San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

2006 Area Source Emissions Inventory Methodology
060 - COMMERCIAL NATURAL GAS COMBUSTION

I. Purpose

This document describes the Area Source Methodology used to estimate emissions of carbon dioxide (CO_2), nitrogen oxides (NO_x), fine particulate matter less then 10 microns (PM_{10}), volatile organic compounds (VOC), and sulfur oxides (SO_x) from commercial natural gas combustion in the San Joaquin Valley Air Basin. An area source is a collection of similar emission units within a geographic area (i.e., a County). Area sources collectively represent individual sources that are small and numerous, and that may not have been inventoried as specific point, mobile, or biogenic sources. The California Air Resources Board (CARB) has grouped these individual sources with other like sources into area source categories. These source categories are grouped in such a way that they can be estimated collectively using one methodology.

II. Applicability

The emission calculations from this Area Source Methodology apply to facilities that are identified by the following Category of Emission Source (CES) codes and Reconciliation Emission Inventory Codes (REIC):

Table 1. Emission inventory codes.

CES	REIC	Description
58735	060-020-0110-0000	Commercial Natural Gas Combustion – Space Heating
58743	060-030-0110-0000	Commercial Natural Gas Combustion – Water Heating
47167	060-995-0110-0000	Commercial Natural Gas Combustion – Other

III. Point Source Reconciliation

Emissions from the area source inventory and point source inventory are reconciled against each other to prevent double counting. This is done using relationships created by the California Air Resources Board (ARB) between the area source REIC and the point sources' Standard Industry Classification (SIC) code and emissions process Source Category Code (SCC) combinations. The area sources in this methodology reconcile against processes in our point source inventory with the SIC/SCC combinations listed in Appendix A.

IV. Methodology Description

This area source methodology is a top down estimation of natural gas consumption in the commercial sector. Natural gas consumption for California was obtained from the California Energy Commission (CEC) (Gough, 2007) then apportioned into three end use categories (space heating, water heating and other) using data obtained from the Pacific Gas and Electric Company (PG&E) (PG&E, 1999). To avoid double counting, this information was reconciled with the District's Point Source Inventory to obtain the area source consumption of natural gas within the commercial sector of the San Joaquin Valley Air Basin.

V. Activity Data

Consumption. The amount of natural gas consumed in the commercial sector for each county in the District in 2006 was obtained from the CEC (Gough, 2007). The process rates reported through the District's point source inventory were subtracted from the total process rates reported by the CEC. The difference represents the reconciled area source process rates:

Table 2. Commercial natural gas deliveries in 2006 (MMSCF).

County	Total Process Rate	Point Source Process Rate	Area Source Process Rate
Fresno	9,695	1,974	7,721
Kern	5,530	2,213	3,317
Kings	1,029	803	226
Madera	675	128	547
Merced	917	95	822
San Joaquin	6,543	1,581	4,962
Stanislaus	3,568	917	2,651
Tulare	2,042	342	1,700
Total	29,999	8,053	21,946

Categorization. Consumption of natural gas within the district was apportioned into our three end use categories (space heating, water heating and other) as described by a Sonoma Technologies, Inc. report titled "Commercial and Industrial Fuel Combustion" (STI, 2002). They based their findings on a 1999 report prepared by Pacific Gas and Electric Company (PG&E) titled "Commercial Building Survey Report" (PG&E, 1999). The following tables present San Joaquin Valley commercial gas consumption by end use and assumed combustion process:

Table 3. Commercial natural gas consumption by end use and combustion process (Stanislaus and San Joaquin Counties).

End Use Category	Commercial Gas Consumption (%)	Combustion Process
Space heating	32%	Small boiler
Water heating	20%	Small boiler
Other:		
Cooling	5%	Turbine
Cooking	10%	Approximated as small boiler
Process heat/machinery	29%	60% small boiler
		20% turbine
		20% engine
Misc.	4%	50% turbine, 50% engine

Table 4. Commercial natural gas consumption by end use and combustion process (Fresno, Kern, Kings, Madera, Merced, and Tulare Counties).

End Use Category	Commercial Gas Consumption (%)	Combustion Process
Space heating	35%	Small boiler
Water heating	32%	Small boiler
Other:		
Cooling	2%	Turbine
Cooking	26%	Approximated as small boiler
Process heat/machinery	2%	60% small boiler
		20% turbine
		20% engine
Misc.	3%	50% turbine, 50% engine

VI. Emission Factors

CO, NOx, VOC and PM_{10} emission factors for commercial natural gas combustion were obtained from EPA's AP-42. The SOx emission factor for all processes was obtained from San Joaquin Valley Air Pollution Control District Policy APR 1720, Section II. For turbines, the NOx, VOC, CO, and PM_{10} emission factors were taken from AP-42, section 3.1, tables 3.1-1 and 3.1-2a (EPA, 2000a). The VOC emission factor was the result of taking the Total Organic Compound (TOC) emission factor and applying the California Air Resources Board's (CARB) speciation profile for the EICs covered in this methodology (see Section XII - ARB Chemical Speciation). This resulted in a higher, and therefore, more conservative emission factor for VOC.

For reciprocating internal combustion (IC) engines, the NOx, VOC, CO, and PM_{10} emission factors were taken from AP-42, section 3.2, table 3.2-2 (EPA, 2000b). The NOx and CO emission factors were used under the assumption that the IC engines are 4-stroke lean-burn engines operating at normal conditions and less than 90%

load. The Total Organic Gas (TOG) emission factor was speciated into a VOC emission factor using CARB's speciation profiles (just like the VOC emission factor for the turbines). The PM_{10} emission factor was also taken from the same table. In an effort to provide a more conservative estimate, the total PM (condensable) emission factor was speciated into PM_{10} emissions using CARB's speciation profiles.

For small boilers, the NOx, VOC, CO, and PM_{10} emission factors were taken from AP-42, section 1.4, tables 1.4-1 and 1.4-2 (EPA, 1998). The NOx and CO emission factors were taken under the assumption that these were small, uncontrolled boilers. The VOC emission factor was taken directly from AP-42 because it would be higher than the speciated TOC emission factor and therefore be a more conservative emission factor. The PM_{10} emission factor was obtained by applying the CARB speciation profile to the total PM emission factor.

Table 5. Commercial natural gas combustion emission factors (lb/MMSCF).

Combustion Process	NO_x	CO	SO_x	VOC	PM_{10}
Turbines	326	84	2.9	4.7	6.7
IC Engines	864	568	2.9	633	10.2
Small Boilers	100	84	2.9	5.5	7.7

VII. Emissions Calculations

A. Assumptions

1. Natural gas deliveries are accurately reported by the California Energy Commission.

2. PG&E's survey of the end-use consumption of natural gas within it's electric service territory accurately describes the end-use consumption of natural gas within the District.

3. The emission factors from AP-42 are accurate.

4. The scheme devised by STI for allocating natural gas deliveries to commercial combustion devices and their selections of emission factors are valid.

5. Internal combustion engines within this methodology are considered to be 4-stroke lean-burn engines.

B. Sample Calculations

The emissions for each criteria pollutant within this area source methodology can be calculated using the following equation:

$$Emissions\left(\frac{tons}{yr}\right) = Fuel\ Consumption\left(\frac{MMSCF}{yr}\right) \times (\%\ End\ Use\ ) \times Emission\ Factor\left(\frac{lbs\ of\ Emissions}{MMSCF}\right) \times \left(\frac{1\ ton}{2000\ lbs}\right)$$

For NO_x emissions due to natural gas combustion in commercial space heaters in Fresno County:

Given:

1. 2006 area source consumption for commercial natural gas combustion in Fresno County was 7,721 MMSCF (million std. cubic feet).
2. In this service area, 35% of commercial end use was for space heating.
3. All commercial space heating due to natural gas combustion is provided by small boilers.
4. The NOx emission factor for commercial small boilers is 100 pounds per million cubic feet of natural gas burned.

Calculate Emissions:

$$NOx\ Emissions = \left(\frac{7{,}721\ milllion\ cu\ ft}{Year}\right) \times (0.35) \times \left(\frac{100\ lb\ of\ NOx}{million\ cu\ ft}\right) = \frac{270{,}235\ lbs\ of\ NOx}{Year}$$

$$NOx\ Emissions = \left(\frac{270{,}235\ lbs\ of\ NOx}{Year}\right) \times \left(\frac{1\ ton}{2{,}000\ lbs}\right) = \frac{135.1\ tons\ of\ NOx}{Year}$$

VIII. Temporal Variation

A. Daily

ARB Code 24. 24 hours per day - uniform activity during the day.

B. Weekly

ARB Code 7. 7 days per week - uniform activity every day of the week

C. Monthly

Monthly activity in California is higher in the winter months as illustrated by 2006 commercial delivery data from the U.S. Department of Energy's Energy Information Administration (EIA) seen below.

Table 6. Monthly natural gas consumption activity.

Month (2006)	Natural Gas Consumption (million cubic feet)	Activity Level (% of annual)
January	24,730	10.1%
February	23,938	9.8%
March	24,062	9.8%
April	21,985	9.0%
May	18,659	7.6%
June	16,958	6.9%
July	15,204	6.2%
August	17,944	7.3%
September	16,993	7.0%
October	18,536	7.6%
November	20,041	8.2%
December	25,383	10.4%
Total	244,433	100%

IX. Spatial Variation

Commercial natural gas deliveries in 2006 for each county in the SJVAPCD were provided by the California Energy Commission and were presented previously in Section V. Within each County, activity can be assigned to parcels zoned for commercial activity.

X. Growth Factor

Growth factors are developed by either the District's Planning Department or CARB for each EIC. These factors are used to estimate emissions in future years. The growth factors associated with this emissions category may be obtained from the Air Quality Analysis Section of the District's Planning Department.

XI. Control Level

Control levels are developed by either the District's Planning Department or CARB for each EIC. Control levels are used to estimate emissions reductions in future years due to implementation of District rules. These control levels take into account the effect of control technology, compliance and exemptions at full implementation of the rules. The control factors associated with this emissions category may be obtained from the Air Quality Analysis Section of the District's Planning Department.

XII. ARB Chemical Speciation

CARB has developed organic gas profiles in order to calculate reactive organic gasses (ROG), volatile organic compounds (VOC) or total organic gas (TOG) given any one of the three values. For each speciation profile, the fraction of TOG that is ROG and VOC is given. The organic gas profile codes can also be used to look up associated toxics. CARB's speciation profiles for commercial natural gas combustion are presented in Table 7. Organic gas profile #3 is applied to REICs 060-020-0110-0000 (Commercial Natural Gas Combustion – Space Heating), 060-030-0110-0000 (Commercial Natural Gas Combustion – Water Heating) and 060-995-0110-0000 (Commercial Natural Gas Combustion – Other).

Table 7. CARB chemical speciation profiles for REIC's 060-020-0110-0000, 060-030-0110-0000, and 060-995-0110-0000.

Profile Description	CARB Organic Gas Profile#	Fractions	
		ROG	VOC
External Combustion Boiler Natural Gas	3	0.422181	0.422181

CARB has developed particulate matter speciation profiles in order to calculate particulate matter (PM), particulate matter with a diameter less than or equal to 10 microns (PM_{10}) or particulate matter with a diameter less than or equal to 2.5 microns ($PM_{2.5}$) given any one of the three values. For each speciation profile, the fraction of PM that is PM_{10} and $PM_{2.5}$ is given. The particulate matter profile codes can also be used to lookup associated toxics. CARB's speciation profile for REICs 060-020-0110-0000 (Commercial Natural Gas Combustion – Space Heating), 060-030-0110-0000 (Commercial Natural Gas Combustion – Water Heating) and 060-995-0110-0000 (Commercial Natural Gas Combustion – Other) is presented in Table 8.

Table 8. CARB chemical speciation profiles for REIC's 060-020-0110-0000, 060-030-0110-0000, and 060-995-0110-0000.

Profile Description	CARB PM Profile#	Fractions	
		PM_{10}	$PM_{2.5}$
Gaseous Material Combustion	120	1	1

XIII. Assessment Of Methodology

This is a top down estimation of area source emissions from natural gas combustion by the commercial sector. Due to the many assumptions necessary for this type of estimation, we have tried to be as conservative as possible.

XIV. Emissions

Following is the 2006 area source emissions inventory for REIC's 060-020-0110-0000, 060-030-0110-0000, and 060-995-0110-0000 estimated by this methodology. Emissions are reported for each county in the District.

Table 9. Area source emissions for this methodology (2006).

County	Emissions (tons/year)					
	NOx	CO	SOx	VOC[1]	PM_{10}	$PM_{2.5}$[2]
COMMERCIAL NATURAL GAS COMBUSTION – SPACE HEATING						
Fresno	135.1	113.5	3.9	7.4	10.4	N/A
Kern[3]	58.0	48.8	1.7	3.2	4.5	N/A
Kings	4.0	3.3	0.1	0.2	0.3	N/A
Madera	9.6	8.0	0.3	0.5	0.7	N/A
Merced	14.4	12.1	0.4	0.8	1.1	N/A
San Joaquin	79.4	66.7	2.3	4.4	6.1	N/A
Stanislaus	42.4	35.6	1.2	2.3	3.3	N/A
Tulare	29.8	25.0	0.9	1.6	2.3	N/A
TOTAL	372.6	313.0	10.8	20.5	28.7	N/A
COMMERCIAL NATURAL GAS COMBUSTION – WATER HEATING						
Fresno	123.5	103.8	3.6	6.8	9.5	N/A
Kern[3]	53.1	44.6	1.5	2.9	4.1	N/A
Kings	3.6	3.0	0.1	0.2	0.3	N/A
Madera	8.8	7.4	0.3	0.5	0.7	N/A
Merced	13.2	11.0	0.4	0.7	1.0	N/A
San Joaquin	49.6	41.7	1.4	2.7	3.8	N/A
Stanislaus	26.5	22.3	0.8	1.5	2.0	N/A
Tulare	27.2	22.8	0.8	1.5	2.1	N/A
TOTAL	305.5	256.6	8.9	16.8	23.5	N/A
COMMERCIAL NATURAL GAS COMBUSTION – OTHER						
Fresno	148.6	104.8	3.4	16.0	8.9	N/A
Kern[3]	63.8	45.0	1.4	6.9	3.8	N/A
Kings	4.3	3.1	0.1	0.5	0.3	N/A
Madera	10.5	7.4	0.2	1.1	0.6	N/A
Merced	15.8	11.2	0.4	1.7	0.9	N/A
San Joaquin	279.7	161.3	3.2	96.1	8.5	N/A
Stanislaus	149.4	86.2	1.7	51.3	4.5	N/A
Tulare	32.7	23.1	0.7	3.5	2.0	N/A
TOTAL	704.8	442.0	11.1	177.1	29.5	N/A

(1) The District only reports ROG to ARB. As noted in Section XII, ROG is the same as VOC.
(2) At this time, the District does not calculate PM2.5 emissions. PM2.5 emissions can be estimated using the speciation profiles found in Section XII.
(3) Includes both the Valley and non-Valley portions of Kern County.

Following is the 2006 point source emissions inventory for REIC's 060-020-0110-0000, 060-030-0110-0000, and 060-995-0110-0000 as reported to the District by our permit holders. Emissions are reported for each county in the District.

Table 10. Point source emissions for this methodology (2006).

County	Emissions (tons/year)					
	NOx	CO	SOx	VOC[1]	PM_{10}	$PM_{2.5}$[2]
COMMERCIAL NATURAL GAS COMBUSTION – SPACE HEATING						
Fresno	0.0	0.0	0.0	0.0	0.0	N/A
Kern[3]	0.0	0.0	0.0	0.0	0.0	N/A
Kings	0.0	0.0	0.0	0.0	0.0	N/A
Madera	0.0	0.0	0.0	0.0	0.0	N/A
Merced	0.0	0.0	0.0	0.0	0.0	N/A
San Joaquin	0.0	0.0	0.0	0.0	0.0	N/A
Stanislaus	0.0	0.0	0.0	0.0	0.0	N/A
Tulare	0.0	0.0	0.0	0.0	0.0	N/A
TOTAL	0.0	0.0	0.0	0.0	0.0	N/A
COMMERCIAL NATURAL GAS COMBUSTION – WATER HEATING						
Fresno	0.0	0.0	0.0	0.0	0.0	N/A
Kern[3]	0.0	0.0	0.0	0.0	0.0	N/A
Kings	0.0	0.0	0.0	0.0	0.0	N/A
Madera	0.0	0.0	0.0	0.0	0.0	N/A
Merced	0.0	0.0	0.0	0.0	0.0	N/A
San Joaquin	0.0	0.0	0.0	0.0	0.0	N/A
Stanislaus	0.0	0.0	0.0	0.0	0.0	N/A
Tulare	0.0	0.0	0.0	0.0	0.0	N/A
TOTAL	0.0	0.0	0.0	0.0	0.0	N/A
COMMERCIAL NATURAL GAS COMBUSTION – OTHER						
Fresno	59.1	132.0	24.9	14.2	7.4	N/A
Kern[3]	58.6	275.2	2.3	19.7	10.6	N/A
Kings	16.9	8.6	1.3	10.6	2.1	N/A
Madera	5.3	1.9	0.1	0.2	0.4	N/A
Merced	2.7	4.3	0.1	0.6	0.2	N/A
San Joaquin	75.7	108.4	3.6	30.5	8.9	N/A
Stanislaus	12.2	44.8	1.1	2.1	3.9	N/A
Tulare	80.5	19.6	7.9	2.6	1.3	N/A
TOTAL	311.0	594.8	41.2	80.7	34.8	N/A

(1) The District only reports ROG to ARB. As noted in Section XII, ROG is the same as VOC.
(2) At this time, the District does not calculate PM2.5 emissions. PM2.5 emissions can be estimated using the speciation profiles found in Section XII.
(3) Includes only the Valley portion of Kern County,

Following is the 2006 total unreconciled (point source plus area source) emissions inventory for REIC's 060-020-0110-0000, 060-030-0110-0000, and 060-995-0110-0000. Emissions are reported for each county in the District.

Table 11. Total emissions for this methodology (2006).

County	Emissions (tons/year)					
	NOx	CO	SOx	VOC[1]	PM_{10}	$PM_{2.5}$[2]
COMMERCIAL NATURAL GAS COMBUSTION – SPACE HEATING						
Fresno	135.1	113.5	3.9	7.4	10.4	N/A
Kern[3]	58.0	48.8	1.7	3.2	4.5	N/A
Kings	4.0	3.3	0.1	0.2	0.3	N/A
Madera	9.6	8.0	0.3	0.5	0.7	N/A
Merced	14.4	12.1	0.4	0.8	1.1	N/A
San Joaquin	79.4	66.7	2.3	4.4	6.1	N/A
Stanislaus	42.4	35.6	1.2	2.3	3.3	N/A
Tulare	29.8	25.0	0.9	1.6	2.3	N/A
TOTAL	372.6	313.0	10.8	20.5	28.7	N/A
COMMERCIAL NATURAL GAS COMBUSTION – WATER HEATING						
Fresno	123.5	103.8	3.6	6.8	9.5	N/A
Kern[3]	53.1	44.6	1.5	2.9	4.1	N/A
Kings	3.6	3.0	0.1	0.2	0.3	N/A
Madera	8.8	7.4	0.3	0.5	0.7	N/A
Merced	13.2	11.0	0.4	0.7	1.0	N/A
San Joaquin	49.6	41.7	1.4	2.7	3.8	N/A
Stanislaus	26.5	22.3	0.8	1.5	2.0	N/A
Tulare	27.2	22.8	0.8	1.5	2.1	N/A
TOTAL	305.5	256.6	8.9	16.8	23.5	N/A
COMMERCIAL NATURAL GAS COMBUSTION – OTHER						
Fresno	207.7	236.7	28.2	30.2	16.3	N/A
Kern[3]	122.4	320.2	3.8	26.6	14.4	N/A
Kings	21.3	11.7	1.4	11.0	2.4	N/A
Madera	15.8	9.3	0.4	1.4	1.0	N/A
Merced	18.5	15.4	0.4	2.3	1.1	N/A
San Joaquin	355.4	269.8	6.8	126.6	17.4	N/A
Stanislaus	161.6	131.0	2.8	53.5	8.5	N/A
Tulare	113.2	42.6	8.6	6.2	3.2	N/A
TOTAL	1015.9	1036.8	52.3	257.7	64.3	N/A

(1) The District only reports ROG to ARB. As noted in Section XII, ROG is the same as VOC.
(2) At this time, the District does not calculate PM2.5 emissions. PM2.5 emissions can be estimated using the speciation profiles found in Section XII.
(3) Includes both the Valley and non-Valley portions of Kern County.

Following is the net change in total unreconciled emissions between this update (2006 inventory year) and the previous update (2005 inventory year) for REIC's 060-020-0110-0000, 060-030-0110-0000, and 060-995-0110-0000. The change in emissions are reported for each county in the District.

Table 12. Net emissions change for this methodology (2006-2005)

County	Emissions (tons/year)					
	NOx	CO	SOx	VOC[1]	PM_{10}	$PM_{2.5}$[2]
COMMERCIAL NATURAL GAS COMBUSTION – SPACE HEATING						
Fresno	27.7	23.3	0.8	-4.4	2.1	N/A
Kern	-32.6	-27.4	-0.9	-6.8	-2.5	N/A
Kings	4.0	3.3	0.1	0.2	0.3	N/A
Madera	-0.7	-0.6	0.0	-0.6	-0.1	N/A
Merced	-2.3	-1.9	-0.1	-1.0	-0.2	N/A
San Joaquin	-2.6	-2.2	-0.1	-4.7	-0.2	N/A
Stanislaus	-21.0	-17.7	-0.6	-4.6	-1.6	N/A
Tulare	-2.6	-2.2	-0.1	-1.9	-0.2	N/A
TOTAL	-30.2	-25.4	-0.9	-23.8	-2.3	N/A
COMMERCIAL NATURAL GAS COMBUSTION – WATER HEATING						
Fresno	56.4	47.4	1.6	-0.6	4.3	N/A
Kern	-3.6	-3.0	-0.1	-3.3	-0.3	N/A
Kings	-8.4	-7.0	-0.2	-1.1	-0.6	N/A
Madera	2.4	2.0	0.1	-0.2	0.2	N/A
Merced	2.7	2.3	0.1	-0.4	0.2	N/A
San Joaquin	-1.6	-1.4	0.0	-2.9	-0.1	N/A
Stanislaus	-13.1	-11.0	-0.4	-2.9	-1.0	N/A
Tulare	7.0	5.8	0.2	-0.7	0.5	N/A
TOTAL	41.7	35.0	1.2	-12.2	3.2	N/A
COMMERCIAL NATURAL GAS COMBUSTION – OTHER						
Fresno	86.5	81.7	25.8	12.2	9.1	N/A
Kern	18.1	11.8	1.1	8.2	2.7	N/A
Kings	-9.3	-33.8	-5.1	-1.1	-1.0	N/A
Madera	3.4	3.4	0.1	0.4	0.3	N/A
Merced	-14.1	-6.1	-10.9	-0.8	-1.6	N/A
San Joaquin	225.4	133.8	4.4	94.0	7.4	N/A
Stanislaus	107.5	70.8	1.3	46.8	-1.3	N/A
Tulare	22.8	9.7	2.2	-0.7	1.3	N/A
TOTAL	440.3	271.2	19.0	158.9	17.0	N/A

(1) The District only reports ROG to ARB. As noted in Section XII, ROG is the same as VOC.

(2) At this time, the District does not calculate PM2.5 emissions. PM2.5 emissions can be estimated using the speciation profiles found in Section XII.

XV. Revision History

2007. The methodology was reformatted to the new District standard. Process rates were updated. The IC engine NOx emission factor was changed to be consistent other methodologies. The previous emission factor assumed greater than 90% load. The current methodology assumes less than 90% load per stationary IC engine. This resulted in a small reduction in NOx.

2006. This is a new District methodology based upon one developed by Sonoma Technology Inc. as part of the Central California Ozone Study.

XVI. Update Schedule

In an effort to provide inventory information to ARB and other District programs and maximize limited resources, the District has developed an update cycle based on emissions within the source category as shown in Table 13.

Table 13. Area source update frequency criteria.

Total Emissions (tons/day)	Update Cycle (years)
<=1	4
>1 and <= 2.5	3
>2.5 and <=5	2
>5	1

Since EIC 060-995-0110-0000 has emissions of greater than 2.5 tons but less than 5 tons per day, these area source estimates will be updated every two years.

Table 14. District methodology update frequency.

EIC	Frequency (years)	Source of Emissions (Point Source Inventory / Data Gathering)
060-020-0110-0000	2	Point Source Inventory / Data Gathering
060-030-0110-0000	2	Point Source Inventory / Data Gathering
060-995-0110-0000	2	Point Source Inventory / Data Gathering

XVII. References

1. ARB CEIDARs database. http://www.arb.ca.gov/app/emsinv/dist/rpts/sub_eic.php

2. California Gas Utilities. California gas report 2005 supplement. http://www.pge.com/pipeline/library/regulatory/downloads/cgr05.pdf.

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XVIII. Appendices

Appendix A. Inventory Reconciliation Codes

Appendix A. Inventory Reconciliation Codes

Table 15. EIC, SCC and SIC codes in the District's 2006 point source inventory that reconciled to REIC 060-020-0110-000.

EIC	SCC	SCCN	SIC
60-020-0110-0000	10500206	EXTCOMB BOILER - SPACE HEATER - COMMERCL-INSTUTNL - NATURAL GAS	8062

Table 16. EIC, SCC and SIC codes in the District's 2006 point source inventory that reconciled to REIC 060-030-0110-000.

EIC	SCC	SCCN	SIC
None	None	None	None

Table 17. EIC, SCC and SIC codes in the District's 2006 point source inventory that reconciled to REIC 060-995-0110-000.

EIC	SCC	SCCN	SIC
52-005-0110-0000	10300602	EXTCOMB BOILER - COMMERCL-INSTUTNL - NATURAL GAS - 10-100MMBTU/HR	723, 2011, 2022, 2032, 2033, 2048, 2099, 4221
	10300603	EXTCOMB BOILER - COMMERCL-INSTUTNL - NATURAL GAS - <10MMBTU/HR	173, 723, 724, 741
52-010-0110-0000	30290003	FOOD/AGRICULTURE - FUEL-FIRED EQPMNT - PROCESS HEATERS - NAT GAS	5149, 5153, 5812
52-070-0110-0000	39000699	INDUSTRIAL PROCES - INPROCESS FUEL - NATURAL GAS - NOT CLASSIFIED	723
60-005-0110-0000	10300601	EXTCOMB BOILER - COMMERCL-INSTUTNL - NATURAL GAS - >100MMBTU/HR	7261, 8733
	10300602	EXTCOMB BOILER - COMMERCL-INSTUTNL - NATURAL GAS - 10-100MMBTU/HR	4612, 4931, 5143, 5149, 5162, 7211, 7213, 7218, 7261, 7389, 8062, 8063, 8069, 8211, 8221, 8222, 8322
	10300603	EXTCOMB BOILER - COMMERCL-INSTUTNL - NATURAL GAS - <10MMBTU/HR	4612, 4952, 4959, 4961, 5144, 5162, 5191, 5541, 7211, 7216, 7261, 7532, 7694, 8062, 8221, 8222, 9199

60-010-0110-0000	30290003	FOOD/AGRICULTURE - FUEL-FIRED EQPMNT - PROCESS HEATERS - NAT GAS	2431, 3273
	30600105	PETROLEUM INDRY - PETROLEUM REFNG - PROCESS HEATERS - NATURAL GAS-FIRED	4612, 5171, 7538
	31000404	OIL & GAS PRODN - FUEL-FIRED EQPMNT - PROCESS HEATERS - NATURAL GAS	4612, 4911
	31390003	ELECTRICAL EQPMNT - FUEL FIRED EQPMNT - PROCESS HEATERS - NAT GAS	7694
	39990003	INDUSTRIAL PROCES - MIS IND-FUEL EQPT - PROCESS HEATERS - NAT GAS	4212, 7218, 7532
60-012-0110-0000	40201001	ORGANIC SOLVENT - SURFACE COATING - OVEN HEATER - NATURAL GAS	2759, 5511, 7336, 7532, 7629
60-040-0110-0000	20300201	INTERNLCOMBUSTION - COMMERCL-INSTUTNL - NATURAL GAS - RECIPROCATING	4612, 4813, 4922, 4923, 4924, 4941, 4952, 4971, 5141, 5311, 5541, 5651, 5945, 6022, 7389, 8062, 8069
	20300301	INTERNLCOMBUSTION - COMMERCL-INSTUTNL - GASOLINE - RECIPROCATING	9532
60-045-0110-0000	20300202	INTERNLCOMBUSTION - COMMERCL-INSTUTNL - NATURAL GAS - TURBINE	4612, 4922, 4931, 4952, 9223
60-070-0110-0000	39000689	INDUSTRIAL PROCES - INPROCESS FUEL - NATURAL GAS - NOT CLASSIFIED	4952, 5511, 7532
60-995-0110-0000	20100202	INTERNLCOMBUSTION - ELECTRIC GENERATN - NATURAL GAS - RECIPROCATING	4841, 4932, 9221
	20300201	INTERNLCOMBUSTION - COMMERCL-INSTUTNL - NATURAL GAS - RECIPROCATING	4111, 9224
	30291001	FOOD/AGRICULTURE - FUEL-FIRED EQPMNT - BROILING FOOD - NATURAL GAS	2011, 5812, 7996
130-130-0110-0000	30390013	PRIMARY METALS - FUEL-FIRED EQPMNT - INCINERATORS - NAT GAS	7694
	39990013	INDUSTRIAL PROCES - MIS IND-FUEL EQPT - INCINERATORS - NAT GAS	4953, 7261