UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

OFFICE OF THE
REGIONAL ADMINISTRATOR

August 21, 2008

Mike Jackson, Sr.
Chairman
Quechan Tribal Council
P.O. Box 1899
Yuma, AZ 85366

Dear Chairman Jackson:

This letter provides information on the status of fine particle ($PM_{2.5}$) air pollution in the area where your reservation is located. $PM_{2.5}$ pollution represents one of the most significant barriers to clean air facing us today. Health studies link these tiny particles – about $1/30^{th}$ the diameter of a human hair – to serious human health problems including aggravated asthma, increased respiratory symptoms such as coughing and difficult or painful breathing, chronic bronchitis, decreased lung function, and even premature death in people with heart and lung disease. $PM_{2.5}$ pollution can remain suspended in the air for long periods of time and create public health problems far away from emission sources. Reducing levels of $PM_{2.5}$ pollution is an important part of our commitment to clean, healthy air.

Your reservation is located in an area that EPA is proposing to designate as nonattainment for the 2006 $PM_{2.5}$ air quality standard. Consistent with section 107(d) (1) of the Clean Air Act, this letter is to inform you that EPA intends to designate your reservation as nonattainment for the 2006 $PM_{2.5}$ health standard. We also intend to provide copies of this letter to Tribal Environmental Directors along with a copy of our supporting analysis for your reference. This analysis describes EPA's review of the air quality data, emissions data, and other related information for the area surrounding your reservation. If you would like to provide additional information about the $PM_{2.5}$ status of your reservation or adjoining areas for our consideration, please send it to us by October 20, 2008.

EPA has taken steps to reduce fine particle pollution across the country, such as implementing the Clean Diesel Program, which has reduced emissions from highway, non-road and stationary diesel engines. In addition, implementation plans developed by the state to attain the 1997 $PM_{2.5}$ standards will also help reduce unhealthy levels of fine particle pollution.

We intend to make final designation decisions for the 2006 24-hour $PM_{2.5}$ standards by December 18, 2008. If you have any questions, please do not hesitate to have your staff contact Colleen McKaughan at 520-498-0118. We look forward to a continued dialogue with you as we work together to implement the $PM_{2.5}$ standards.

Sincerely,

Wayne Nastri
Regional Administrator

Enclosure

cc: Arlene Kingery, Environmental Director

Attachment 1

CALIFORNIA
Area Designations For the
24-Hour Fine Particle National Ambient Air Quality Standard

The table below identifies the counties in California that EPA intends to designate as not attaining the 2006 24-hour fine particle ($PM_{2.5}$) standard.[1] A county will be designated as nonattainment if it has an air quality monitor that is violating the standard or if the county is determined to be contributing to the violation of the standard.

Area	California Recommended Nonattainment Counties	EPA's Intended Nonattainment Counties
Butte County	Butte County - Partial	Butte County
Imperial County	Imperial County - Partial	Imperial County
Sacramento County	Sacramento County	Sacramento County Yolo County Placer County – Partial El Dorado County – Partial Solano County - Partial
San Francisco Bay Area	Sonoma County – Partial Napa County Marin County San Francisco County Contra Costa County Alameda County Santa Clara County San Mateo County Solano County - Partial	Sonoma County – Partial Napa County Marin County San Francisco County Contra Costa County Alameda County Santa Clara County San Mateo County Solano County - Partial
San Joaquin Valley Air Basin	San Joaquin County Stanislaus County Merced County Madera County Fresno County Kings County Tulare County Kern County - Partial	San Joaquin County Stanislaus County Merced County Madera County Fresno County Kings County Tulare County Kern County - Partial
South Coast Air Basin	Los Angeles County – Partial San Bernardino County Partial Riverside County – Partial Orange County	Los Angeles County – Partial San Bernardino County Partial Riverside County – Partial Orange County
Yuba County Sutter County	Yuba County – Partial Sutter County - Partial	Yuba County Sutter County

EPA intends to designate the remaining counties in the state as attainment/unclassifiable.

[1] EPA designated nonattainment areas for the 1997 fine particle standards in 2005. In 2006, the 24-hour $PM_{2.5}$ standard was revised from 65 micrograms per cubic meter (average of 98th percentile values for 3 consecutive years) to 35 micrograms per cubic meter; the level of the annual standard for PM2.5 remained unchanged at 15 micrograms per cubic meter (average of annual averages for 3 consecutive years).

EPA Technical Analysis for Imperial County

Pursuant to section 107(d) of the Clean Air Act, EPA must designate as nonattainment those areas that violate the NAAQS and those areas that contribute to violations. This technical analysis for Imperial County identifies the monitor that violates the 24-hour $PM_{2.5}$ standard and evaluates the county contribution to fine particle concentrations in the area. EPA has evaluated Imperial County based on the weight of evidence of the following nine factors recommended in EPA guidance and any other relevant information:

- pollutant emissions
- air quality data
- population density and degree of urbanization
- traffic and commuting patterns
- growth
- meteorology
- geography and topography
- jurisdictional boundaries
- level of control of emissions sources

Figure 1 is a map of the area and other relevant information such as the locations and design values of air quality monitors, the metropolitan area boundary, and counties recommended as nonattainment by the State.

Imperial County is an existing 8-hour ozone nonattainment area. The State of California did not recommend that the boundaries of the $PM_{2.5}$ area coincide with the existing nonattainment boundaries. Rather, the State of California recommended that only the City of Calexico be designated as nonattainment for $PM_{2.5}$. (See Figure1)

Imperial County, CA

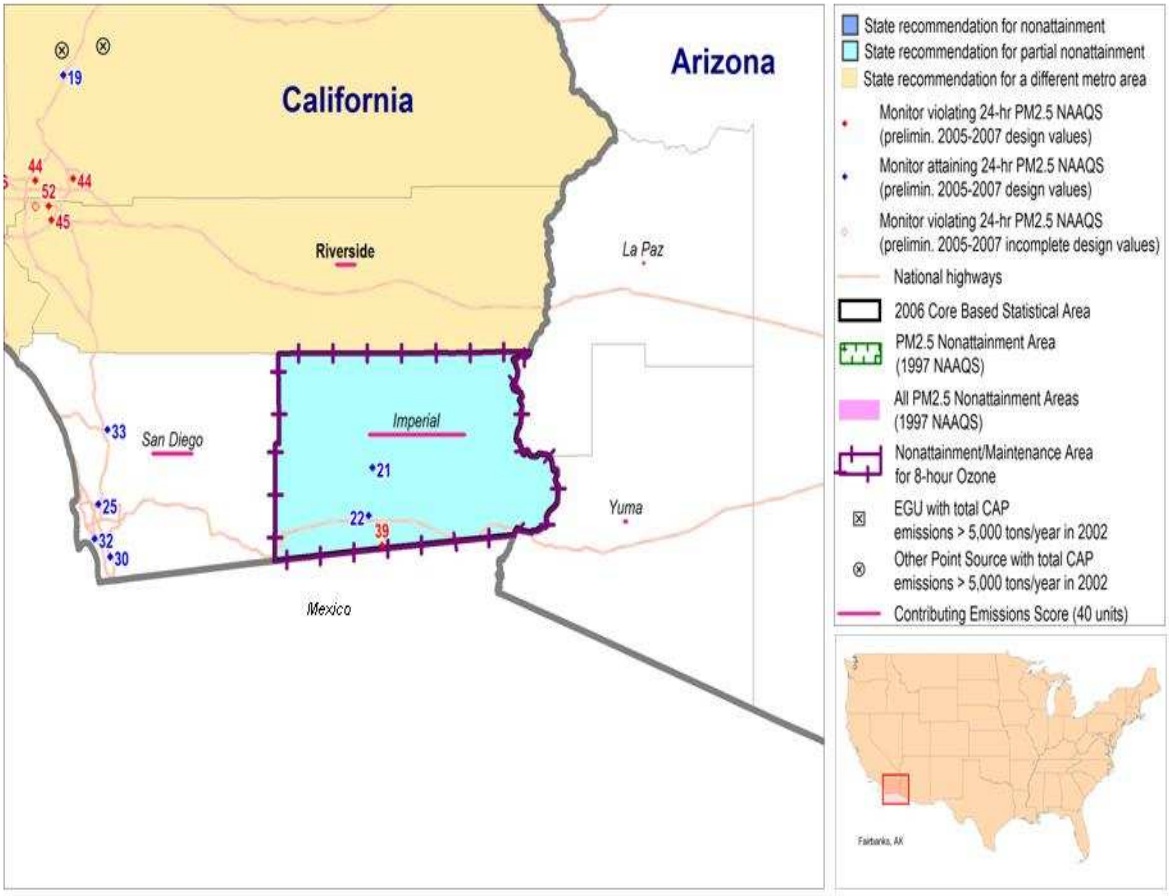


Figure 1

Counties labeled in bold reflect NAAs under 1997 NAAQS

The California Air Resources Board (CARB) sent a letter to EPA, dated December 17, 2007, recommending that only the City of Calexico in Imperial County be designated as "nonattainment" for the 2006 24-hour $PM_{2.5}$ standard based on the most recent three years of air quality data that were available in December 2007, for 2004 – 2006. These data are from Federal Reference Method (FRM) and Federal Equivalent Method (FEM) monitors located in Imperial County.

Air quality monitoring data on the composition of fine particle mass are available from the EPA Chemical Speciation Network and the IMPROVE monitoring network, as well as from data derived by CARB from the Calexico site. Analysis of these data indicates that the days with the highest fine particle concentrations occur predominantly in the winter, and the average chemical composition of the highest days is typically characterized by high levels of organic carbon (52%), nitrate (22%), sulfate (6%), and other components (14%).

Area	State Recommended Nonattainment Counties	EPA's Intended Nonattainment Counties
City of Calexico	Imperial County (P)	Imperial County

Based on EPA's 9-factor analysis described below, EPA believes that Imperial County in California should be designated nonattainment for the 24-hour $PM_{2.5}$ air-quality standard, based upon currently available information.

The State recommended designating a portion of Imperial County as nonattainment. EPA has taken this request under consideration, but finds that the information provided to date does not adequately support a partial county designation. Accordingly, all of Imperial County is included in EPA's intended designation. EPA will consider any additional information provided by the State in making final decisions on the designations.

Several Factors led EPA to recommend a significantly larger $PM_{2.5}$ nonattainment area than recommended by California. Most importantly, the recommended boundary does not include the population that would be exposed to high levels of $PM_{2.5}$ represented by the Calexico design value, nor does it address transport that can occur from traffic and other sources within the relatively flat, valley floor of the Imperial Valley. In addition, the State relied on future mobile source controls at a statewide level to address NOx emissions and, therefore, discounted mobile sources as an important consideration in their analysis. EPA believes that mobile sources are an important contributor to $PM_{2.5}$ emissions in Imperial County.

The following is a summary of the 9-factor analysis for Imperial County.

Factor 1: Emissions data

For this factor, EPA evaluated county level emission data for the following $PM_{2.5}$ components and precursor pollutants: "$PM_{2.5}$ emissions total," "$PM_{2.5}$ emissions carbon," "$PM_{2.5}$ emissions other," "SO_2," "NO_x," "VOCs," and "NH_3." "$PM_{2.5}$ emissions total" represents direct emissions of $PM_{2.5}$ and includes: "$PM_{2.5}$ emissions carbon," "$PM_{2.5}$ emissions other", "primary sulfate

(SO_4)", and "primary nitrate". (Although primary sulfate and primary nitrate, which are emitted directly from stacks rather than forming in atmospheric reactions with SO_2 and NO_x, are part of "$PM_{2.5}$ emissions total," they are not shown in Table 1 as separate items). "$PM_{2.5}$ emissions carbon" represents the sum of organic carbon (OC) and elemental carbon (EC) emissions, and "$PM_{2.5}$ emissions other" represents other inorganic particles (crustal). Emissions of SO_2 and NO_x, which are precursors of the secondary $PM_{2.5}$ components sulfate and nitrate, are also considered. VOCs (volatile organic compounds) and NH_3 (ammonia) are also potential $PM_{2.5}$ precursors and are included for consideration.

Emissions data were derived from the 2005 National Emissions Inventory (NEI), version 1. See http://www.epa.gov/ttn/naaqs/pm/pm25_2006_techinfo.html.

EPA also considered the Contributing Emissions Score (CES) for each county. The CES is a metric that takes into consideration emissions data, meteorological data, and air quality monitoring information to provide a relative ranking of counties in and near an area. Note that this metric is not the exclusive way for consideration of data for these factors. A summary of the CES is included in attachment 2, and a more detailed description can be found at: http://www.epa.gov/ttn/naaqs/pm/pm25_2006_techinfo.html#C.

Table 1shows emissions of $PM_{2.5}$ and precursor pollutants components (given in tons per year) and the CES for Imperial County.

Table 1. $PM_{2.5}$ Related Emissions (tons per year) Data and Contributing Emissions Score

County	State Recommended Non-attainment?	CES	$PM_{2.5}$ emissions total	$PM_{2.5}$ emissions carbon	$PM_{2.5}$ emissions other	SO_2	NOx	VOCs	NH_3
Imperial	Yes (P)	100	3,422	831	2,592	2,171	12,445	11,885	18,992

P = partial. Data for emissions apply to the whole County.

Imperial County has 3,422 tpy of total $PM_{2.5}$, most of which is $PM_{2.5}$ other than organic carbon. Imperial County has high levels of $PM_{2.5}$ precursors relative to total $PM_{2.5}$. The nitrogen oxides (NOx), volatile organic compounds (VOC) and ammonia (NH3) emission levels in Imperial County are substantial while the organic carbon emissions are much lower. CARB states that the two key components of $PM_{2.5}$ are ammonium nitrate, which is a regional pollutant primarily derived from reactions with NOx emissions from mobile source activity, and organic carbon, which is a more localized pollutant related to burning.

With respect to CES values, Imperial County has a score of 100. Imperial County is bordered by San Diego and Riverside Counties in California, Yuma and La Paz Counties in Arizona, and Mexicali in Baja California, Mexico. San Diego, Yuma and La Paz are attaining the $PM_{2.5}$ standard. Riverside is located in the South Coast area which is nonattainment for the 1997 $PM_{2.5}$ standard and has been recommended as nonattainment for the 2006 $PM_{2.5}$ standard. Based on emissions levels and CES values, Imperial County is a candidate for a 24-hour $PM_{2.5}$ nonattainment designation and, therefore, requires further analysis.

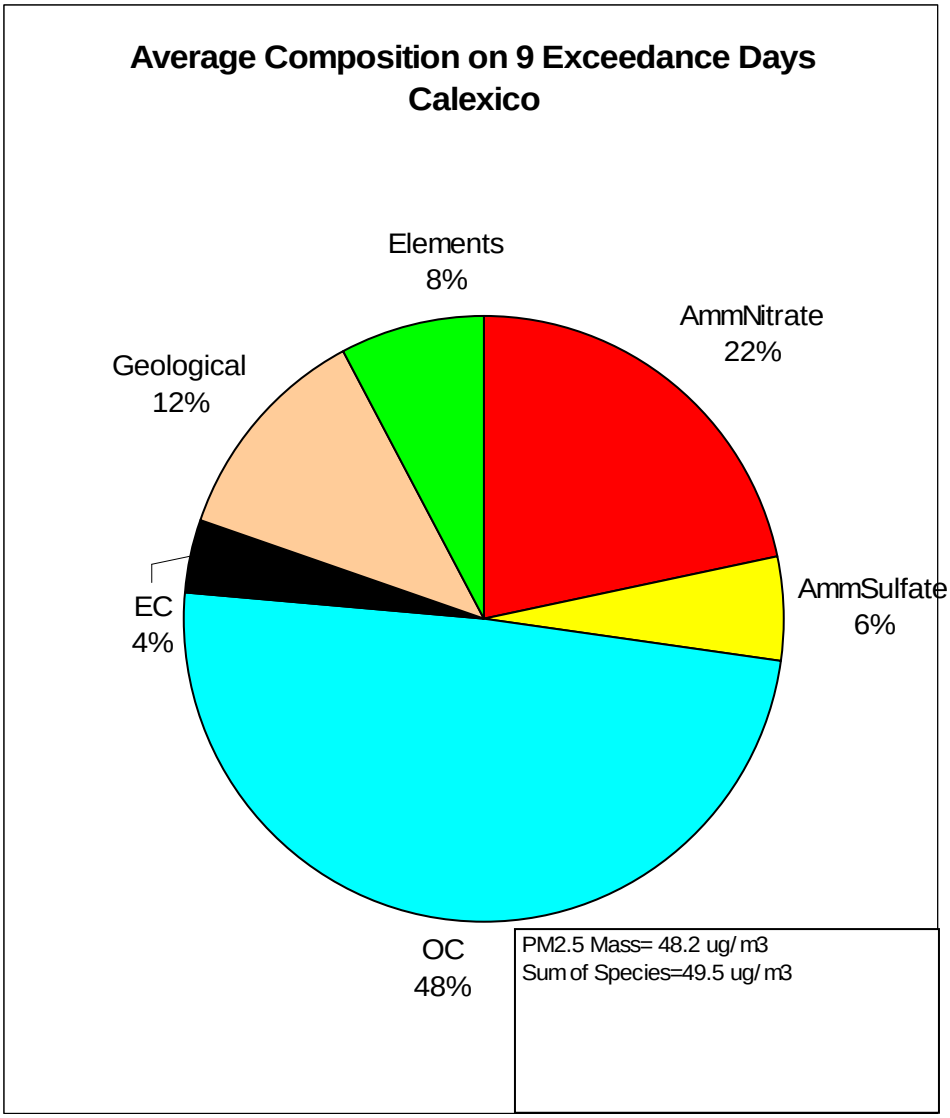
CARB argues that "the Calexico city level nonattainment boundary is appropriate due to the unique international pollutant transport problem between Calexico and Mexicali, Mexico".

CARB also states that Calexico is distinct from the rest of Imperial County based on the distribution and nature of emission sources. California's letter recommending that the City of Calexico be designation as nonattainment, states that "Calexico exceedances of the federal $PM_{2.5}$ standards are the result of urban activity associated with the densely population international Calexico/Mexicali border region." While EPA believes that Mexicali likely impacts Calexico and Imperial County, the data provided by CARB is not sufficient to fully discount emissions from Imperial County which could contribute to exceedances at monitoring sites in the County.

Table 2. Area Source Emissions (Tons per day)	
IMPERIAL COUNTY Source: CARB Almanac website (2007)	
SOURCE	$PM_{2.5}$ %
Residential Fuel Combustion	0.09
Farming Operations	3.86
Construction/Demolition	0.2
Paved Road Dust	0.65
Unpaved Road Dust	3.41
Fugitive Windblown Dust	26.63
Fires	0
Managed Burning & Disposal	2.63
Cooking	0.04
Total Area Wide	92%
Area Wide percent of total	68%
Total All	40.59%

Table 2 indicates that for the entire Imperial County, fugitive windblown dust is a major portion of the $PM_{2.5}$ section of the County's inventory, followed by farming operations, unpaved road dust and managed burning and disposal. CARB argues that this chart does not reflect the situation in Calexico and that the $PM_{2.5}$ emissions for Calexico are different than those of the rest of the County.

The pie chart below shows the average $PM_{2.5}$ composition for the City of Calexico on exceedance days at the Calexico Ethel Street site. It indicates that organic carbon represents 48% of the total followed by ammonium nitrate at 22%. CARB states that the sources affecting Calexico are waste and wood burning plus vehicle exhaust from the large amount of vehicle traffic at the border. While it appears that the proportion of organic carbon is higher in Calexico than the rest of the county, the sources are vehicles, residential wood combustion, agricultural and prescribed burning, and stationary combustion sources. All these sources are present on both sides of the border. CARB did not provide any studies that demonstrate the proportion of emissions that come from Mexico for these sources.


Average Composition on 9 Exceedance Days
Calexico
Elements
8%
AmmNitrate
22%
Geological
12%
AmmSulfate
6%
EC
4%
OC
48%
PM2.5 Mass= 48.2 ug/m3
Sum of Species=49.5 ug/m3

In the absence of clear data from CARB to differentiate the air quality issues in Calexico from the rest of the county and show that emissions from Mexico only impact Calexico, EPA would propose to designate all of Imperial County as nonattainment for $PM_{2.5}$ unless the remaining factors in our analysis indicate otherwise.

Factor 2: Air quality data

This factor considers the 24-hour $PM_{2.5}$ design values in micrograms per cubic meter ($\mu g/m^3$) for air quality monitors in counties in Imperial County based on data for the 2005-2007 period. A monitor's design value indicates whether that monitor attains a specified air quality standard. The 24-hour $PM_{2.5}$ standards are met when the 3-year average of a monitor's 98^{th} percentile values are 35 $\mu g/m^3$ or less. A design value is only valid if minimum data completeness criteria are met.

The 24-hour $PM_{2.5}$ design values for Imperial County are shown in Table 3.

Table 3. Air Quality Data

County	State Recommended Nonattainment?	24-hr PM2.5 Design Value 2004-06 ($\mu g/m^3$)	24-hr PM2.5Design Values 2005-07 ($\mu g/m^3$)
Imperial County	Yes (P)	40	39
P = partial			

The violating monitor in Imperial County is located in the City of Calexico at Ethel Street. There are two other monitoring sites in Imperial County, in the cities of El Centro and Brawley, which are located north of Calexico. Monitors in these cities have not recorded violations of the $PM_{2.5}$ standard. CARB argues that a nonattainment area including just the City of Calexico would be appropriate given that the other two monitors did not record violations of the standard. However, it is EPA's position that the whole County with the violating monitor should be included in the nonattainment area and the contributions to the total $PM_{2.5}$ levels at the violating monitor should be considered, unless information is provided justifying a more limited area designation. Imperial County shows violations of the 24-hour $PM_{2.5}$ standard. Therefore, this county is a candidate for a 24-hour $PM_{2.5}$ nonattainment designation.

Eligible monitors for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) at population-oriented locations with a FRM or FEM monitor. All data from Special Purpose Monitors (SPM) using an FRM, FEM, or Alternative Reference Method (ARM) which has operated for more than 24 months is eligible for comparison to the relevant NAAQS, subject to the requirements given in the October 17, 2006 Revision to Ambient Air Monitoring Regulations (71 FR 61236). All monitors used to provide data must meet the monitor siting and eligibility requirements given in 71 FR 61236 to 61328 in order to be acceptable for comparison to the 24-hr $PM_{2.5}$ NAAQS for designation purposes.

Factor 3: Population density and degree of urbanization (including commercial development)

Table 4 shows the 2005 population for all of Imperial County, as well as the population density. Population data gives an indication of whether it is likely that population-based emissions might contribute to violations of the 24-hour $PM_{2.5}$ standards.

Table 4. Population				
County/City	State Recommended Nonattainment	2005 Population	2005 Population Density (pop/sq mi)	% Population Change
Imperial	Yes (P)	155,862	39	9%

Figure 3, "Imperial County. Population Density, Truck and Commuting Traffic" indicates that population density in Imperial County is very sparse, only 39 people per square mile. Based solely on this factor, Imperial County would not be considered for designation as nonattainment. Calexico, El Centro, and Brawley include most of the population in Imperial County. This factor argues for a partial county designation that includes these three cities but not the rest of the county.

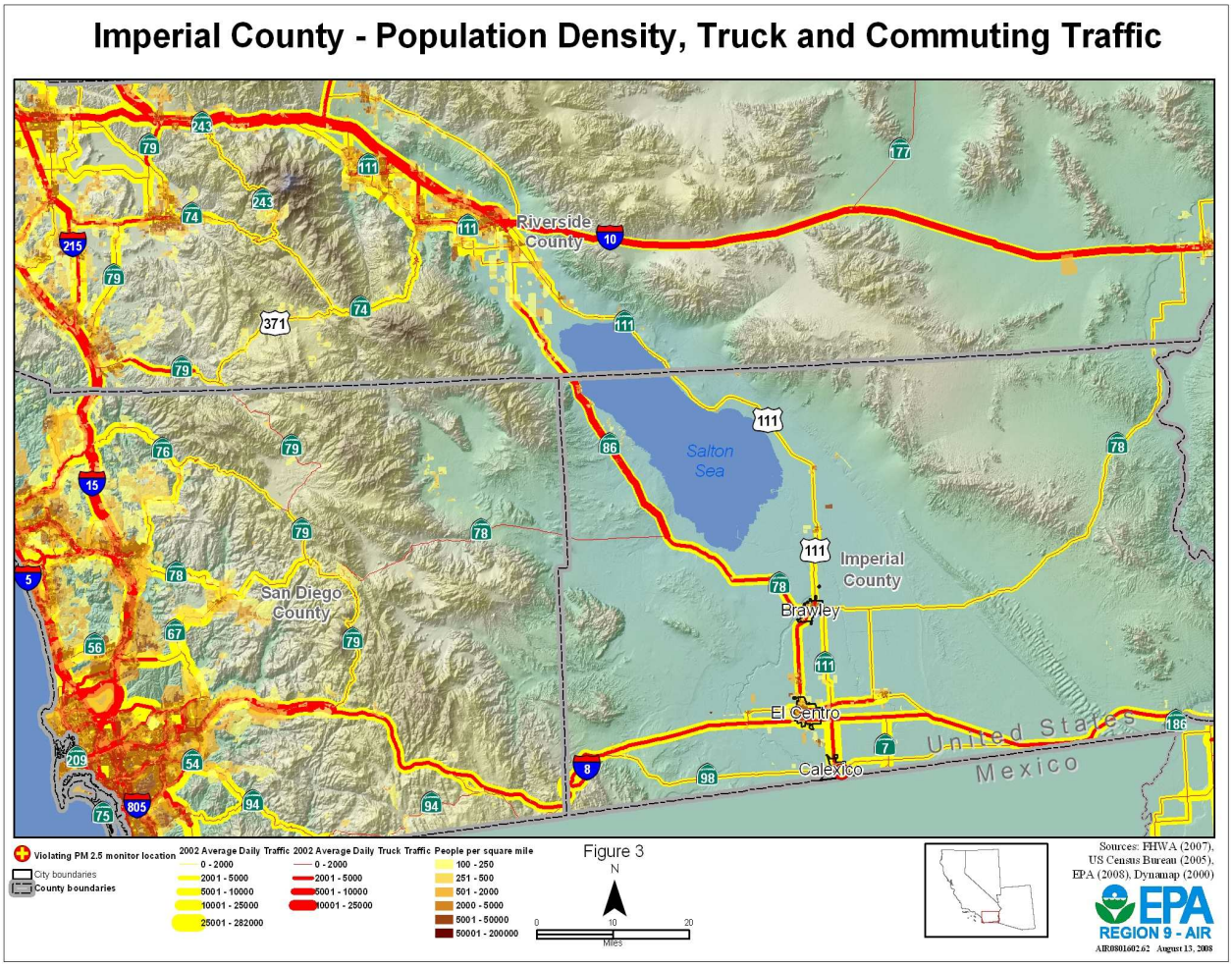


Figure 3

Factor 4: Traffic and commuting patterns

This factor considers the number of commuters in each county who drive to Imperial County, the percent of total commuters in each county who commute to Imperial County, as well as the total Vehicle Miles Traveled (VMT) for Imperial County in thousands of miles (see Table 5). A county with numerous commuters is generally an integral part of an urban area and is likely contributing to fine particle concentrations in the area.

Figure 3 above shows both the average daily traffic and average daily truck traffic within Imperial County.

Table 5. Traffic and Commuting Patterns				
County	State Recommended Non-attainment?	2005 VMT (Million Miles annually	Number of cars commuting to any violating counties	Percent Commuting to any violating counties
Imperial County	Yes (P)	2,189	40,870	95 %
P = partial				

Interstate 8 carries traffic from Arizona all the way to San Diego through Imperial County**.** Interstate 8 carries approximately 10,357,143 cars per year, or 28,376 cars per day, and 534274 trucks per year, or 1,464 trucks per day. Trucks coming from Mexico are permitted to travel 20 miles into Imperial County which accounts for the heavy truck traffic indicated on the map from Calexico to El Centro.

By designating the entire County as nonattainment for $PM_{2.5}$, EPA would include all major traffic routes and the motor vehicle emissions from the associated car and truck traffic which has been identified as a major contributor to $PM_{2.5}$ levels.

The 2005 VMT data used for table 5 and 6 of the 9-factor analysis has been derived using methodology similar to that described in "Documentation for the final 2002 Mobile National Emissions Inventory, Version 3, September 2007, prepared for the Emission Inventory Group, U.S. EPA. This document may be found at: atftp://ftp.epa.gov/EmisInventory/2002finalnei/documentation/mobile/2002_mobile_nei_version_3_report_092807.pdf. The 2005 VMT data were taken from documentation which is still draft, but which should be released in 2008.

Factor 5: Growth rates and patterns

This factor considers population growth for 2000-2005 and growth in vehicle miles traveled (VMT) for 1996-2005 for Imperial County. A county with rapid population or VMT growth is generally an integral part of an urban area and likely to be contributing to fine particle concentrations in the area. In addition, such a county could be appropriate for implementing mobile source and other emission control strategies, thus warranting inclusion in the nonattainment area.

Table 6 below shows population, population growth, VMT and VMT growth for Imperial County.

Table 6. Population and VMT Growth and Percent Change					
County	Population (2005)	Population Density (2005)	Population % change (2000 - 2005)	2005 VMT (millions mi)	VMT % Change 1996 -2005
Imperial County	155,862	39	9%	2,189	(1)

Imperial County is primarily a rural, agricultural area with few people except in the major cities of Calexico, El Centro and Brawley. The County grew 9% in the years 2000-2005. Between 2005 and 2010, the population of Imperial County is projected to increase another 9%, compared to a significantly higher growth rate of 50% for the City of Calexico from 2000-2010. CARB states that the growth in Imperial is small compared to the growth on the Mexican side of the border. Mexicali had approximately 922,000 residents in 2006 and is expected to have over 1,045,000 residents in 2010, which is a growth rate of approximately 13%.

Imperial County had moderate (9%) population growth between 2000 and 2005, and one area of high population growth (Calexico) adjacent to the border with Mexico. The City of Calexico also includes the violating monitor. While EPA agrees that emissions from the Mexican side of the border are likely affecting Calexico, CARB did not quantify the emissions from Mexico. Consequently the analysis presented by CARB does not justify limiting the nonattainment area to the Calexico city boundaries. By designating the entire County as nonattainment for $PM_{2.5}$, EPA would include the rapidly growing City of Calexico along with other urban centers such as El Centro and Brawley.

Factor 6: Meteorology (weather/transport patterns)

Climatic conditions in the Salton Sea Air Basin are governed by the large-scale sinking and warming air in the subtropical high-pressure center of the Pacific Ocean. The high pressure ridge blocks most mid-latitude storms except in the winter when the high-pressure ridge is weakest and farther south. Similarly, the coastal mountains prevent the intrusion of any cool damp marine air from the coast. Because of the weakened storms and the mountainous barrier, the Salton Sea Air Basin has hot summers, mild winters, and little rainfall. The flat terrain of the Valley and the strong temperature differentials created by intense solar heating produces moderate winds and deep thermal convection.

EPA analysis of wind trajectories on days with high levels of $PM_{2.5}$ in Calexico confirms that on many days there is a potential contribution from emissions from the Mexican side of the border. However, the NOAA HYSPLIT back trajectories for January 8, 2006 and January 17, 2006, shown in figures 4 and 5, indicate that there is a potential contribution from emissions from throughout Imperial County to the $PM_{2.5}$ elevated levels at the Calexico Ethel Street monitor on those days.

By designating the entire County as nonattainment for $PM_{2.5}$, EPA would include the emissions from areas identified as potential contributors to $PM_{2.5}$ levels.

The meteorology factor is also considered in each county's Contributing Emissions Score because the method for deriving this metric included an analysis of trajectories of air masses for high $PM_{2.5}$ days.

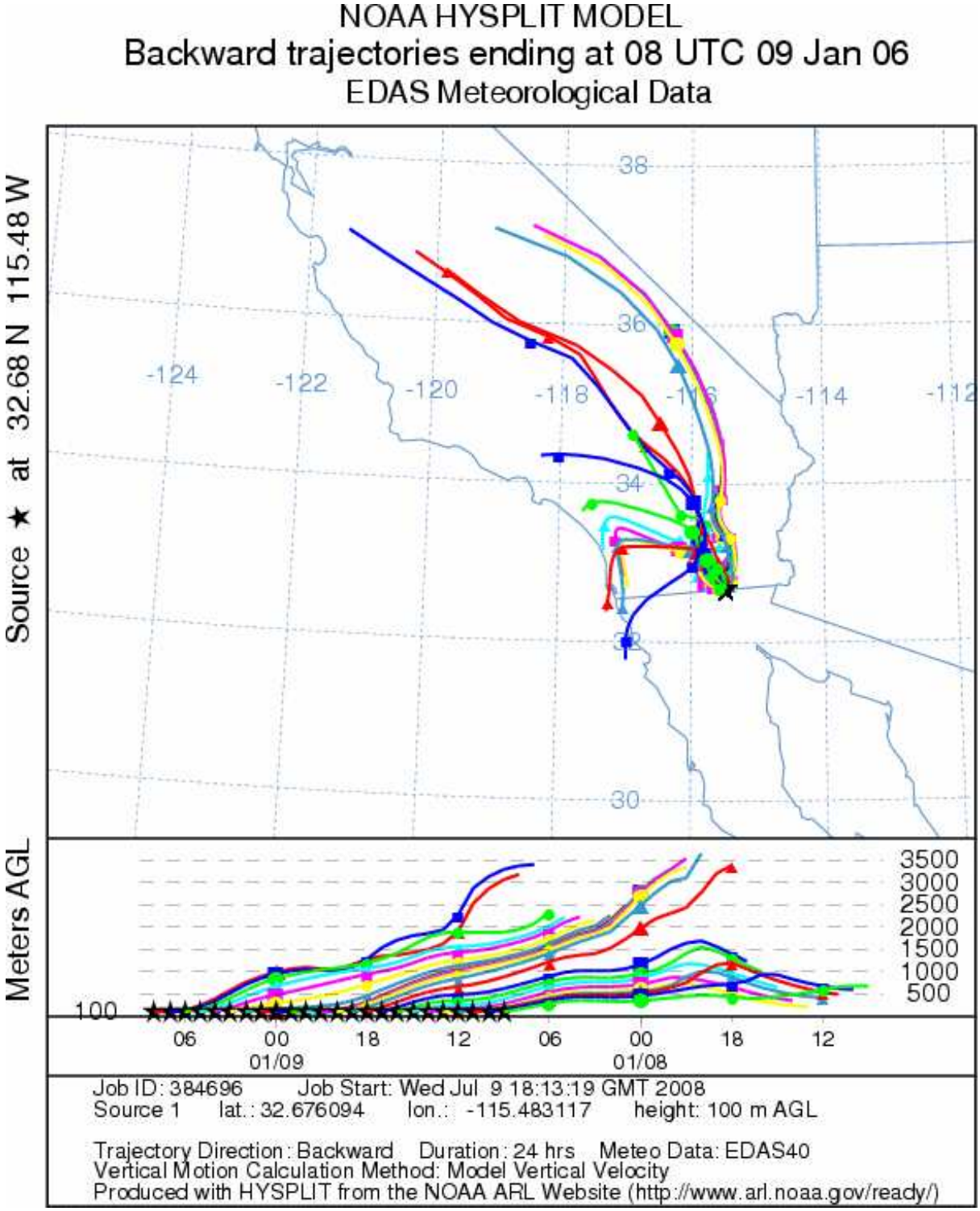
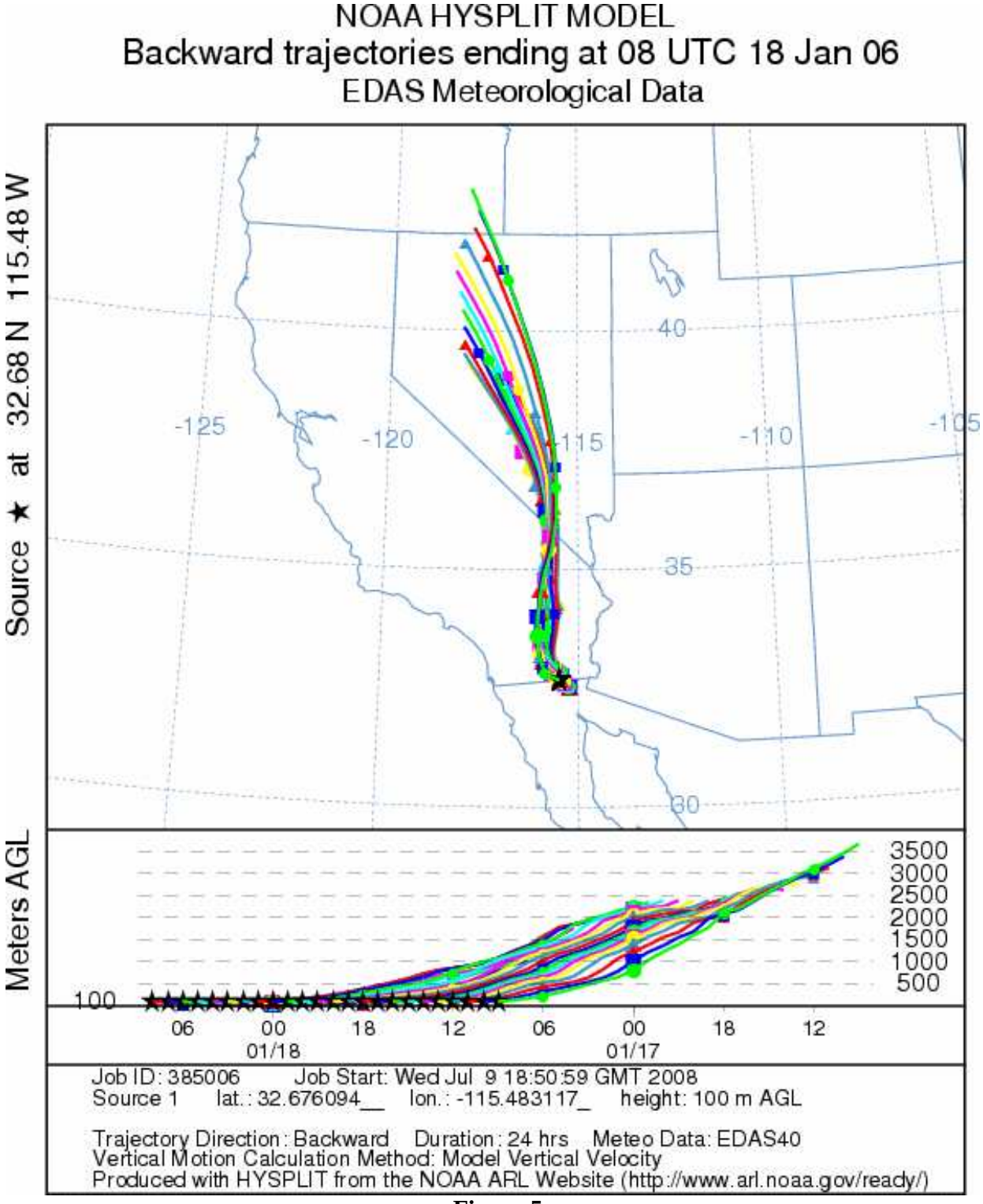

NOAA HYSPLIT MODEL
Backward trajectories ending at 08 UTC 09 Jan 06
EDAS Meteorological Data
Source ★ at 32.68 N 115.48 W
38
36
34
32
30
-124
-122
-120
-118
-116
-114
-112
Meters AGL
3500
3000
2500
2000
1500
1000
500
100
06
00
18
12
06
00
18
12
01/09
01/08
Job ID: 384696 Job Start: Wed Jul 9 18:13:19 GMT 2008
Source 1 lat.: 32.676094 lon.: -115.483117 height: 100 m AGL
Trajectory Direction: Backward Duration: 24 hrs Meteo Data: EDAS40
Vertical Motion Calculation Method: Model Vertical Velocity
Produced with HYSPLIT from the NOAA ARL Website (http://www.arl.noaa.gov/ready/)

Figure 4


NOAA HYSPLIT MODEL
Backward trajectories ending at 08 UTC 18 Jan 06
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-125
-120
-115
-110
-105
40
35
30
Meters AGL
3500
3000
2500
2000
1500
1000
500
100
06
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18
12
06
00
18
12
01/18
01/17
Job ID: 385006 Job Start: Wed Jul 9 18:50:59 GMT 2008
Source 1 lat.: 32.676094__ lon.: -115.483117_ height: 100 m AGL
Trajectory Direction: Backward Duration: 24 hrs Meteo Data: EDAS40
Vertical Motion Calculation Method: Model Vertical Velocity
Produced with HYSPLIT from the NOAA ARL Website (http://www.arl.noaa.gov/ready/)

Figure 5

Factor 7: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis looks at physical features of the land that might have an effect on the air shed and, therefore, on the distribution of $PM_{2.5}$ over Imperial County.

Imperial Valley is located within the Salton Sea Air Basin along with the desert portion of Riverside County. Imperial County consists of 4,175 square miles, bordering Mexico to the south, Riverside County to the north, San Diego County to the west, and the State of Arizona on the east. The Imperial Valley is a part of the larger Salton Trough. Also included in the Salton Trough is the western half of the Mexicali Valley and the Colorado River delta in Mexico. This trough is a very flat basin (see Figure 6) surrounded by mountains: the Peninsular Ranges to the west, the Chocolate, Orocopia and Cargo Muchacho Mountains to the east. Most of the trough is below sea level and is predominantly desert with agricultural land. Imperial Valley does not have any geographical or topographical barriers significantly limiting air-pollution transport within its airshed. There are no topographical barriers to separate the City of Calexico from the rest of Imperial County, so this factor does not support a partial county designation, but rather argues for including the entire county in the nonattainment area.


Imperial
Brawley
78
86
El Centro
115
98
Yuha Cutoff
111
Mexicali
MEXICO
2
MEXICO
5
11.40 mi
Image © 2008 DigitalGlobe
© 2008 Tele Atlas
© 2008 Europa Technologies
© 2008 LeadDog Consulting
© 2007 Google™
Figure 6

Factor 8: Jurisdictional boundaries (e.g., existing PM and ozone areas)

In evaluating the jurisdictional boundary factor, consideration should be given to existing boundaries and organizations that may facilitate air quality planning and the implementation of control measures to attain the standard. Areas designated as nonattainment (e.g for $PM_{2.5}$ or 8-hour ozone standard) represent important boundaries for state air quality planning.

The analysis of jurisdictional boundaries considered the planning and organizational structure of Imperial County to determine if the implementation of controls in a potential nonattainment area can be carried out in a cohesive manner.

The major jurisdictional boundary in Imperial County is the Imperial County Air Pollution Control District (APCD). Imperial County APCD will be responsible for developing the PM 2.5 State Implementation Plan and required control strategies.

Imperial County is a nonattainment area for both 8-hour ozone and PM-10. The Imperial County APCD is responsible for developing plans for these pollutants. One of the goals in designating PM 2.5 nonattainment areas is to achieve a degree of consistency with existing ozone and PM-10 nonattainment areas for air quality planning purposes. This argues for making the new PM 2.5 nonattainment area consistent with the existing nonattainment areas, which include the entirety of Imperial County.

Factor 9: Level of control of emission sources

This factor considers emission controls currently implemented for major sources in Imperial County.

The emission estimates on Table 1 (under Factor 1) include any control strategies implemented by California in Imperial County before 2005 that may influence emissions of any component of $PM_{2.5}$ emissions (i.e., total carbon, SO_2, NOx, and crustal $PM_{2.5}$).

Attachment 2

Description of the Contributing Emissions Score

The CES is a metric that takes into consideration emissions data, meteorological data, and air quality monitoring information to provide a relative ranking of counties in and near an area. Using this methodology, scores were developed for each county in and around the relevant metro area. The county with the highest contribution potential was assigned a score of 100, and other county scores were adjusted in relation to the highest county. The CES represents the relative maximum influence that emissions in that county have on a violating county. The CES, which reflects consideration of multiple factors, should be considered in evaluating the weight of evidence supporting designation decisions for each area.

The CES for each county was derived by incorporating the following significant information and variables that impact $PM_{2.5}$ transport:

- Major $PM_{2.5}$ components: total carbon (organic carbon (OC) and elemental carbon (EC)), SO_2, NO_x, and inorganic particles (crustal).
- $PM_{2.5}$ emissions for the highest (generally top 5%) $PM_{2.5}$ emission days (herein called "high days") for each of two seasons, cold (Oct-Apr) and warm (May-Sept)
- Meteorology on high days using the NOAA HYSPLIT model for determining trajectories of air masses for specified days
- The "urban increment" of a violating monitor, which is the urban $PM_{2.5}$ concentration that is in addition to a regional background $PM_{2.5}$ concentration, determined for each $PM_{2.5}$ component
- Distance from each potentially contributing county to a violating county or counties

A more detailed description of the CES can be found at http://www.epa.gov/ttn/naaqs/pm/pm25_2006_techinfo.html#C.