITES AFFECTED BY THE PROPOSED AMENDMENTS TO REGULATION 8, RULE 10

Table 4 identifies the economic characteristics of the refineries and chemical and allied products sites affected by the proposed amendments. This table shows that these sites are estimated to employ 3,206 workers, with the bulk of workers — 2,280 workers— at petroleum refineries. The 27 sites have an estimated aggregate payroll of \$174 million, and estimated revenues of \$4.9 billion. As Table 4 further shows, the affected sites produce an estimated \$1.1 billion in value-added production.¹

TABLE 4
SOCIO-ECONOMIC ANALYSIS OF REGULATION 8 RULE 10
AFFECTED SITES SUMMARY, 2002 (estimates)

SIC	Establishments	Employment	Payroll	Value-added	Shipment/Sales	Est. Profits
2813	4	98	\$4,088,251	\$23,591,108	\$32,102,590	\$1,187,796
2819-2821	4	170	\$7,698,805	\$40,850,119	\$81,112,871	\$3,001,176
2835/2851	3	209	\$9,760,813	\$44,438,011	\$75,651,999	\$2,799,124
2842-2844	2	32	\$987,392	\$6,008,050	\$7,362,314	\$272,406
2869	3	164	\$8,072,081	\$47,117,107	\$91,837,680	\$3,397,994
2875-2879	2	35	\$1,156,363	\$4,509,352	\$10,706,673	\$396,147
2891-2892	2	149	\$5,069,398	\$10,905,891	\$25,916,995	\$958,929
2899	2	69	\$2,358,140	\$10,621,681	\$15,458,793	\$571,975
2911	5	2,280	\$134,891,089	\$887,478,276	\$4,546,989,022	\$220,301,259
	27	3,206	\$174,082,334	\$1,075,519,595	\$4,887,138,937	\$232,886,806

Sources: Applied Development Economics, based on data from the US Economic Census, Dun and Bradstreet, and various corporate annual reports

¹ Value-added measures the difference between sales and costs of inputs (i.e. materials and labor). It is a measure of productivity.

As Table 5 shows, the affected sources represent 19 percent of all employment within their respective industries (SIC 28 various and SIC 2911) in the Bay Area region. Overall, there are an estimated 16,961 employees in the Bay Area in industries that are potentially affected by Regulation 8, Rule 10. Of these 16,961 workers, 3,206 work in the 27 affected sites.

TABLE 5
Employment In Impacted Sites Subject To Proposed Amendment to Regulation 8, Rule 10
Relative To the Bay Area and California, 2002

	Employment at Affected Sites	Bay Area Employment in Affected Industries	State Employment in Affected Industries	Sites As Percent of Bay Area	Sites As Percent of State
2813 Industrial gases	98	613	1,213	16%	8%
2819 Industrial inorganic chemicals, nec	170	2,432	6,920	7%	2%
2835 Diagnostic substances	209	1,423	8,533	15%	2%
2842 Polishes and sanitation goods	32	1,557	10,980	2%	0%
2869 Industrial organic chemicals, nec	164	1,168	1,888	14%	9%
2875 Fertilizers, mixing only	35	762	1,693	5%	2%
2891 Adhesives and sealants	149	506	3,832	30%	4%
2899 Chemical preparations, nec	69	650	2,418	11%	3%
2911 Petroleum refining	2,280	7,849	14,900	29%	15%
	3,206	16,961	52,377	19%	6%

Source: Applied Development Economics, based on data from the US Economic Census and IMPLAN-MIG

6. SOCIOECONOMIC IMPACTS

6.1 COMPLIANCE COST ESTIMATES

The District's cost of compliance analysis indicates that each site would experience annual costs of \$24,400. Thus, 27 sites would experience aggregate annual cost of \$658,800. Table 6 provides a breakdown of the estimated costs, and these costs are broken down into three cost elements.

TABLE 6
Cost Estimate Per Facility

Items	Costs
Records	\$360
Maintenance and Calibration	\$1,540
Monitoring	\$22,500
TOTAL	\$24,400
27 sites	\$658,800

Source: Bay Area Air Quality Management District

6.2 BUSINESS RESPONSE TO COMPLIANCE COSTS

Sites impacted by the proposed amendments to proposed amendments to Regulation 8, Rule 10 may respond in a variety of ways when faced with new regulatory costs. These responses may range from simply absorbing the costs and accepting a lower rate of return to shutting down the business operation altogether. Businesses may also seek to pass the costs on to their customers in the form of higher prices, or they may renew efforts to increase productivity and reduce costs elsewhere in their operation in order to recoup the regulatory costs and maintain profit levels.

6.3 IMPACT ANALYSIS

The businesses' responses to increased compliance costs hinge on the effect of the costs on the profits generated at the affected sites. An impact on estimated profits greater than 10 percent implies that the source would experience serious economic effects because of the compliance cost. When compliance costs are greater than 10 percent of estimated profits, companies typically respond to the impact by laying off some workers, closing parts of manufacturing facilities or, in the most drastic case, possibly closing the manufacturing facility.

Using the cost estimates developed by the District, Applied Development Economics calculated the socioeconomic impacts of the proposed amendments. In calculating impacts of the proposed amendments on profits, ADE used return on sales ratios identified by Dun and Bradstreet for select industries and in annual reports of companies directly affected by the draft rule. Base on data from the US Economic Census and from corporate annual report, we estimate that the 5 affected refineries generated a combined profit of \$220 million on \$4.5 billion in sales in the year 2002. Altogether, the 27 affected sites generated a combined profit of \$232.9 million on \$4.9 billion in the year 2002.

Table 7 compares the estimated costs of the proposed amendments to this rule under both cost alternatives. Affected sites will incur an aggregate cost \$658,800. This cost represents an estimated .03 percent of profits for the 27 sites affected by the proposed amendment. The cost of the proposed rule to oil refineries represents an estimated 0.1 percent of profits, as Table 8 shows. In short, the proposed amendments to Regulation 8, Rule 10 will not result in any significant employment impacts to the 27 affected oil refineries and chemical-allied products plants in the Bay Area.

TABLE 7
SOCIO-ECONOMIC ANALYSIS OF REGULATION 8 RULE 10
AFFECTED SITES SUMMARY, 2002 (estimates)

SIC	Shipment/Sales	Est. Profits	Annual Facilities Cost	Annual Cost As Percent of Sales	Annual Cost As Percent of Profits	Above Threshold	Dollar Amount Above Theshold	Average Wages Plus benefits	Direct Job Loss Impacts
2813	\$32,102,590	\$1,187,796	\$97,600	0.3%	8.2%	na			none
2819-2821	\$81,112,871	\$3,001,176	\$97,600	0.1%	3.3%	na			none
2835/2851	\$75,651,999	\$2,799,124	\$73,200	0.1%	2.6%	na			none
2842-2844	\$7,362,314	\$272,406	\$48,800	0.7%	17.9%	7.9%	\$21,559	\$40,274	1
2869	\$91,837,680	\$3,397,994	\$73,200	0.1%	2.2%	na			none
2875-2879	\$10,706,673	\$396,147	\$48,800	0.5%	12.3%	2.3%	\$9,185	\$42,644	none
2891-2892	\$25,916,995	\$958,929	\$48,800	0.2%	5.1%	na			none
2899	\$15,458,793	\$571,975	\$48,800	0.3%	8.5%	na			none
2911	\$4,546,989,022	\$220,301,259	\$122,000	0.0%	0.1%	na			none
	\$4,887,138,937	\$232,886,806	\$658,800	0.0%	0.3%	na			

Sources: Applied Development Economics, based on data from the US Economic Census, Dun and Bradstreet, and various corporate annual reports.

6.4 IMPACT ON SMALL BUSINESSES

In addition to analyzing the employment impacts of proposed amendments to Regulation 8, Rule 10, state legislation requires that the socioeconomic analysis assess whether small businesses are disproportionately affected by air quality rules such as the proposed amendments to the Regulation 8, Rule 10. First, this section profiles chemical plants and oil refineries in the San Francisco Bay Area region by employment size categories, and, in so doing, shows that most of these manufacturers are relatively large employers. Then, this section discusses the average size of the five refineries affected by the proposed amendments. Finally, this section shows how the five refineries affected by the proposed amendments to Regulation 8, Rule 10 fail to qualify as small businesses as defined by the State of California.

Chemical and Allied Products and Oil Refineries By Employment Size Categories

More than 50 percent of all businesses in California and the United States employ less than four people, and almost 80 percent employ less than ten people. Data in Table 8 are for all sites in industries identified by the BAAQMD, and it includes data on sites affected by amendments to Regulation 8, Rule 10. The data in the table comes from a combination of vendors—Minnesota IMPLAN Group and the US County Business Patterns—and is current as of the year 2001. Table 8 distributes affected industries by number of employees per manufacturing site. As a group, establishments in the affected oil refining industries are significantly larger than state and national industries as a whole. Establishments with more than 100 workers represent 2.5 percent of all establishments in all industries in California and the United States. In contrast, 44 percent of affected refineries employ at least 100 people. In fact, 55 percent of all refineries employ at least 50 people versus the statewide and national average of 5.7 percent, as Table 8 shows. As for chemical and allied product plants, 6 percent employ at least 100 workers, an amount that, while less than oil refineries, is significantly greater than state and national rates for establishments with at least 100 workers. Consistent with data in Table 8, we estimate that the oil

refinery sites directly affected by the proposed amendment employ, on average, 455 workers, placing these facilities as mid- to large-sized employers. And, the 22 chemical and allied product sites directly affected by the proposed amendments employ at least 42 workers. Thus, the chemical and allied products sites affected by the proposed amendments are mid-sized establishments.

TABLE 8
Distribution Of Chemical and Allied Products (SIC 28) and Oil Refineries (SIC 2911) In The San Francisco Bay Area By Size of Facilities, 2001

	Employment Size Categories						
	1 thru 4	5 thru 9	10 thru 19	20-49	50-99	100-249	250 or more
Bay Area SIC 28 (Chemical and allied products)	33%	17%	16%	20%	7%	4%	2%
Bay Area SIC 2911 (Oil refineries)	11%	0%	11%	22%	11%	0%	44%
California (all industries)	54.0%	18.5%	12.6%	9.1%	3.2%	1.8%	0.7%
US (all industries)	53.9%	19.3%	12.7%	8.7%	3.0%	1.8%	0.7%

Source: United States Bureau of the Census, County Business Patterns 2000, IMPLAN MIG

Definition Of Small Business Per California Statute

The previous section showed that chemical and allied product plants and oil refineries in the San Francisco Bay Area are significantly larger than most businesses in California and the nation, which, on average, employ less than 10 people. This section discusses how the State of California defines small business, and, in so doing, shows how the five sources affected by the proposed amendments to Regulation 8, Rule 10 fail to meet the State's definition of small business.

For purposes of qualifying small businesses for bid preferences on state contracts and other benefits, the State of California defines small businesses in the following manner². To be eligible for small business certification, a business:

- Must be independently owned and operated;
- Cannot be dominant in its field of operation;

² State of California. Department of General Services. "California Small Business Certification" (<http://www.pd.dgs.ca.gov/smbus/sbcert.htm>)

- 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 gross receipts of \$10 million or less over the previous tax years, or
 - A manufacturer with 100 or fewer employees

The five refineries that are affected by the proposed amendments are not independently-owned and operated businesses. These refineries are owned by publicly-traded global corporations whose headquarters are outside of California (except for Chevron). In addition, the affected oil refineries sources employ, on average, 455 workers, and their average revenue is approximately \$909 million. Thus, by the standards established by the State of California, the oil refineries are not small businesses. With regards to 22 chemical and allied product sites, slightly over half (12) of these sites are estimated to have earned more than \$10 million in the year 2002. Thus, of the 22 chemical and allied product sites, 10 are small businesses. However, the analysis of Section 6.3 concludes that the cost of the proposed amendment to Regulation 8, Rule 10 does not disproportionately impact these 10 sites. Based on this discussion, it is determined that proposed amendments to the Regulation 8, Rule 10 do not disproportionately affect small businesses.