

Technical Support Document for 2008 Ozone NAAQS Designations

California Area Designations for the 2008 Ozone National Ambient Air Quality Standards

Technical Analysis for San Diego County

Figure 1 is a map of the San Diego County, CA nonattainment area for the 2008 ozone NAAQS. The map provides other relevant information including the locations and design values of air quality monitors, county names and boundaries, and indicates EPA's nonattainment designation. Also shown is the boundary of the existing area that is designated nonattainment for the 1997 ozone NAAQS.

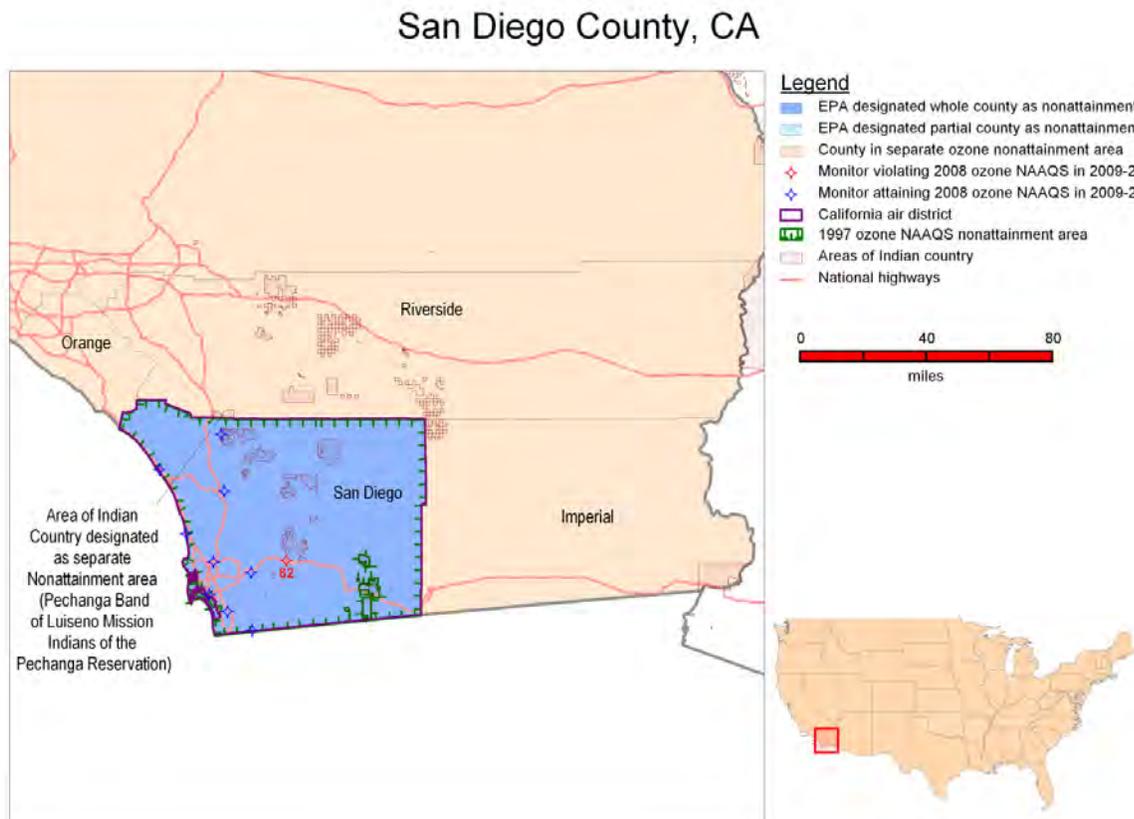


Figure 1

Note: The map shown in Figure 1 provides 8-hour ozone design values in parts per billion (ppb) based on data from the 2009-2011 period (i.e., the 2011 design value, or DV), which are the most recent years with fully-certified air quality data.

The San Diego County, CA area was redesignated to attainment for the 1-hour ozone NAAQS in 2003. In 2004, this area was designated nonattainment for purposes of the 1997 8-hour ozone NAAQS. The boundary for the nonattainment area for the 1997 ozone NAAQS included the entirety of San Diego County. Areas of Indian country of federally recognized tribes were included in the nonattainment area. Except as indicated with a footnote in Table 1, these are the same tribes that are listed in Table 1, below.

In March 2009, California provided designation recommendations for the 2008 ozone NAAQS. The state recommended that San Diego County be designated as “nonattainment” for the 2008 ozone NAAQS based on air quality data from 2006-2008 (letter from James Goldstene, Executive Officer, California Air Resources Board, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, dated March 11, 2009). California provided an update to the original recommendation in October 2011 based on air quality data from 2008-2010 and preliminary 2009-2011 data, and indicating to EPA that it intended to early-certify data for 2011 so that it could be used for the final designations, but did not revise its recommendation for San Diego County. The 2009 and 2011 recommendations are based on data from Federal Equivalent Method (FEM) monitors sited and operated in accordance with 40 CFR Part 58 (letter from Lynn Terry, Deputy Executive Officer, California Air Resources Board, to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated October 12, 2011).

In March 2009, the La Jolla Band of Luiseño Indians recommended that their area of Indian country be designated as “unclassifiable” for the 2008 ozone NAAQS (letter from Larriann Musick, Tribal Chairperson, La Jolla Band of Luiseño Indians, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, March 6, 2009).

In December 2011, in response to EPA’s December 2011 letter conveying our preliminary designations (letter from Jared Blumenfeld, Regional Administrator, U.S. EPA Region IX, to Monique La Chappa, Tribal Chairwoman, Campo Band of Mission Indians, December 9, 2011), the Campo Band of Diegueno Mission Indians of the Campo Indian Reservation recommended that their reservation lands in San Diego County be designated as “attainment” for the 2008 ozone NAAQS (letter from Monique La Chappa, Tribal Chairwoman, Campo Band of Mission Indians, to Deborah Jordan, Air Division Director, U.S EPA Region IX, December 28, 2011).

In February 2012, in response to EPA’s December 2011 letter conveying our preliminary designations (letter from Jared Blumenfeld, Regional Administrator, U.S. EPA Region IX, to Robert H. Smith, Tribal Chairman, Band of Luiseño Indians of the Pala Reservation, December 9, 2011), the Pala Band of Luiseño Indians of the Pala Reservation recommended that their reservation lands in San Diego County be designated as “unclassifiable/attainment” for the 2008 ozone NAAQS (letter from Robert Smith, Tribal Chairman, to Jared Blumenfeld, Regional Administrator, U.S EPA Region IX, February 22, 2012).

In April 2012, in response to EPA’s December 2011 letter conveying our preliminary designations (letter from Jared Blumenfeld, Regional Administrator, U.S. EPA Region IX, to Robert Pinto, Sr., Chairman, Ewiiapaayp Band of Kumeyaay Indians, December 9, 2011), the Ewiiapaayp Band of Kumeyaay Indians recommended that their reservation lands in San Diego County be designated as “attainment” for the 2008 ozone NAAQS (email from Will Micklin, tribal CEO, to Jared Blumenfeld, Regional Administrator, U.S EPA Region IX, April 4, 2012).¹

After considering these recommendations and based on EPA's technical analysis described below, EPA is designating San Diego County and Indian country of eighteen federally recognized tribes in San Diego County (identified in Table 1 below) as “nonattainment” for the 2008 ozone NAAQS as part of the San Diego County multi-jurisdictional nonattainment area.

¹ The letter from the Ewiiapaayp Band of Kumeyaay Indians was received after the published deadline for receiving additional information from tribes and states (February 29, 2012). Consideration of late information is at the discretion of EPA. See the Response to Comments for more information.

Table 1. State's or Tribe's Recommended and EPA's 2008 ozone NAAQS Nonattainment Counties or Areas of Indian Country for San Diego County.

San Diego County	State or Tribe-Recommended Nonattainment Counties or Areas of Indian country	EPA's Designated Nonattainment Counties or Areas of Indian Country
San Diego County, CA	San Diego County	San Diego County
Barona Group of Capitan Grande Band of Mission Indians of the Barona Reservation	N/A	Barona Group of Capitan Grande Band of Mission Indians of the Barona Reservation
Campo Band of Diegueño Mission Indians of the Campo Indian Reservation ^{1,2}	Attainment	Campo Band of Diegueño Mission Indians of the Campo Indian Reservation
Capitan Grande Band of Diegueño Mission Indians of California	N/A	Capitan Grande Band of Diegueño Mission Indians of California
Ewiiapaayp Band of Kumayaay Indians ^{1,3}	N/A	Ewiiapaayp Band of Kumayaay Indians
Iipay Nation of Santa Ysabel	N/A	Iipay Nation of Santa Ysabel
Inaja Band of Diegueño Mission Indians of the Inaja and Cosmit Reservation	N/A	Inaja Band of Diegueño Mission Indians of the Inaja and Cosmit Reservation
Jamul Indian Village of California	N/A	Jamul Indian Village of California
La Jolla Band of Luiseño Indians	Unclassifiable	La Jolla Band of Luiseño Indians
La Posta Band of Diegueño Mission Indians of the La Posta Indian Reservation ¹	N/A	La Posta Band of Diegueño Mission Indians of the La Posta Indian Reservation
Los Coyotes Band of Cahuilla and Cupeño Indians	N/A	Los Coyotes Band of Cahuilla and Cupeño Indians
Manzanita Band of Diegueño Mission Indians of the Manzanita Reservation ¹	N/A	Manzanita Band of Diegueño Mission Indians of the Manzanita Reservation
Mesa Grande Band of Diegueño Mission Indians of the Mesa Grande Reservation	N/A	Mesa Grande Band of Diegueño Mission Indians of the Mesa Grande Reservation
Pala Band of Luiseño Mission Indians of the Pala Reservation ⁴	Unclassifiable/Attainment	Pala Band of Luiseño Mission Indians of the Pala Reservation
Pauma Band of Luiseño Mission Indians of the Pauma and Yuima Reservation	N/A	Pauma Band of Luiseño Mission Indians of the Pauma and Yuima Reservation
Rincon Band of Mission Luiseño Indians of the Rincon Reservation	N/A	Rincon Band of Mission Luiseño Indians of the Rincon Reservation
San Pasqual Band of Diegueño Mission Indians of California	N/A	San Pasqual Band of Diegueño Mission Indians of California
Sycuan Band of the Kumeyaay Nation	N/A	Sycuan Band of the Kumeyaay Nation
Viejas (Baron Long) Group of Capitan Grande Band of Mission Indians of the Viejas Reservation	N/A	Viejas (Baron Long) Group of Capitan Grande Band of Mission Indians of the Viejas Reservation

EPA modifications to state or tribal recommendations are shown in **bold**.

N/A = tribe did not submit a recommendation.

¹Tribe is located within San Diego County, but was not included in San Diego County nonattainment area for the 1997 ozone NAAQS.

²The Campo Band of Diegueño Mission Indians of the Campo Indian Reservation recommended designation of their Indian country as "attainment" for the 2008 ozone NAAQS as part of their response to EPA's 120-day letter. (Letter from Monique

La Chappa, Tribal Chairwoman, Campo Band of Diegueño Mission Indians of the Campo Indian Reservation, to Deborah Jordan, Air Division Director, U.S EPA Region IX, December 28, 2011.)

³The Ewiiapaayp Band of Kumayaay Indians recommended designation of their Indian country as “attainment” for the 2008 ozone NAAQS as part of their response to EPA’s 120-day letter. (Email from Will Micklin, CEO, Ewiiapaayp Band of Kumeyaay Indians, to Jared Blumenfeld, Regional Administrator, U.S EPA Region IX, April 4, 2012.)

⁴The Pala Band of Luiseño Indians of the Pala Reservation recommended designation of their Indian country as “unclassifiable” for the 2008 ozone NAAQS as part of their response to EPA’s 120-day letter. (Letter from Robert Smith, Tribal Chairman, Pala Band of Luiseño Indians of the Pala Reservation, to Jared Blumenfeld, Regional Administrator, U.S EPA Region IX, February 22, 2012.)

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values for air quality monitors in San Diego County, based on data from the most recent three year period for which we had timely submitted certified air quality data. San Diego Air Pollution Control District (APCD) submitted certified air quality data for 2011 before February 29, 2012 for this area; thus, for purposes of the final designations, we are considering air quality from the 2009-2011 period (i.e., the 2011 DV) for this area. A monitor’s DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met at a monitor when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years, is 0.075 parts per million (ppm) (75 parts per billion (ppb)) or less. A DV is only valid if minimum data completeness criteria are met. See 40 CFR part 50 Appendix P. Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

[Note: Monitors that are eligible for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) that are sited in accordance with 40 CFR Part 58, Appendix D (Section 4.1) and operating with a federal reference method (FRM) or federal equivalent method (FEM) monitor that meets the requirements of 40 CFR part 58, Appendix A. All data from a special purpose monitor (SPM) using an FRM or FEM which has operated for more than 24 months is eligible for comparison to the NAAQS unless the monitoring agency demonstrates that the data came from a particular period during which the requirements of Appendix A (quality assurance requirements) or Appendix E (probe and monitoring path siting criteria) were not met.]

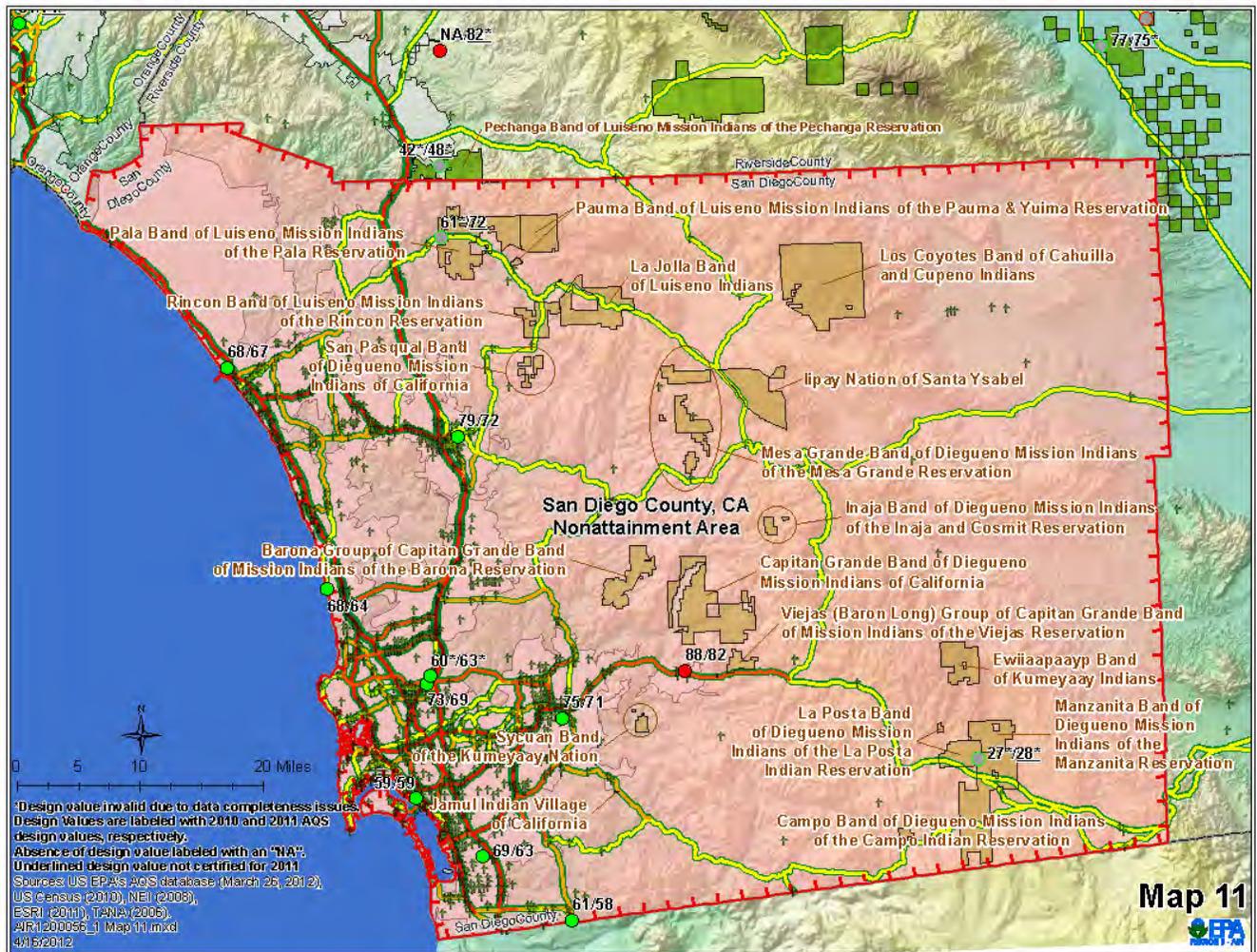
Certified, quality assured data are available in EPA’s Air Quality System (AQS) for all areas through calendar year 2010. California’s ozone season encompasses the entire year. Preliminary, non-certified data from calendar year 2011 is available in AQS for most areas. States are required to certify and quality assure data by May 1st of the following year. San Diego APCD certified 2011 data by February 29, 2012 for San Diego County. EPA’s designation for this area is therefore based on 2009-2011 data. As shown in Table 2, air quality data from 2009-2011 data indicate that San Diego County is violating the 2008 ozone NAAQS. San Diego County’s 2010 DV was 88 ppb. Ozone monitors relevant for comparison to the NAAQS and information from additional data sources within San Diego County are shown in Appendix 1, Map 11 (also inserted below).

Table 2. Air Quality Data.

County	State Recommended Nonattainment?	2009-2011 Design Value (parts per billion)
San Diego, CA	Yes	82

Maps contained in Appendix 1 show the geographic distribution of monitors. Map 11 shows monitor locations for San Diego County. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS. These were the most recent data available at the time we notified the State of our intended designations) and the 2009-2011 DV (which has been certified and which we are relying on for our final designation decisions for this area). Absence of a DV is symbolized with an "x".

Appendix 3 lists 2009-2011 DVs for San Diego County. Monitors shown in bold are the DV monitors (i.e., the monitor with the highest DV) for each individual county. Monitors shown in red font are the DV monitor for the nonattainment area. Values with an asterisk do not meet data completeness, and therefore those DVs are not relevant for comparison to the NAAQS and are solely provided for informational purposes.



From Appendix 1, Map 11: For map legend describing monitors, emissions, traffic, population, and boundaries, see Appendix 1.

Monitors in San Diego County show a violation of the 2008 8-hour ozone standard based on 2009-2011 data. Therefore, this area is included in the San Diego County nonattainment area. A county (or partial county) must also be designated nonattainment if it contributes to a violation in a nearby area. Each county without a violating monitor that is located near a county with a violating monitor has been evaluated based on the weight of evidence of the five factors to determine whether it contributes to the nearby violation.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors, nitrogen oxides (NO_x) and volatile organic compounds (VOC), and other emissions-related data that provide information on areas contributing to violating monitors.

Emissions data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI. (See <http://www.epa.gov/ttn/chief/net/2008inventory.html>) Emissions in a nearby area indicate the potential for the area to contribute to observed violations. Table 3 shows emissions of NO_x and VOC (given in tons per year) for San Diego County.

Table 3. Total 2008 NO_x and VOC Emissions.

County	State Recommended Nonattainment?	NO _x (tpy)	VOC (tpy)
San Diego, CA	Yes	59,093	54,767
	Areawide:	59,093	54,767

Emissions in San Diego County contribute to the monitored violations in the county. Stationary source emissions are predominantly located about 20 miles from the coast, upwind of the violating monitor which is located farther inland. Stationary sources in San Diego County are scattered in the central and eastern portions of the county and clustered most heavily in the southern and western portions of county, coinciding with both the population centers and major roadways (see Maps 11 and 11a in Appendices 1 and 2, respectively). Emissions of NO_x are slightly greater in San Diego County than in neighboring Riverside County to the northeast and Orange County to the northwest, and about 4.5 times greater than Imperial County to the east. Emissions of VOCs are about 1.2 times greater than VOC emissions from Orange County, nearly two times greater than VOC emissions from Riverside County and over six times greater than VOC emissions from Imperial County. EPA is designating these other areas as separate nonattainment areas for the 2008 ozone NAAQS.

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions that may contribute to ozone formation. Rapid population or vehicle miles traveled (VMT) growth (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the area associated with area source and mobile source emissions as part of the nonattainment area. Table 4 shows the population, population density, and population growth information for each county in the area.

Table 4. Population and Growth.

County	State Recommended Nonattainment?	2010 Population	2010 Population Density (1000 pop/sq mi)	Absolute change in population (2000-2010)	Population % change (2000-2010)
San Diego, CA	Yes	3,095,313	0.73	269,918	+10%
	Areawide:	3,095,313	0.73	269,918	+10%

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011 (http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table)

Like point source emissions, the population centers in San Diego County are located along the western coast of the county and extend approximately 20 miles inland (see Maps 11 and 11a in Appendices 1 and 2, respectively). The San Diego metropolitan area is located in the southern coastal portion of the county. The total population of San Diego County is very similar to the population of Orange County, is 1.4 times greater than Riverside County and almost 18 times greater than Imperial County, with a population density that is similarly greater than Riverside and Imperial Counties (2.4 and nearly 19 times greater, respectively). In contrast, although the populations of San Diego and Orange County are similar, the population density of Orange County is over five times higher than San Diego County. Over 2000 - 2010, the population of San Diego County has grown at a rate comparable to other smaller coastal counties (for example, Ventura County and San Luis Obispo County).

Traffic (VMT) data

EPA evaluated the commuting patterns of residents in the area, as well as the total VMT for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT is generally an integral part of an urban area and indicates the presence of motor vehicle emissions that may contribute to ozone formation that contributes to nonattainment in the area. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 shows total 2008 VMT for San Diego County.

Table 5. Traffic (VMT) Data.

County	State Recommended Nonattainment?	2008 VMT* (million miles)
San Diego, CA	Yes	33,689
	Areawide:	33,689

*MOBILE model VMTs are those inputs into the NEI version 1.5.

The county’s VMT is greater than most of the counties in the neighboring Los Angeles-South Coast Air Basin, including Riverside and Orange counties (which range from 20,000 to about 23,000 VMT in 2008), with the exception of Los Angeles County (nearly 80,000 VMT in 2008). A substantial amount of non-truck traffic occurs within 20 miles inland of the coast of San Diego County, generally between the northern and southern portions of the county and within the San Diego metropolitan area.

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation conditions, would affect the fate and transport of precursor emissions contributing to ozone formation. EPA reviewed the 8-hour Ozone Attainment Plan for San

Diego County, as well as several previous assessments of ozone transport in Southern California. EPA also reviewed the wind frequency distribution of wind direction data based on an average of 30 years of National Weather Service information for the months of June, July, and August.

The “Eight-Hour Ozone Attainment Plan” for San Diego County, produced by San Diego County APCD in May 2007, discusses meteorological conditions that would affect fate and transport of precursor emissions contributing to ozone formation.² The ozone conceptual model identifies five regimes of ozone and ozone precursor transport to San Diego County. In addition, the conceptual model identifies conditions present when local emissions in San Diego County are sufficient to generate ozone concentrations exceeding the federal standard.

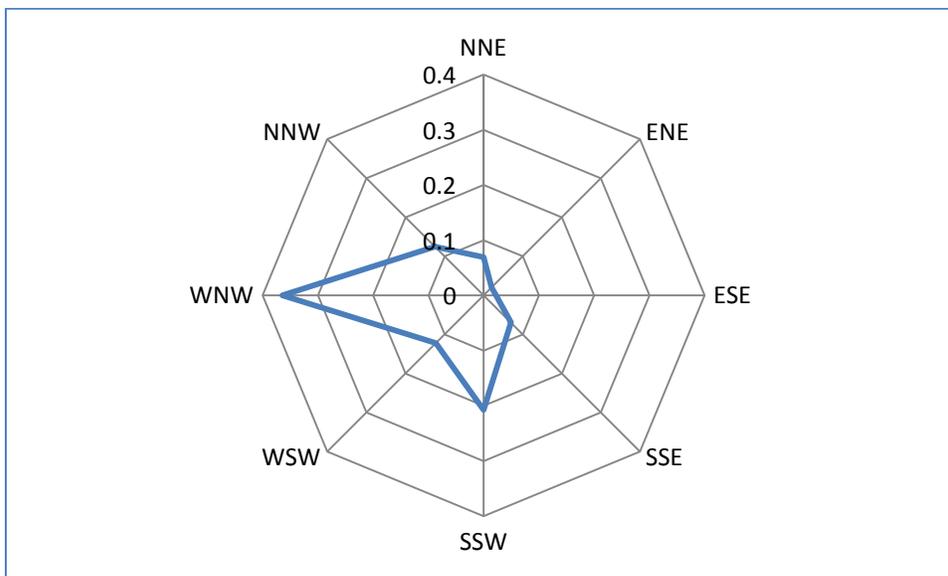


Figure 2: San Diego Summer Wind Frequency Distribution

The wind frequency distribution of wind direction data in Figure 2, above, is based on an average of 30 years of National Weather Service information for the months of June, July, and August. The prevailing winds during the ozone season have a strong northwesterly component.

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

San Diego County is shown in Appendix 1, Map 11a. San Diego County encompasses 4,300 square miles with 70 miles of beach along the Pacific Ocean. The county area is 65 miles from north to south and 86 miles from east to west. It borders Orange and Riverside counties to the north, Mexico to the South, Imperial County to the east, and the Pacific Ocean to the west. The Cleveland National Forest,³ with peaks of up to 6,271 feet, is located in the central portion of the county. The Anza-Borrego Desert State Park is located in the northeast portion of the county.

² P. 1-7. Eight-Hour Ozone Attainment Plan For San Diego County, May 2007. San Diego County Air Pollution Control District. <http://www.sdapcd.org/planning/8-Hour-O3-Attain-Plan.pdf>

³ <http://www.fs.usda.gov/main/cleveland/about-forest>

Factor 5: Jurisdictional boundaries

For each potential nonattainment area, we considered existing jurisdictional boundaries to provide a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment area boundaries for ozone or other urban-scale pollutants, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning organization, state lines, Indian country boundaries, and urban growth boundary. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

The San Diego County area has previously established nonattainment boundaries associated with both the 1-hour and the 1997 8-hour ozone NAAQS. The state recommended the same boundary for the 2008 ozone NAAQS. For the 1-hour ozone NAAQS, the entirety of San Diego County was initially designated nonattainment and then redesignated to attainment with a maintenance plan in 2003. For the 1997 ozone NAAQS, the county was designated nonattainment in 2004 and remains nonattainment.

In addition to prior ozone designations, there are other jurisdictional considerations for this area. The San Diego APCD performs air quality planning for the county, in addition to permitting and other regulatory and non-regulatory forms of air pollution controls. The metropolitan planning organization (MPO) in charge of transportation planning for the area is the San Diego Association of Governments (SANDAG). The entirety of the county is also defined by the Office of Management and Budget (OMB) as the San Diego-Carlsbad-San Marcos metropolitan statistical area (MSA). OMB uses full counties for its urban area definitions. EPA notes that in this case, San Diego is a very large county (over 4,200 square miles) and that the population is in the west half of the county. The state's recommendation to designate the entirety of the county nonattainment reflects the boundary for the air district, the transportation planning agency, the county government, and the MSA.

The San Diego County area also includes portions of Indian country. As defined at 18 U.S.C. 1151, "Indian country" refers to: "(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same." EPA recognizes the sovereignty of tribal governments, and has attempted to take the desires of the tribes into account in establishing appropriate nonattainment area boundaries.

Evaluation of Recommendation from La Jolla Band of Luiseño Indians

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. EPA has evaluated the recommendation of the La Jolla Band of Luiseño Indians (La Jolla) based on currently available information.

La Jolla is a federally recognized tribe whose Indian country is located in the northern portion of the San Diego-Carlsbad-San Marcos MSA. Map 11a in Appendix 2 shows the location of the area of Indian country within the San Diego County nonattainment area.

In 2004, EPA established the San Diego nonattainment boundaries for the 1997 ozone NAAQS. This boundary included most portions of San Diego County and encompassed the lands of La Jolla.

In March 2009, La Jolla recommended that portions of its lands in San Diego County be designated as “unclassifiable” for the 2008 ozone NAAQS (letter from Larriann Musick, Tribal Chairperson, La Jolla Band of Luiseño Indians, to Laura Yoshii, Acting Regional Administrator, U.S. EPA Region IX, March 6, 2009).

Based on the factors discussed below, EPA has concluded that La Jolla should be designated nonattainment as part of the San Diego County nonattainment area for the 2008 ozone NAAQS.

Air Quality Data

Currently, La Jolla does not operate any ozone monitors within the tribal boundaries. Map 11 in Appendix 1 shows monitor locations for the San Diego County nonattainment area. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS) and the 2009-2011 DV (data that are not yet certified and quality assured in AQS are denoted with an underline).

The typical pattern for ozone levels along the southwest coast of California is lower ozone levels along the coast from clean coastal air with increasing levels inland as precursors and temperatures increase. At times, ozone and its precursors can be transported along the coast, as described above in Factor 3. Air monitoring stations show this pattern with coastal monitors attaining the 2008 ozone NAAQS (e.g., monitor numbers 060731008, 060731001, 060731010) and inland monitors violating (e.g., 060731006 and 060659001). See Appendix 3. The violating monitor in San Diego is 20-25 miles inland, which is similar to the location of La Jolla’s reservation. We believe that this violating monitor is representative of La Jolla’s air quality.

Several studies have shown ozone transport from the South Coast air basin and the western portions of San Diego County can impact the inland areas of San Diego County.⁴ Also, modeling performed in the 2007 8-hour ozone attainment plan for San Diego shows that La Jolla experiences similar air quality as the surrounding inland areas.⁵ Based on the lack of topographic barriers, similarities in meteorology and transport patterns to the surrounding area, La Jolla is expected to have similar air quality as the surrounding inland areas.

Emissions and Emissions-Related Data

The lands of La Jolla consist of 8,822 acres of Indian country, which are home to 470 tribal members. La Jolla has a few sources of ozone precursor emissions within the tribal boundaries;

⁴ Bigler-Engler, V, 1995: Analysis of an Ozone Episode during the San Diego Air Quality Study: The Significance of Transport Aloft. *Journal of Applied Meteorology*, 34, 1863-1875). Luria, M, 2005: Local and Transported pollution of San Diego, California. *Atmospheric Environment*, 39, 6765-6776. Boucouvala, D, 2003: Analysis of transport patterns during an SCOS97-NARSTO episode. *Atmospheric Environment*, 37 Supplement No. 2, S73-S94. Meteorological and Photochemical Modeling for the San Diego County 2007, 8 Hour Ozone State Implementation Plan.

⁵ Eight-Hour Ozone Attainment Plan For San Diego County, May 2007. San Diego County Air Pollution Control District. <http://www.sdapcd.org/planning/8-Hour-O3-Attain-Plan.pdf>

these include a gas station, general store, and local traffic. Also, Highway 76 passes through La Jolla's Indian country.

General information on emissions, population density and degree of urbanization, traffic and commuting patterns for San Diego County can be found in Factor 2 of the San Diego County nonattainment area technical analysis, above. This information is relevant for both San Diego County's densely-populated coastal areas and the less-populated inland areas, including La Jolla's area of Indian country.

Meteorology (Weather/Transport Patterns)

La Jolla is located about 20 miles inland and experience similar meteorology and transport patterns as other inland parts of western San Diego County. Therefore, the information for San Diego County discussed in Factor 3 above, also characterizes the complex meteorology and transport patterns for La Jolla. As described in Factor 3, transport of ozone and its precursors is prevalent within San Diego County, and from adjacent nonattainment areas.

Geography/Topography

La Jolla's Indian country does not have any geographical or topographical barriers that would prevent air pollution transport from the surrounding San Diego County nonattainment area. Although the terrain is complex, there are no topographic barriers. Therefore, geography and topography support including La Jolla's Indian country with the surrounding area.

Jurisdictional Boundaries

La Jolla is a federally recognized tribe located in the northern portion of the San Diego-Carlsbad-San Marcos MSA. Map 11a in Appendix 2 shows the location of the area of Indian country within the San Diego County nonattainment area.

Conclusion for La Jolla

While La Jolla has recommended that their Indian country be designated as unclassifiable, based on the information currently available and the five factor analysis above, EPA is designating the lands of the La Jolla as nonattainment, as part of the San Diego County nonattainment area for the 2008 ozone NAAQS.

Evaluation of Recommendation from Campo Band of Diegueño Mission Indians of the Campo Indian Reservation

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. EPA has evaluated the recommendation of the Campo Band of Diegueño Mission Indians of the Campo Indian Reservation (Campo) based on currently available information.

Campo is a federally recognized tribe located in the southeastern portion of San Diego County. Map 11a in Appendix 2 shows the location of the area of Indian country within the San Diego County nonattainment area.

In 2004, EPA established the San Diego nonattainment boundaries for the 1997 ozone NAAQS. This boundary included most portions of San Diego County, but excluded the lands of Campo.

In December 2011, in response to EPA's December 2011 letter conveying our preliminary designations (letter from Jared Blumenfeld, Regional Administrator, U.S. EPA Region IX, to Monique La Chappa, Tribal Chairwoman, Campo Band of Mission Indians, December 9, 2011), Campo recommended that their reservation lands in San Diego County be designated as "attainment" for the 2008 ozone NAAQS (letter from Monique La Chappa, Tribal Chairwoman, Campo Band of Diegueño Mission Indians of the Campo Indian Reservation, to Deborah Jordan, Air Division Director, U.S EPA Region IX, December 28, 2011). Based on the factors discussed below, EPA is designating Campo nonattainment as part of the San Diego County nonattainment area for the 2008 ozone NAAQS.

Air Quality Data

Currently, Campo does not operate any ozone monitors within the tribal boundaries. Map 11 in Appendix 1 shows monitor locations for the San Diego County nonattainment area. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS) and the 2009-2011 DV (data that are not yet certified and quality assured in AQS are denoted with an underline).

The closest ozone monitoring site to Campo is operated by the La Posta Band of Diegueño Mission Indians of the La Posta Indian Reservation (La Posta). However, the data from this monitoring site does not meet regulatory requirements. EPA has identified issues with the La Posta data, including extended periods of instrument malfunctions, anomalously low ozone values that are significantly lower than expected background concentrations, and very poor completeness levels during ozone season. In 2008, the data completeness for the year was 46%; data completeness in 2009 was 32%; and data completeness in 2010 was 60%. Data are deemed complete if daily maximum 8-hour average concentrations are available for at least 90% of the days within the ozone monitoring season, on average, for a three year period, with a minimum data completeness requirement in any one year of at least 75%. (40 CFR part 50, Appendix P, section 2.3.) EPA is therefore unable to use the La Posta data for regulatory decision making at this time. The next closest ozone monitor is located 24 miles to the west-northwest of the Campo reservation at 2,000 feet of elevation in Alpine, California, and is operated by the San Diego Air Pollution Control District (APCD). Currently, the Alpine monitoring site is the design value site for the San Diego nonattainment area with a 2009-2011 design value of 0.082 parts per million (ppm). EPA believes that the Alpine monitoring site is representative of the eastern, inland portions of San Diego County, including areas surrounding the Campo reservation. Several studies have shown ozone transport from the South Coast Air Basin and the western portions of San Diego County can reach the inland areas of San Diego County.⁶ Also, modeling performed in the 2007 8-hour ozone attainment plan for San Diego County shows that Campo experiences similar air quality as the surrounding inland areas⁷. The San Diego APCD also

⁶ Bigler-Engler, V, 1995: Analysis of an Ozone Episode during the San Diego Air Quality Study: The Significance of Transport Aloft. *Journal of Applied Meteorology*, 34, 1863-1875). Luria, M, 2005: Local and Transported pollution of San Diego, California. *Atmospheric Environment*, 39, 6765-6776. Boucouvala, D, 2003: Analysis of transport patterns during an SCOS97-NARSTO episode. *Atmospheric Environment*, 37 Supplement No. 2, S73-S94. Meteorological and Photochemical Modeling for the San Diego County 2007, 8 Hour Ozone State Implementation Plan.

⁷ Eight-Hour Ozone Attainment Plan For San Diego County, May 2007. San Diego County Air Pollution Control District. <http://www.sdapcd.org/planning/8-Hour-O3-Attain-Plan.pdf>

operated an ozone monitor in Descanso during a field study in the late 1980s and early 1990s. The Descanso monitoring site was located approximately 17 miles to the northwest of the Campo Reservation at 3,600 feet of elevation, and measured high ozone levels that were comparable to those measured at Alpine. Based on the lack of topographic barriers, similarities in meteorology and transport patterns to the surrounding area, and the high levels of ozone in the area, EPA has determined that nearby monitors in San Diego County, specifically the Alpine monitor, adequately represent the air quality in the area, including the area surrounding Campo.

Emissions and Emissions-Related Data

EPA acknowledges that Campo is located in a rural area with few major sources of ozone precursors and that the Campo reservation has a low population density compared to other areas of San Diego County. While there are no large sources of emissions near the Campo reservation, emissions from western San Diego County and the South Coast Air Basin can influence high ozone levels in the eastern portions of San Diego County. Additionally, sections of I-8 pass through the reservation. According to the Federal Highway Administration data for 2007, the annual average daily non-truck traffic for this portion of I-8 is approximately 17,000 vehicles, while the annual average daily truck traffic is approximately 2,700 vehicles.

General information on emissions, population density and degree of urbanization, traffic and commuting patterns for San Diego County can be found in Factor 2 of the San Diego County nonattainment area technical analysis, above. This information is relevant for both San Diego County's densely-populated coastal areas and the less-populated inland areas, including the Campo reservation.

Meteorology (Weather/Transport Patterns)

EPA's assessment of meteorology is consistent with Campo's claim that winds are predominantly from the west and southwest. However, such patterns are conducive to high levels of ozone transport to the elevated portions of eastern San Diego County and do not typically reduce ozone concentrations. EPA also reviewed other sources of information that reaffirm that high levels of ozone can occur in eastern San Diego County as a result of transport from the San Diego metropolitan area and the South Coast Air Basin.⁸

Furthermore, the information for San Diego County discussed in Factor 3 above, also characterizes the complex meteorology and transport patterns for Campo. As described in Factor 3, transport of ozone and its precursors is prevalent within San Diego County, and from adjacent nonattainment areas.

Geography/Topography

As previously discussed, the Alpine monitoring site is located at 2,000 feet of elevation and the previously operated Descanso monitoring site located at 3,600 feet, approximately 17 miles to the northwest of the Campo Reservation, measured comparable values. Alpine is the design

⁸ Bigler-Engler, V, 1995: Analysis of an Ozone Episode during the San Diego Air Quality Study: The Significance of Transport Aloft. *Journal of Applied Meteorology*, 34, 1863-1875). Luria, M, 2005: Local and Transported pollution of San Diego, California. *Atmospheric Environment*, 39, 6765-6776. Boucouvala, D, 2003: Analysis of transport patterns during an SCOS97-NARSTO episode. *Atmospheric Environment*, 37 Supplement No. 2, S73-S94. Meteorological and Photochemical Modeling for the San Diego County 2007, 8 Hour Ozone State Implementation Plan.

value site for the San Diego nonattainment area, with a 2011 DV of 0.082 ppm. Elevations on the Campo reservation range from 3,100 feet in the southern areas of the reservations up to 4,600 feet in the areas north of I-8, which are similar to the elevation of the Descanso monitoring site. Therefore, it is reasonable to assume that high ozone levels can occur in these elevated portions of eastern San Diego County.

Campo does not have any geographical or topographical barriers that would prevent air pollution transport from the surrounding San Diego County nonattainment area. Although the terrain is complex, there are no topographic barriers. Therefore, geography and topography support including Campo with the surrounding area.

Jurisdictional Boundaries

Campo is a federally recognized tribe located in the southeastern portion of San Diego County. Map 11a in Appendix 2 shows the location of the areas of Indian country within the San Diego County nonattainment area.

Conclusion for Campo

While Campo has recommended that their reservation lands be designated attainment, based on the information currently available and the five factor analysis above, EPA is designating Campo nonattainment as part of the San Diego County nonattainment area for the 2008 ozone NAAQS.

Evaluation of Recommendation from Pala Band of Luiseño Indians of the Pala Reservation

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 in nearby areas. EPA has evaluated the recommendation of the Pala Band of Luiseño Indians of the Pala Reservation (Pala) based on currently available information.

Pala is a federally recognized tribe located in the northern portion of the San Diego-Carlsbad-San Marcos MSA. Map 11a in Appendix 2 shows the location of the area of Indian country within the San Diego County nonattainment area.

In 2004, EPA established the San Diego nonattainment boundaries for the 1997 ozone NAAQS. This boundary included most portions of San Diego County and encompassed Pala’s Indian country.

In February 2012, in response to EPA’s December 2011 letter conveying our preliminary designations (letter from Jared Blumenfeld, Regional Administrator, U.S. EPA Region IX, to Robert H. Smith, Tribal Chairman, Pala Band of Luiseño Indians of the Pala Reservation, December 9, 2011), Pala recommended that their reservation lands in San Diego County be designated as “unclassifiable/attainment” for the 2008 ozone NAAQS (letter from Robert Smith, Tribal Chairman, to Jared Blumenfeld, Regional Administrator, U.S EPA Region IX, February 22, 2012). Based on the factors discussed below, EPA is designating Pala’s Indian country nonattainment as part of the San Diego County nonattainment area for the 2008 ozone NAAQS.

Air Quality Data

Map 11 in Appendix 1 shows ozone monitors within San Diego County. For each monitor, Appendix 1 lists the monitor, the 2008-2010 DV (certified and quality assured in AQS) and the 2009-2011 DV (data that are not yet certified and quality assured in AQS are denoted with an underline).

Currently, Pala operates an ozone monitoring site on the reservation. At this time, the data from this site do not meet standards for use in regulatory decisions, such as NAAQS designations, and therefore cannot be used for regulatory purposes. Precision and accuracy information has not been submitted to EPA's Air Quality System (AQS). Agencies collecting monitoring data for regulatory purposes are required to submit these data to AQS in order to determine if monitoring data are meeting the data quality objectives required by regulation. Also, Pala only recently began participating in the National Performance Audit Program (NPAP). In 2011, the Pala ozone monitor failed the NPAP audit. During the audit, the Pala monitor was measuring 20-30 parts per billion (ppb) lower than the EPA audit system, indicating an audit failure. Measurements from this monitor have been biased low for an indeterminate period of time. Due to these uncertainties, EPA cannot solely rely on the ozone data collected from this site in this regulatory decision. Because there is no regulatory monitor at Pala for the current 2008 ozone NAAQS designations, EPA has reviewed data from the closest monitors: Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation (Pechanga), Escondido, and Temecula. Pechanga is only three miles to the north of Pala and it is reasonable to assume that ozone concentrations on Pechanga lands are similar to those on Pala lands. However, as explained in the Technical Analysis for Pechanga, only a limited amount of data from the Pechanga monitor can be used and comparisons of available data show that Pechanga data closely tracks with Temecula data. Because of the proximity of Pala to Pechanga, we believe it is reasonable to compare Pala's air quality to the Temecula monitor as well. The Temecula monitor has valid data for only 2011 so it does not have a valid design value, which requires three years of valid data. However, the one year of valid data shows an 8-hour 4th maximum of 0.082 ppm (this value would be averaged over three years to calculate the design value).

The typical pattern for ozone levels along the southwest coast of California is low ozone levels along the coast from clean coastal air with increasing levels inland as precursors and temperatures increase. At times, ozone and its precursors can be transported along the coast, as described in Factor 3 for San Diego County, above. Air monitoring stations show this pattern with coastal monitors attaining the 2008 ozone NAAQS (e.g., monitor numbers 060731008, 060731001, and 060731010) and inland monitors violating (e.g., monitor numbers 060731006 and 060659001). See Appendix 3. This area is also subject to inland transport from the South Coast air basin along the Interstate 15 freeway when winds are from the north. The violating monitor in San Diego is 20-25 miles inland, as are Pala's tribal lands. EPA has also reviewed modeling from the 2007 San Diego attainment plan for the 1997 ozone NAAQS that shows air quality in Pala is similar to the rest of San Diego County.⁹ Together, these data show that the air quality at Pala is similar to ozone levels to San Diego County, which has a design value of 0.082 ppm.

⁹ Eight-Hour Ozone Attainment Plan For San Diego County, May 2007. San Diego County Air Pollution Control District. <http://www.sdapcd.org/planning/8-Hour-O3-Attain-Plan.pdf>

Emissions and Emissions-Related Data

The Pala reservation consists of 12,449 acres, which are home to approximately 1,315 tribal members. Sources of ozone precursor emissions on Pala's Indian country include the Pala Casino Spa & Resort, a gas station, and other mobile sources. EPA acknowledges that Pala's Indian country is located in a rural area with few major sources of ozone precursors and that the Pala reservation has a low population density compared to other areas of San Diego County. While there may be no large sources of emissions on the Pala reservation, emissions from western San Diego County and the South Coast Air Basin can influence high ozone levels in these inland areas of San Diego County.

General information on emissions, population density and degree of urbanization, traffic and commuting patterns for San Diego County can be found in Factor 2, above. This information is relevant for both San Diego County's densely-populated coastal areas and the less-populated inland areas, including the lands of Pala.

Meteorology/Transport Patterns

Pala is located about 20 miles inland and experiences similar meteorology and transport patterns as other inland parts of eastern San Diego County. Therefore, the information for San Diego County discussed in Factor 3 above, also characterizes the complex meteorology and transport patterns for Pala. As described in Factor 3, transport of ozone and its precursors is prevalent within San Diego County, and from adjacent nonattainment areas. EPA also reviewed other sources of information that reaffirm that high levels of ozone can occur in the inland areas San Diego County as a result of transport from the San Diego metropolitan area and the South Coast Air Basin.¹⁰

Geography/Topography

Pala does not have any geographical or topographical barriers that would eliminate air pollution transport from the surrounding San Diego County nonattainment area. Although the terrain is complex, there are no topographic barriers. Therefore, geography and topography support including Pala with the surrounding area.

Jurisdictional Boundaries

Pala is a federally recognized tribe located in the northern portion of San Diego County. Map 11a in Appendix 2 shows the location of the areas of Indian country within the San Diego County nonattainment area.

Conclusion for Pala Band

Pala requested to be designated as "unclassifiable/attainment" for the 2008 ozone NAAQS. Due to available representative data from surrounding monitors, similarities in meteorology and

¹⁰ Bigler-Engler, V, 1995: Analysis of an Ozone Episode during the San Diego Air Quality Study: The Significance of Transport Aloft. *Journal of Applied Meteorology*, 34, 1863-1875). Luria, M, 2005: Local and Transported pollution of San Diego, California. *Atmospheric Environment*, 39, 6765-6776. Boucouvala, D, 2003: Analysis of transport patterns during an SCOS97-NARSTO episode. *Atmospheric Environment*, 37 Supplement No. 2, S73-S94. Meteorological and Photochemical Modeling for the San Diego County 2007, 8 Hour Ozone State Implementation Plan.

transport patterns to the surrounding area, the high levels of ozone in the area, and the lack of geographical or topographical barriers that would prevent transport from the San Diego nonattainment area, EPA is designating Pala nonattainment as part of the San Diego nonattainment area for the 2008 ozone NAAQS.

Conclusion

Based on the assessment of factors described above, EPA is designating San Diego County, CA nonattainment for the 2008 ozone NAAQS. This nonattainment area also includes areas of Indian country of eighteen federally recognized tribes.

The Clean Air Act requires EPA to designate any area as “nonattainment” if it violates a NAAQS or if it contributes to a violation in a nearby area. Air quality data (Factor 1) show that monitors in San Diego County show a violation of the 2008 8-hour ozone standard based on 2009-2011 data. Therefore, Factor 1 supports designating San Diego County as nonattainment.

Emissions and emission-related data (Factor 2) show that based on locations of stationary sources and population centers, as well as traffic patterns, the state’s recommended nonattainment area encompasses both source and receptor populations in the county.

Based on meteorology and weather or transport patterns (Factor 3), influenced by geography and topography (Factor 4), EPA concurs with the state’s analysis characterizing the formation of ozone from local sources as well as transport. EPA believes that this factor supports the nonattainment boundaries of San Diego County.

In considering jurisdictional boundaries (Factor 5), EPA recognizes that the San Diego County area has established nonattainment boundaries associated with both the 1-hour and the 1997 8-hour ozone NAAQS. The state recommended the same boundary for the 2008 ozone NAAQS. EPA concurs with this recommendation and believes that the existing boundary appropriately encompasses stationary and mobile sources of emissions and accounts for meteorological and geographical boundaries that affect ozone concentrations in San Diego County, and reflects the appropriate jurisdictional boundaries (e.g., San Diego APCD, SANDAG and the San Diego-Carlsbad-San Marcos metropolitan statistical area).

Eighteen tribes are being designated nonattainment as part of the San Diego County nonattainment area¹¹. Four tribes submitted recommendations to EPA. La Jolla, located over 20 miles inland in the northern portion of the county, recommended its lands be designated unclassifiable. Based on available air quality data as well as meteorology and geography, EPA has concluded that La Jolla’s Indian country is not sufficiently distinct to separate the Tribe from the San Diego nonattainment area. Campo and Ewiiapaayp recommended that their areas of Indian country be designated attainment. Based on the information currently available and the five factor analysis above, EPA is designating Campo’s area of Indian country nonattainment as part of the San Diego County nonattainment area for the 2008 ozone NAAQS. A five factor analysis was not prepared for Ewiiapaayp because their response was received past the deadline for tribal and state comments. EPA is designating the Tribe’s Indian country as part of the San Diego County nonattainment area for the 2008 ozone NAAQS. Pala requested to be designated

¹¹ Campo Band of Diegueño Mission Indians of the Campo Indian Reservation, Ewiiapaayp Band of Kumayaay Indians, La Posta Band of Diegueño Mission Indians of the La Posta Indian Reservation, and Manzanita Band of Diegueño Mission Indians of the Manzanita Reservation were excluded from the San Diego nonattainment during the 2004 designations of the 1997 standard ozone standard.

as “unclassifiable/attainment” for the 2008 ozone NAAQS. Due to available representative data from surrounding monitors, similarities in meteorology and transport patterns to the surrounding area, the high levels of ozone in the area, and the lack of geographical or topographical barriers that would prevent transport from the San Diego nonattainment area, EPA is designating Pala nonattainment as part of the San Diego nonattainment area for the 2008 ozone NAAQS.

Based on our consideration of all five factors, EPA is designating San Diego County and Indian country of eighteen federally recognized tribes (as listed in Table 1) nonattainment as part of the San Diego County, CA multi-jurisdictional nonattainment area.