APPENDIX A:

Air Monitoring Site Descriptions

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Appendix A: Monitoring Site Descriptions

Sites operated by the San Joaquin Valley Air Pollution Control District (SJVAPCD)

Bakersfield-Muni

The Bakersfield-Golden site was shut down for relocation in December 2009. The replacement site, Bakersfield-Muni, is located in the Bakersfield, CA metropolitan area and is operated by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The site serves as a PAMS Type 2 site, and its purpose is to measure maximum ozone precursor emissions. The site monitors ozone, CO, NO_2, total- and speciated-VOC, and meteorology for the PAMS program. The speciated PAMS equipment became operational in June 2012. All the other PAMS equipment except for the NMHC equipment began operating in July 2012. The NMHC equipment was installed and became operational in October 2012. The site monitored PM10 and PM2.5 from July 2012 until late February 2013. However, it soon became apparent that this site was not acceptable as a PM10 and PM2.5 site because site specific emissions from nearby sources were impacting the site, and the site was therefore not measuring ambient particulate concentrations.

Clovis-Villa

Clovis, CA is located in the central part of the San Joaquin Valley with mountains to the east and northeast. North-south air flow is virtually unobstructed. Pollutant emissions occur locally and are also transported from upwind and nearby locations into the area by the wind. The Clovis-Villa monitoring site is operated by SJVAPCD and is located in the northeastern portion of the Fresno, CA metropolitan area. It began operating in September 1990. This site is a PAMS Type 2 site, a site intended to measure maximum ozone precursor emissions. In addition to ozone, the site also monitors PM2.5, PM10, PM2.5, CO, NO_2, total- and speciated-VOC, and meteorology for the PAMS program. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants, which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events, because the wind can cause PM2.5 to become suspended in the air. On rare occasions, this area of the San Joaquin Valley experiences wind events that can carry dust into the area or lift local dust particles into the air. Such events can cause PM10 concentrations to increase.

Corcoran-Patterson

Corcoran, CA is located in the central part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutant emissions occur locally and are also transported from upwind locations into the area by the wind. The Corcoran-Patterson monitoring site is operated by SJVAPCD and is located 67

miles south of the Fresno, CA metropolitan area. It began operating in October 1996. In 2011, the site was shut down temporarily due to safety issues and repairs were made to the site. The site resumed operating in August 2012. The site measures representative concentrations of PM10 and PM2.5. This site also monitors meteorology. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events because the wind can cause PM2.5 to become suspended in the air. On rare occasions, this area of the San Joaquin Valley experiences wind events that can carry dust into the area or lift local dust particles into the air. Such events can cause PM10 concentrations to increase and sometimes exceed the NAAQS.

Fresno-Drummond

Fresno, CA is located in the central part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally and are also transported from upwind locations into the area by the wind. The Fresno-Drummond monitoring site is operated by SJVAPCD and is located in the Fresno, CA metropolitan area. It began operating in July 1984. The purpose of the site is to monitor representative concentrations of hourly ozone responses in an urban area. In addition to ozone, the site also monitors PM10, PM2.5, CO, NO_2, and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events, because the wind can cause PM2.5 to become suspended in the air. On rare occasions, this area of the San Joaquin Valley experiences wind events that can carry dust into the area or lift local dust particles into the air. Such events can cause PM10 concentrations to increase.

Fresno-Pacific

Fresno, CA is located in the central part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally and are also transported from upwind locations into the area by the wind. The Fresno-Pacific monitoring site is operated by SJVAPCD and is located in the Fresno, CA metropolitan area. It began operating in January 2000. The purpose of the site is to monitor representative PM2.5 concentrations in an urban area. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase when wind causes PM2.5 to become suspended in the air. Occasionally, wind

will carry dust across the city or lift local dust particles into the air, and cause PM2.5 concentrations to become elevated, but PM2.5 exceedances due to wind events are rare.

Fresno-Sky Park

Fresno, CA is located in the central part of the San Joaquin Valley with mountains to the east and west. Pollutants occur locally and are also transported from upwind locations into the area by the wind. The Fresno-Sky Park monitoring site is operated by SJVAPCD and is located in the Fresno, CA metropolitan area. It began operating in July 1986. The purpose of the site is to monitor representative concentrations of hourly ozone responses in an urban area. In addition to ozone, the site also monitors CO, NO_2, and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures.

Hanford-Irwin

Hanford, CA is located in the central part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally and are also transported from upwind locations into the area by the wind. The Hanford-Irwin monitoring site is operated by SJVAPCD and is located 51 miles south of the Fresno, CA metropolitan area. The site began operating in October 1993 and was decommissioned in October 2007 due to plans to move it to a different part of the Irwin location. The purpose of the site is to monitor representative concentrations of hourly ozone, PM2.5, PM10, and NO_2 responses from upwind and nearby urban areas. The site also monitors meteorology. The PM2.5, PM10, and ozone monitors were temporarily moved to Corcoran during site reconstruction. In February 2010, the ozone and PM2.5 monitors were returned to Hanford and the site became operational again. The PM10 monitor was returned and became operational in July 2010. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events because the wind can cause PM2.5 to become suspended in the air. On rare occasions, this area of the San Joaquin Valley experiences wind events that can carry dust into the area or lift local dust particles into the air. Such events can cause PM10 concentrations to increase and sometimes exceed the NAAQS.

Huron

Huron, CA is located in southwestern Fresno County, and is about 40 miles southwest of Fresno, CA, with the coastal mountain range just to the west. North-south air flow is

virtually unobstructed. This monitoring site was established in January 2007 in order to comply with Assembly Bill (AB) 841. Currently, this site monitors PM2.5 (Non-FEM,

Lebec
Lebec, CA is located in the southern-most portion of the San Joaquin Valley. The Lebec monitoring station was initiated by the Tejon Ranch in 2004, and the District assumed responsibility for this site as of January 2009. This site allows the District to better understand pollution impacts in the southern San Emigdio Mountains. The site measures PM2.5 and meteorological parameters. This site is used for general residential wood-burning declarations for the Greater Frazier Park Area.

Madera-City
Madera, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. The Madera-City monitoring site is located closer to the city center of Madera than the Madera-Pump Yard site. The Madera-City site is operated by the SJVAPCD and became operational in June 2010. The site monitors ozone, PM2.5, PM10, and meteorology. The purpose of this site is to measure downwind concentrations of the city of Madera which will provide needed information about the variability of air quality levels on the Valley floor of Madera County.

Madera-Pump Yard
Madera, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. The Madera-Pump Yard Street monitoring site is operated by SJVAPCD and is located in Madera, CA. It began operating in August 1997. This site was established as a PAMS Type 1 site, located in an area upwind of Fresno and not to be influenced by upwind or local ozone precursor emissions. In addition to ozone, this site also monitors CO, total- and speciated-VOC, and meteorology for the PAMS program. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures.

Manteca
Manteca, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants are both local and up wind in origin. The Manteca monitoring site is located in Manteca, CA and operated by SJVAPCD. It became operational in November 2010. The purpose of the site is to monitor transport of and representative concentrations of ozone, PM2.5, and PM10 from upwind and nearby urban areas. The site also monitors meteorology. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric

chemistry. PM2.5 and PM10 concentrations can also increase during wind events because the wind can cause PM to become suspended in the air. Occasionally, wind will carry dust across the city and also cause PM concentrations to increase, but PM2.5 and PM10 exceedances due to wind events are rare.

Maricopa

Maricopa, CA is located at the southern end of the San Joaquin Valley with mountains to the east, west, and south. Because the mountains block or slow down air flow pollutants can get trapped and build up in the area. The Maricopa monitoring site is operated by the SJVAPCD and is located 45 miles southwest of the Bakersfield, CA metropolitan area. It began operating in July 1987. The purpose of the site is to monitor representative concentrations of hourly ozone in a rural area. The site also monitors meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures.

Merced-Coffee

Merced, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants are both local and up wind in origin. The Merced-Coffee monitoring site is operated by SJVAPCD and is located in the Merced, CA. It began operating in October 1991. The purpose of the site is to monitor representative concentrations of hourly ozone responses from upwind urban areas. The site also monitors PM2.5, NO_2, and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures.

Merced-M Street

Merced, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants are both local and up wind in origin. The Merced-M Street monitoring site is operated by SJVAPCD and is located in Merced, CA. It began operating in April 1999. The purpose of the site is to monitor representative concentrations of PM2.5 and PM10 responses from upwind urban areas. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 and PM10 concentrations can also increase during wind events because the wind can cause PM to become suspended in the air. Occasionally, wind will carry dust across the city and also cause PM concentrations to increase, but PM2.5 and PM10 exceedances due to wind events are rare.

Parlier

Parlier, CA is located in the central part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants are both local and up wind in origin. The Parlier monitoring site is operated by SJVAPCD and is located 20 miles southeast of the Fresno, CA metropolitan area. It began operating in March 1983. The purpose of the site, as a PAMS Type 3 site, is to monitor maximum ozone concentrations and ozone responses from upwind urban areas. The site also monitors NO_2, total- and speciated-VOC, and meteorology for the PAMS program. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures.

Porterville

Porterville, CA is located in the southeastern part of the San Joaquin Valley near the foothills of the Sierra Nevada Mountains to the east. It is approximately 25 miles southeast of Visalia, CA, and so transport of pollutants from Visalia towards Porterville is possible. The Porterville air monitoring site became operational in March 2010 and is operated by the SJVAPCD. The purpose of this site is to monitor ozone, PM2.5, and meteorology, and represent air quality levels present near the foothills of the southeastern portion of the Valley.

Stockton-Wagner/Holt

Stockton, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally, but the wind can transport pollutants into the area from upwind locations or through the Sacramento Delta from the Bay Area. The Stockton-Wagner/Holt monitoring site is operated by SJVAPCD and is located in the Stockton, CA metropolitan area. It began operating in October 1996. The purpose of the site is to monitor representative concentrations of PM10 in an urban area. Occasionally, wind will carry dust across the city and cause PM10 concentrations to increase, but PM10 exceedances are rare.

Tracy-Airport

Tracy, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally, but the wind can transport pollutants into the area from upwind locations or through the Sacramento Delta from the Bay Area. The Tracy-Airport monitoring site is operated by SJVAPCD and is located in Tracy, CA. It began operating in January 2005. The purpose of the site is to monitor transport of ozone, PM2.5, and PM10 from upwind and nearby urban areas. The site also monitors NO_2 and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight

hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 and PM10 concentrations can also increase during wind events because the wind can cause PM to become suspended in the air. Occasionally, wind will carry dust across the city and also cause PM concentrations to increase, but PM2.5 and PM10 exceedances due to wind events are rare.

Tranquillity

Tranquillity, CA is located in western Fresno County, and is about 25 miles west of Fresno, CA, with the coastal mountain range just to the west. North-south air flow is virtually unobstructed. This monitoring site was established in November 2009 and is operated by the SVAPCD. The purpose of this site is to monitor ozone, PM2.5, and meteorology. The site also represents background and rural pollutant concentrations on the west side of the San Joaquin Valley for research purposes.

Turlock

Turlock, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally, but the wind can transport pollutants into the area from upwind locations or through the Sacramento Delta from the Bay Area. The Turlock monitoring site is operated by SJVAPCD and is located in the Turlock, CA. It began operating in April 1992. The purpose of the site is to monitor representative concentrations of hourly ozone, PM2.5, and PM10 from upwind urban areas. The site also monitors CO, NO_2, and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 and PM10 concentrations can also increase during wind events because the wind can cause PM to become suspended in the air. Occasionally, wind will carry dust across the city and also cause PM concentrations to increase, but PM2.5 and PM10 exceedances due to wind events are rare.

Visalia-Airport

Visalia, CA is located where the central and southern parts of the San Joaquin Valley meet. The Sierra Nevada mountain range is approximately 20 miles east of Visalia. North-south air flow is virtually unobstructed. The Visalia-Airport monitoring site is operated by SJVAPCD and serves as a wind profiler monitoring surface wind speed and wind direction. It also monitors air temperature, and relative humidity at the surface. It began reporting official meteorological data in January 2001. Meteorological parameters have a direct influence on how and where pollutants are transported and how much pollutant concentrations increase or decrease.

Sites Operated by the California Air Resources Board (CARB)

Arvin-Di Giorgio

Arvin, CA is located at the southern end of the San Joaquin Valley with mountains to the east, west, and south. Because the mountains block or slow down air flow pollutants can get trapped and build up in the area. Pollutants occur locally and are also transported from upwind locations into the area by the wind.

The Arvin-Bear Mountain Boulevard ozone monitoring site was established by the Air Resources Board (ARB) in 1989 and has periodically been the Valley's ozone design site. Due to circumstances beyond ARB's control, ARB was unable to renew the lease at this location, and monitoring had to be discontinued at the end of the 2010 ozone season. The loss of this monitoring site has implications for determining the ozone attainment status of the region. The ARB is actively working with the United States Environmental Protection Agency on an appropriate solution to address this situation.

The Di Giorgio site is located 18 miles southeast of the Bakersfield, CA metropolitan area. The purpose of the site, as a PAMS Type 3 site, is to monitor maximum ozone concentrations and transport from upwind urban areas. The site also monitors NO_2, NMOC, NMHC, and meteorology and CARB plans to install methane/CO_2 and trace CO analyzers for special purpose monitoring. In addition, a NOy monitor will be added to the Arvin-Di Giorgio air monitoring site to comply with the latest regulation for PAMS Type 3 sites. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations decrease due to shorter daylight hours and lower temperatures. Pollutants occur locally and are also transported into the area by wind.

Bakersfield-Planz

Bakersfield, CA is located at the southern end of the San Joaquin Valley with mountains to the east, west, and south. Because the mountains block or slow down air flow pollutants can get trapped and build up in the area. Pollutants occur locally, and are transported from upwind locations into the area by the wind. The Bakersfield-Planz monitoring site is operated by CARB and is located 6 miles north of the Bakersfield, CA metropolitan area. It began operating in September 2000. The purpose of the site is to monitor representative concentrations of PM2.5 from upwind and nearby urban areas. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events because the wind can cause PM2.5 to become suspended in the air.

Bakersfield-California

Bakersfield, CA is located at the southern end of the San Joaquin Valley with mountains to the east, west, and south. Because the mountains block or slow down air flow pollutants can get trapped and build up in the area. Pollutants occur locally, and are transported from upwind locations into the area by the wind. The Bakersfield-California monitoring site is operated by CARB and is located in the Bakersfield, CA metropolitan area. It began operating in March 1994. The purpose of the site is to monitor representative concentrations of hourly and daily ozone, PM10, and PM2.5 in an urban area. After the shutdown of the Bakersfield-Golden site, the District requested CARB's permission to temporarily operate a real time PM10 monitor at the Bakersfield-California site (06-029-0014). The temporary PM10 monitor was used for daily AQI forecasting purposes. This temporary monitor was later moved to the Bakersfield-Muni site, however the monitor is no longer operating at Bakersfield-Muni (see Appendix C for details). The Bakersfield-California site also monitors NO_2 and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events because the wind can cause PM2.5 to become suspended in the air.

Edison

Edison, CA is located at the southern end of the San Joaquin Valley with mountains to the east, west, and south. Because the mountains block or slow down air flow pollutants can get trapped and build up in the area. Pollutants occur locally, and are transported from upwind locations into the area by the wind. The Edison monitoring site is operated by CARB and is located 9 miles east of the Bakersfield, CA metropolitan area. It began operating in January 1980. The purpose of the site is to monitor representative concentrations of hourly ozone from upwind and nearby urban areas. The site also monitors NO_2 and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations decrease due to shorter daylight hours and lower temperatures.

Fresno-Garland

Fresno, CA is located in the central part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally, and are transported from upwind locations into the area by the wind. In December 2011, CARB moved the Fresno-First monitoring site to Garland Avenue which is two blocks north of the Fresno-First site. The new site is now referred to as Fresno-Garland and became operational on December 31, 2011. The Fresno-Garland monitoring site is a National Core (NCore) site operated by CARB and is located in the Fresno, CA metropolitan area. The purpose of the site is to monitor representative concentrations

of hourly ozone, PM2.5, and PM10 in an urban area. The site also monitors CO, NO_2, SO_2, NMOC, NMHC, toxics, and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events because the wind can cause PM2.5 to become suspended in the air. On rare occasions, this area of the San Joaquin Valley experiences wind events that can carry dust into the area or lift local dust particles into the air. Such events can cause PM10 concentrations to increase.

Modesto-14th Street

Modesto, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally, but the wind can transport pollutants into the area from upwind locations or through the Sacramento Delta from the Bay Area. The Modesto-14th Street monitoring site is operated by CARB and is located in the Modesto, CA metropolitan area. It began operating in January 1981. The purpose of the site is to monitor representative concentrations of hourly ozone, PM2.5, and PM10 in local and upwind urban areas. The site also monitors CO and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events because the wind can cause PM2.5 to become suspended in the air. Occasionally, wind will carry dust across the city and cause PM10 concentrations to increase, but PM10 exceedances are rare.

Oildale

Oildale, CA is located at the southern end of the San Joaquin Valley with mountains to the east, west, and south. Because the mountains block or slow down air flow pollutants can get trapped and build up in the area. Most pollutants occur locally, however, a small amount are also transported from upwind locations into the area by the wind. The Oildale monitoring site is operated by CARB and is located 6 miles north of Bakersfield, CA within the metropolitan area. It began operating in January 1980. The purpose of the site is to monitor representative concentrations of hourly ozone concentrations, and PM10 every 6 days in an urban area. The site also monitors meteorology. During the summer months, high temperatures and longer daylight hours

contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. Not only does the metropolitan area generate its own pollution, it is also the recipient of pollutants that get transported by wind. On rare occasions, this area of the San Joaquin Valley experiences wind events that can carry dust into the area or lift local dust particles into the air. Such events can cause PM10 concentrations to increase.

Shafter

Shafter, CA is located at the southern end of the San Joaquin Valley with mountains to the east and west, and 58 miles to the south. Because the mountains to the south are further away, southward air flow is less obstructed through Shafter so pollutant build-up is less pronounced compared to Bakersfield and the towns further south. Pollutants occur locally and wind can transport pollutants into and through Shafter from nearby and upwind areas. The Shafter monitoring site is a shared site operated by CARB and the SJVAPCD and is located 18 miles northwest of the Bakersfield, CA metropolitan area. It began operating in January 1989. This site was established as a PAMS Type 1 site, located in an area upwind of Bakersfield and not to be influenced by upwind or local ozone precursor emissions. In addition to ozone, the site also monitors NO_2, total- and speciated-VOC and meteorology for the PAMS program. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. Being located upwind of Bakersfield, the Shafter site tends to have lower ozone concentrations than does the metropolitan area to the south.

Stockton-Hazelton

Stockton, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally, but the wind can transport pollutants into the area from upwind locations or through the Sacramento Delta from the Bay Area. The Stockton-Hazelton monitoring site is operated by CARB and is located in the Stockton, CA metropolitan area. It began operating in June 1976. The purpose of the site is to monitor representative concentrations of ozone, PM2.5, and PM10 in an urban area. The site also monitors CO, NO_2, toxics, and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events because the wind can cause PM2.5 to become suspended in the air. On rare occasions, wind will carry dust across the city and cause PM10 concentrations to increase, but PM10 exceedances are rare.

Visalia-Church

Visalia, CA is located where the central and southern parts of the San Joaquin Valley meet. The Sierra Nevada mountain range is approximately 20 miles east of Visalia. North-south air flow is virtually unobstructed. Pollutants occur locally, and can be transported from upwind locations into the area by the wind. The Visalia-Church monitoring site is operated by CARB. It began operating in July 1979. The purpose of the site is to monitor representative concentrations of hourly ozone, PM2.5, and PM10 from upwind and nearby urban areas. The site also monitors NO_2 and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events because the wind can cause PM2.5 to become suspended in the air. On rare occasions, wind will carry dust across the city and cause PM10 concentrations to increase, but PM10 exceedances are rare.

Sequoia and Kings National Park and Forest Monitoring Sites

Sequoia-Ash Mountain

The Ash Mountain monitoring station is operated by Sequoia National Forest and is located at the southern entrance of Sequoia National Park at a 1,500-foot elevation. It originally began operating in 1985, though the site has been relocated several times over the years. The site demonstrates the hourly ozone concentrations in the foothills. The site also monitors PM2.5 and meteorology. On summer days, ozone and precursors can be transported to Ash Mountain from other locations. At this location, there are significantly lower hourly emissions of NOx as compared to urban areas such as Bakersfield, or Fresno, CA. The amount of available NOx at Ash Mountain to scavenge the ozone is much lower. Because the ozone scavenging at Ash Mountain is much less than the ozone scavenging in urban areas, Ash Mountain can experience elevated ozone concentrations for a 24-hour period during ozone episodes. Since the ozone concentration is already fairly high at dawn, only a relatively small amount of additional ozone can cause levels in the atmosphere to exceed federal standards.

Sequoia-Lower Kaweah

The Lower Kaweah monitoring station is operated by Sequoia National Forest and is located at the southern entrance of Sequoia National Park at a 6,200-foot elevation. It began operating in April 1987. The site demonstrates the hourly ozone concentrations in a rural area. The site also monitors meteorology. On summer days, ozone and precursors can be transported to Ash Mountain from other locations. At this location, there are significantly lower hourly emissions of NOx as compared to urban areas such as Bakersfield, or Fresno, CA. The amount of available NOx at Lower Kaweah to scavenge the ozone is much lower. Because the ozone scavenging at Lower Kaweah

is much less than the ozone scavenging in urban areas, Lower Kaweah can experience elevated ozone concentrations for a 24-hour period during ozone episodes. Since the ozone concentration is already fairly high at dawn, only a relatively small amount of additional ozone can cause levels in the atmosphere to exceed federal standards.