

DRAFT

High Wind PM10 Exceptional Events Mitigation Plan for the South Coast Air Basin and the Coachella Valley Portions of the Salton Sea Air Basin

2018

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1. Introduction

1.1. Purpose

The U.S. EPA has established rule 40 CFR 51.930 - Mitigation of Exceptional Events that requires States to take appropriate and reasonable actions to protect public health from exceedances or violations of the National Ambient Air Quality Standards. This involves preparation of a mitigation plan for recurring natural events or events caused by human activity unlikely to recur at a particular location that cause repeated exceedances of an ambient air quality standard. A State requesting an exclusion of air quality data due to exceptional events must at minimum:

- Provide for prompt public notification whenever air quality concentrations exceed or are expected to exceed an applicable ambient air quality standard;
- Provide for public education concerning actions that individuals may take to reduce exposures to unhealthy levels of air quality during and following an exceptional event; and
- Provide for the implementation of appropriate measures to protect public health from exceedances or violations of ambient air quality standards caused by exceptional events.

The South Coast Air Quality Management District (SCAQMD) has prepared this PM10 mitigation plan for the South Coast Air Basin (SoCAB or Basin) and the Coachella Valley portion of the Salton Sea Air Basin (SSAB). Unless explicitly stated, all mitigation measures and programs implemented by the SCAQMD apply to both the South Coast Air Basin and the Coachella Valley portion of the Salton Sea Air Basin.

1.2. Exceptional Events Rule Requirements

EPA promulgated the Exceptional Events Rule in 2007, pursuant to the 2005 amendment of Clean Air Act (CAA) section 319. In 2016, EPA finalized revisions to the Exceptional Events Rule. The 2007 Exceptional Events Rule and 2016 Exceptional Events Rule revisions added sections 40 CFR §50.1(j)-(r), 50.14, and 51.930 to title 40 of the Code of Federal Regulations (CFR). These sections contain definitions, criteria for EPA approval, procedural requirements, and requirements for air agency demonstrations. EPA reviews the information and analyses in the air agency's demonstration package using a weight of evidence approach and decides to concur or not concur. The demonstration must satisfy all of the Exceptional Events Rule criteria for EPA to concur with the exclusion of air quality data from regulatory decisions.

Under 40 CFR §50.14(c)(3)(iv), the air agency demonstration to justify data exclusion must include:

- "A narrative conceptual model that describes the event(s) causing the exceedance or violation and a discussion of how emissions from the event(s) led to the exceedance or violation at the affected monitor(s);"
- "A demonstration that the event affected air quality in such a way that there exists a clear causal relationship between the specific event and the monitored exceedance or violation;"
- "Analyses comparing the claimed event-influenced concentration(s) to concentrations at the same monitoring site at other times" to support the requirement above;

- “A demonstration that the event was both not reasonably controllable and not reasonably preventable;” and
- “A demonstration that the event was a human activity that is unlikely to recur at a particular location or was a natural event.”

In addition, the air agency must meet several procedural requirements, including:

1. Submission of an Initial Notification of Potential Exceptional Event and flagging of the affected data in EPA's Air Quality System (AQS) as described in 40 CFR §50.14(c)(2)(i);
2. Completion and documentation of the public comment process described in 40 CFR §50.14(c)(3)(v); and
3. Implementation of any applicable mitigation requirements as described in 40 CFR §51.930.

1.3. PM10 Fugitive Dust (Particulate Matter Less than 10 Microns)

PM10 is a major air pollutant consisting of small, suspended solid or liquid particles of dust, sand, metallic and mineral substances, road-surfacing materials, pollen, smoke, fumes, and aerosols. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the air sacs in the lungs where they may be deposited, resulting in adverse health effects. PM10 also causes visibility reduction and is classified as a criteria pollutant. Therefore, the SCAQMD must reduce emissions to meet the national health-based air quality standard. The PM10 NAAQS requires that a concentration of 150 $\mu\text{g}/\text{m}^3$, averaged over 24-hours, cannot be exceeded more than once per year averaged over three years.

1.4. Geographical Setting

The SCAQMD has jurisdiction (Figure 1) over an area of approximately 10,743 square miles, consisting of Southern California's South Coast Air Basin (SoCAB or Basin), and the Riverside County portions of the Salton Sea Air Basin (SSAB) and parts of the Mojave Desert Air Basin (MDAB). The Basin, which is a sub-region of the SCAQMD's jurisdiction, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. It includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Basin has an area of 6,800 square miles with a population of approximately 16 million people. The Riverside County portion of the MDAB in the SCAQMD jurisdiction includes Joshua Tree National Park and the desert areas to the east, up to the edge of the Palo Verde Valley. The Riverside County portion of the SSAB encompasses the Coachella Valley and is bounded by the San Jacinto Mountains in the west and spans eastward to the western edge of Joshua Tree National Park. The Coachella Valley, shown in Figure 1, consists of approximately 2,500 square miles in central Riverside County, aligned northwest-southeast from the San Gorgonio Pass (often referred to as the Banning Pass) to the Salton Sea and bounded by the Little San Bernardino Mountains to the northeast and the San Jacinto Mountains to the southwest. The Santa Rosa Mountains are to the west of the northern part of the Salton Sea. The Coachella Valley is the most populated area in this desert

region, encompassing several communities, including Palm Springs, Desert Hot Springs, Cathedral City, Rancho Mirage, Palm Desert, Indian Wells, La Quinta, Indio, Coachella, Thermal, and Mecca.

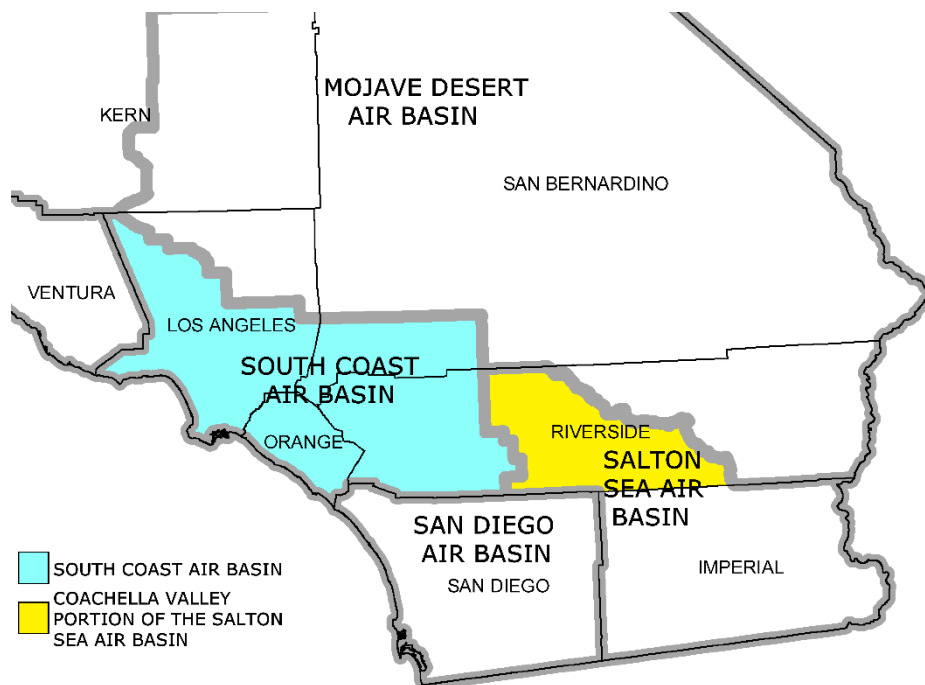


Figure 1 – The South Coast Air Basin and the Coachella Valley Portion of the Salton Sea Air Basin
(map adapted from the California Air Resources Board)

The climate and geography of the Coachella Valley significantly impacts regional air quality. The Coachella valley is isolated from surrounding climates due to adjacent mountain ranges leading to a hot and dry desert with sparse vegetation. Severe drought, high winds and blowing sand, flooding, and air temperature inversions all impact air quality in the region. As the desert floor heats up during spring, cooler coastal air masses are drawn through the narrow San Geronio Pass into the desert. The narrow San Geronio Pass creates a funnel effect, resulting in strong winds that frequently exceed 40 miles per hour and flow southeast. The wind can re-suspend, transport and subsequently deposit large quantities of blowing, abrasive sand and dust in the valley.

The local mountains within and surrounding the Coachella Valley are composed of erosive rock, which is deposited in drainages that cross the valley floor. These sediments are routinely driven aloft and transported by prevailing winds that blow through the San Geronio Pass and down the Coachella Valley, as well as winds generated by thunderstorms in the deserts of southeastern California, Arizona, Nevada and Mexico. Most of the central valley floor has been designated as a “Blowsand Hazard Area” by the Coachella Valley Association of Governments and Riverside County.

1.5. Meteorological Setting

The climate of the SCAQMD jurisdiction varies considerably between the coastal zone, inland valleys, mountain areas, and deserts. Most of the Basin is relatively arid, with very little rainfall and abundant

sunshine during the summer months. It has light winds and poor vertical mixing compared to most other large urban areas in the U.S. The combination of poor air dispersion and abundant sunshine provides conditions especially favorable to the formation of photochemical smog and the trapping of particulates and other pollutants. The Basin is bounded to the north and east by mountains with maximum elevations exceeding 10,000 feet. The unfavorable combination of meteorology, topography, and emissions from the nation's second largest urban area results in the Basin having some of the worst air quality in the U.S.

The Coachella Valley is subject to many of the same high wind mechanisms as the Basin, but is also impacted by unique conditions associated with the desert environment and the terrain that surround the Valley. The meteorological setting for the Basin and the Coachella Valley and the surrounding western deserts of North America have been extensively studied in past high-wind natural event analyses and other meteorological and air quality studies. Typical tools for analysis include weather charts, meteorological/air quality measurements and observations (e.g., winds, pressure gradients, and thermal profiles), trajectory analyses, radar data, and satellite imagery. Most of the wind mechanisms associated with high-wind PM10 events are described in the sections below. However, other mechanisms may still play a role in future exceptional events.

1.5.1. South Coast Air Basin High-Wind Natural Event Meteorology

Analyses of natural events in the Basin have shown that high PM10 concentrations due to strong winds are mainly associated with Santa Ana wind events that bring strong downslope flows to Southern California. These offshore flows are generated from high surface pressures to the north, over the Great Basin region, as well as thermal gradients and strong winds aloft. Strong westerly (onshore) winds can also generate windblown dust in the Basin, often caused by Pacific storm systems reaching the coast. Occasionally, outflows from summertime thunderstorm complexes over the southwestern U.S. deserts or northern Mexico can bring entrained dust into the Basin from the south and east.

1.5.2. Coachella Valley High-Wind Natural Event Meteorology

Previous natural event analyses defined four meteorological mechanisms that lead to high-wind PM10 events in the Coachella Valley, including:

- **Type 1:** Strong pressure and density gradients forcing high winds through the San Geronio Pass;
- **Type 2:** Storm system/frontal passages;
- **Type 3:** Thunderstorm downbursts, outflow winds, and gust fronts from thunderstorms ; and
- **Type 4:** Strong Santa Ana wind events.

In Type 1 high-wind events, low surface pressures in the desert cause cooler and denser ocean-modified air to move through the San Geronio Pass into the Coachella Valley. As synoptic weather patterns reinforce the localized regime through wind-inducing surface pressure gradients, strong and widespread winds result that frequently exceed 30 mph in the Coachella Valley. These winds can persist for many hours and are predominantly from the west-northwest. Type 1 events are most prevalent in the spring, but can occur at other times of the year.

In Type 2 events, the passage of storm systems can similarly induce strong winds through the San Geronio Pass, as frontal passages cause surface wind shifts (wind shear) and wind speed increases. These storm passages often produce little or no precipitation in the Coachella Valley. The winds typically last

only a few hours and are tend to be associated with dynamic, fast-moving winter storms, but are also seen in the fall and spring. At times, considerable overlap of the meteorological mechanisms can occur, as the Type 1 and Type 2 mechanisms can combine to cause very strong winds in the Coachella Valley.

Type 3 wind events involve strong winds generated by summertime thunderstorms. The convective activity in thunderstorms produces strong downdrafts of cooler air, causing wind gusts that can exceed 60 mph. While the thunderstorms are usually localized events of relatively short duration, the associated downbursts and outflows can suspend large amounts of natural desert soil, which can be transported over large distances, even after the gusty winds subside. Also, a combination of thunderstorm cells can form strong thunderstorm complexes over the deserts of the southwestern U.S. and northern Mexico and produce widespread areas of windblown dust and sand, along with complicated wind flows. The entrained dust can be deeply suspended, transporting particulates to the Coachella Valley over significant distances, even under relatively weak local wind conditions in the Coachella Valley. The outflows from thunderstorms that occur during North American monsoons over the deserts of Mexico and the southwestern U.S. can create sand and dust storms of entrained particulates, which can reach as much as 3,000 feet deep in the atmosphere and span hundreds of miles. These large, strong dust storms are sometimes called ‘haboobs,’ especially when there is a visible wall of sediment at the gust front.

The Type 3 meteorological conditions lead to many of the highest PM₁₀ episodes in the Coachella Valley. The causal condition, mainly the North American monsoon pattern, is relatively simple to identify and predict, with the presence of subtropical moisture from the southeast through northern Mexico and into the Sonoran Desert, mainly in northern Mexico and into the deserts areas of the southwestern U.S. in Arizona and Imperial County, California. However, the ability to predict the behavior of thunderstorms and their outflows is a challenge for forecasters. Figure 2 shows the geographic extent of the Sonoran Desert. Besides the transported dust, some local material may also be added from the Coachella Valley due to the wind activity on both natural and anthropogenic sources.

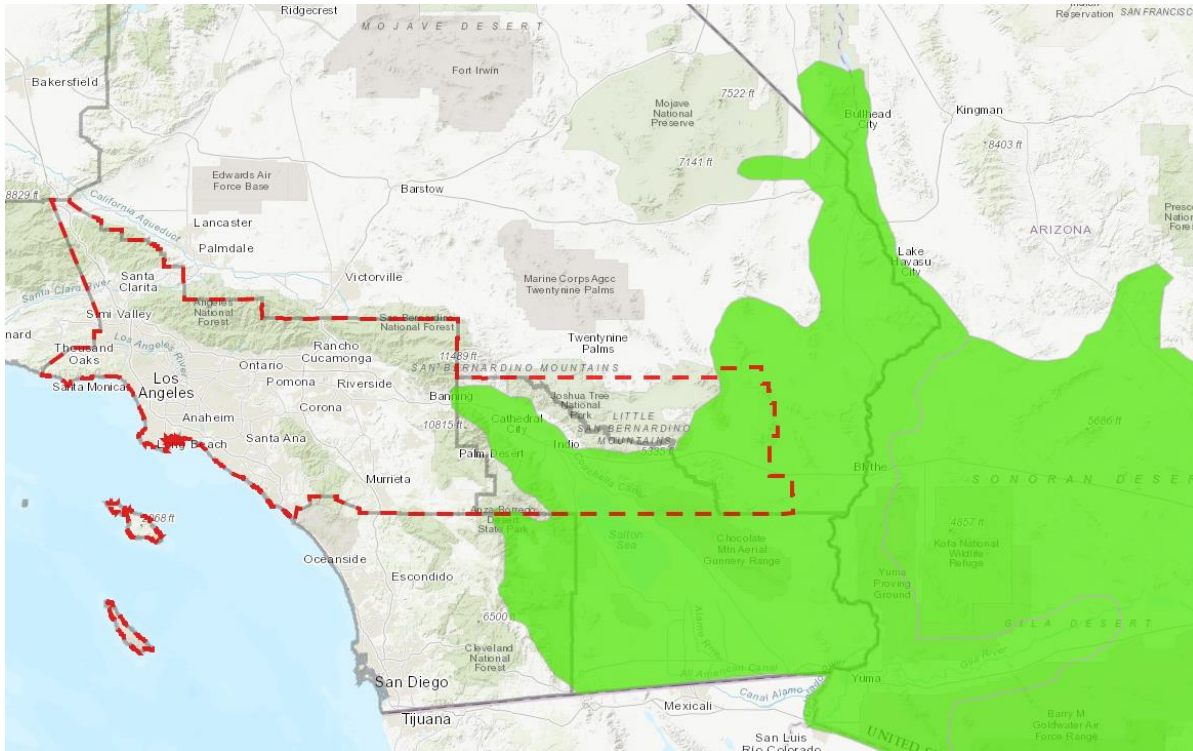


Figure 2 – The Geographical Extent of the Sonoran Desert in the Southwestern United States.

Type 4 wind events involve very strong Santa Ana wind events where high pressure and cold temperatures over the Great Basin cause strong northerly or north-northeasterly winds that accelerate downhill on the lee side of the San Bernardino Mountains. These relatively infrequent events can entrain blowsand from the Morongo Valley, as well as the San Geronio Pass and the northern Coachella Valley, leading to very high PM₁₀ concentrations. These strong Santa Ana wind events mainly occur in late-fall or winter.

1.6. PM₁₀ Attainment Status

1.6.1. South Coast Air Basin Attainment Status

In July 1987, U.S. EPA promulgated the 24-hour NAAQS of 150 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) for PM₁₀ and an annual average PM₁₀ NAAQS of 50 $\mu\text{g}/\text{m}^3$. The annual NAAQS was revoked, effective December 18, 2006. The South Coast Air Basin Attainment Redesignation Request and PM₁₀ Maintenance Plan was approved by U.S. EPA on June 26, 2013, effective on July 26, 2013 (78 FR 38223). While Basin air monitoring stations have occasionally exceeded the level of the 24-hour PM₁₀ NAAQS, due to high-wind events, it has not violated the form of the standard since 2008, which allow for up to an average of one exceedance per year over a 3-year period at a monitoring station. While the Basin is in attainment of the PM₁₀ NAAQS, it is feasible that exceptional events, especially those related to high winds or fireworks, will lead to requests for exclusion of exceedances under the Exceptional Event Rule. Importantly, the Basin annual average PM₁₀ concentrations have decreased continuously since 1990, showing the effectiveness of policy aimed at reducing anthropogenic emissions.

1.6.2. Salton Sea Air Basin Attainment Status

On April 18, 2003, U.S. EPA approved the Coachella Valley State Implementation Plan (2003 CVSIP), which addressed future-year attainment of the annual average PM₁₀ NAAQS with a 2006 attainment deadline. This annual federal standard was revoked, effective December 15, 2006. Since 2007, annual average PM₁₀ concentrations have met the revoked federal annual standard (50 µg/m³). The 2003 CVSIP also addressed continued attainment of the 24-hour PM₁₀ federal standard, except for uncontrollable natural events. Since the mid-1990s, peak 24-hour average PM₁₀ concentrations have not exceeded the current federal standard (150 µg/m³) other than on days with windblown dust from natural events, which can be excluded upon U.S. EPA concurrence consistent with the Exceptional Event Rules and prior policies. The PM₁₀ data from the Coachella Valley monitors shows attainment of the PM₁₀ 24-hour NAAQS after the removal of the flagged high-wind exceptional events. The Coachella Valley Redesignation Request and PM₁₀ Maintenance Plan was postponed by the U. S. EPA pending additional monitoring and analysis in the Southwestern Coachella Valley. A new air monitoring station in the community of Mecca, in addition to the long-term Indio and Palm Springs locations, has been in operation with data submitted to the U.S. EPA Air Quality System (AQS) database since 2015.

Since the mid-1990s, the only days that have exceeded the 24-hour PM₁₀ federal standard at the SCAQMD Coachella Valley monitoring stations have been associated with high-wind natural events. Most of this data has been flagged in the U.S. EPA Air Quality System (AQS) database to be excluded for comparison to the NAAQS, as allowed by the U.S. EPA Exceptional Events Rule and its predecessor, the Natural Events Policy. As a result, the SCAQMD will continue to seek a re-designation by U.S. EPA for the Coachella Valley to attainment for the PM₁₀ NAAQS, once sufficient data from PM₁₀ monitors in Palm Springs, Indio, and the new Mecca station can be finalized and fully evaluated for exceptional events, contingent upon U.S. EPA review.

40 CFR 51.930 Mitigation of Exceptional Events

The following sections outline the requirements of the Mitigation Plan and summarizes how the public health impacts of elevated PM10 concentrations caused by high winds are mitigated by SCAQMD measures and programs.

51.930(b)(2) - Plan components. At a minimum, each mitigation plan...shall contain provisions for the following:

Requirement in Mitigation Plan: Public notification to and education programs for affected or potentially affected communities. Such notification and education programs shall apply whenever air quality concentrations exceed or are expected to exceed a NAAQS with an averaging time that is less than or equal to 24-hours.

Location in Federal Register: 51.930(b)(2)(i)

2. Public Notification and Education

SCAQMD is committed to disseminate the current air quality information, research and air quality programs to the public at large. Data from SCAQMD air monitoring stations is used for real-time public notification of air pollution events, air quality forecasting, and the analysis and modeling for strategic plan development, including the preparation of the Air Quality Management Plan (AQMP). Due to the large population in Southern California and the complexity of the geography and meteorology, a relatively large number of air monitoring stations are utilized to adequately describe air quality and meteorology in SCAQMD's jurisdiction. As a whole, the SCAQMD air monitoring network successfully meets the needs for planning, public notification, and forecasting purposes.

SCAQMD maintains a robust real-time air monitoring network to support the accurate mapping of data and transmittal of episodic air quality alerts for the large population and geographic diversity of the SoCAB and the Coachella Valley. The dissemination of this large quantity of current air quality information is accomplished through several mediums. Data from the criteria pollutants that are measured continuously are available to the public in near real-time, through the SCAQMD website (<http://www.aqmd.gov>), smart-phone applications, U.S. EPA AirNow system (<http://www.airnow.gov>), and California Air Resources Board website (<http://www.arb.ca.gov/aqd/aqmoninca.htm>), as well as through the SCAQMD Interactive Voice Response (IVR) automated phone system (1-800-CUT-SMOG). SCAQMD encourages public awareness and provides educational information on the public health impacts of PM10 through the SCAQMD website, informational brochures, windblown dust and ash advisories, public meetings and conferences, and press releases.

SCAQMD provides daily air quality forecasts to the public, predicting day-in-advance concentrations and Air Quality Index (AQI) values of ozone, PM2.5, PM10, CO, and NO2 for 38 source-receptor areas throughout SCAQMD's jurisdiction, as well as the Antelope Valley and Mojave Desert Air Quality Management District jurisdictions. SCAQMD also provides high wind/windblown dust forecasts for the Coachella Valley in accordance with the SCAQMD Rule 403.1, agricultural and wildland prescribed fire

burn forecasts and wintertime residential wood burning forecasts. SCAQMD air quality forecast tools utilize, real-time monitoring data, empirical/statistical models, prognostic grid models, and forecaster experience. Current and historical air quality and meteorological data are critical to the forecasting process. The SCAQMD measurements are used to develop the empirical models and to provide current inputs during daily forecast preparation. The forecasts are disseminated to the public through the SCAQMD and U.S. EPA AirNow system, the SCAQMD IVR phone system, and through the news media, as well as by subscription via email, RSS feeds, and Twitter, using the U.S. EPA EnviroFlash alert system (<http://airalerts.org>). Many schools, recreational facilities, sports organizations and individuals subscribe to these services.

Warnings of current or forecasted air pollution events that occur are transmitted to the public via the SCAQMD website, SCAQMD mobile application, Enviroflash-based email, Enviroflash-based text messages, recorded phone messages, press releases, and social media feeds, including Facebook and Twitter. At this time, air quality notifications are predominantly driven by PM_{2.5} and summertime ozone measurements, although PM₁₀ episodes can also occur occasionally during exceptional events (e.g., natural windblown dust or ash events, wildfires, and fireworks displays), especially in the Coachella Valley. During these natural events and when the PM₁₀ levels reach Unhealthy for Sensitive Groups, a Windblown Dust and Ash Advisory is issued to identify the affected areas, notify the public and educate the public about how to reduce exposure. The SCAQMD's recommendations on the Windblown Dust Advisory is provided below:

In areas where windblown dust and ash are occurring: Everyone should avoid any vigorous outdoor or indoor exertion; people with respiratory or heart disease, pregnant women, older adults, and children should remain indoors. Keep windows and doors closed or seek alternate shelter. Run your air conditioner if you have one and keep the fresh air intake closed and the filter clean to prevent bringing additional particulates inside. Avoid using a swamp cooler or whole-house fan to prevent bringing additional particulates inside. To avoid worsening the health effects of particulate matter, don't use indoor or outdoor wood-burning appliances, including fireplaces.

51.930(b)(2)(ii) - Steps to identify, study and implement mitigating measures, including approaches to address each of the following:

Requirement in Mitigation Plan: Measures to abate or minimize contributing controllable sources of identified pollutants.

Location in Federal Register: 51.930(b)(2)(ii)(A)

3. Fugitive Dust Control Measures

SCAQMD adopted several rules designed to further reduce fugitive dust and the corresponding PM₁₀ emissions as part of a comprehensive strategy to achieve and maintain attainment of State and federal air quality standards. These rules include *Rule 403 – Fugitive Dust* that applies to the SoCAB and SSAB, *Rule 1186 – PM₁₀ Emissions from Paved and Unpaved Roads and Livestock Operation* that applies to the entire SCAQMD jurisdiction, *Rule 1157 – PM₁₀ Emission Reductions from Aggregate and Related*

Operations that applies to the entire SCAQMD jurisdiction, and *Rule 403.1 - Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources* that applies to SSAB.

SCAQMD has also developed various rules that indirectly address fugitive PM10 emissions and apply to both SoCAB and SSAB. These rules include: *Rule 1466 - Control of Particulate Emissions from Soils with Toxic Air Contaminants*; *Rule 1156 – Further Reductions of Particulate Emissions from Cement Manufacturing Facilities*.

At the State Level, Assembly Bill 1318 was passed in 2009 to establish requirements for the expenditure of the mitigation funds from the CPV Sentinel Energy Project power plant for emission reductions projects in the Coachella Valley. Among other projects, some of these funds were used to mitigate fugitive emissions from vehicular transport on unpaved roadways.

A description of each of these rules and how they would protect public health from exceedances or violations of ambient air quality standards is provided below:

3.1. Rule 403 (Fugitive Dust) and Rule 403.1 (Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources)

Fugitive dust is a generic term used to describe any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person. Fugitive dust can vary in size and composition, depending on the location, wind direction, time of the day, and the time of season for its source. Rule 403 (Fugitive Dust) was adopted in 1976 and has been amended six times since adoption. The requirements in Rule 403 are applicable to the SoCAB and to the Coachella Valley portion of the SSAB. The purpose of Rule 403 is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources. Rule 403 requires implementation of control measures to prevent, reduce, or mitigate fugitive dust emissions and includes a performance standard that prohibits visible emissions from crossing any property line. Under Rule 403, large operations (projects greater than 50 acres and/or more than 5,000 cubic yards of daily earth-movement) are required to notify SCAQMD of the project location and implement specific control measures and maintain recordkeeping. Rule 403 can be viewed or downloaded at: <http://www.aqmd.gov/rules/reg/reg04/r403.pdf> Forms for large operation submittals can be viewed or downloaded at: http://www.aqmd.gov/comply/Forms/403N_8_2004.doc.

In spite of these requirements throughout the SCAQMD jurisdiction, ground disturbances, geological conditions, or meteorological conditions may result in dust generation that constitutes a chronic public nuisance, or would prevent attainment of federal PM10 standards. These limited areas may warrant additional dust control efforts on the part of local governments. A local dust control policy that requires preparation and approval of a dust control plan for all projects seeking a grading permit in such limited areas may be needed to supplement current Rule 403 requirements. Local governments may also choose to apply specific control measures crafted to address their chronic public nuisance dust problems or PM10 exceedances.

SCAQMD Rule 403.1 (Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources), adopted in 1993 and amended twice, is a companion regulation to Rule 403 that is only applicable to fugitive dust sources in the Coachella Valley. Rule 403.1 establishes special requirements for Coachella Valley fugitive dust sources under high-wind conditions and requires SCAQMD approval of dust control

plans for sources not subject to local government ordinances (e.g., school districts). SCAQMD compliance staff ensures compliance with Rules 403 and 403.1 to complement the fugitive dust control programs developed by local Coachella Valley governments. Rule 403.1 can be viewed or downloaded at: <http://www.aqmd.gov/rules/reg/reg04/r403-1.pdf>.

Numerous local governments in the Coachella Valley have adopted dust control ordinances that require approval of a dust control plan prior to local government issuance of grading permits. Many of these dust control ordinances were approved into the California SIP by the U.S. EPA effective on January 8, 1999. (See cf. 63 FR 67784-67787, dated December 9, 1998) The Coachella Valley's response to its elevated levels of PM₁₀ illustrates how local dust control plans can work to address areas with elevated particulate levels. SCAQMD and Coachella Valley local government staff have developed a guidance handbook to assist persons preparing and reviewing dust control plans.

This guidance handbook as well as a comprehensive overview of SCAQMD dust control requirements and strategies are covered in monthly classes held at SCAQMD Headquarters. "Dust Control in the South Coast Air Basin" is a three-hour training class that provides attendees with a comprehensive overview of SCAQMD dust control requirements and current strategies for preventing, mitigating, and controlling the release of airborne particulate matter emissions from earth moving activities undertaken within the South Coast Air Basin. "Dust Control in the Coachella Valley" is a 3.5 hour training class that provides attendees with a comprehensive overview of SCAQMD dust control requirements, local jurisdiction ordinance requirements and current strategies for preventing, mitigating and controlling the release of airborne particulate matter emissions from man-made activities conducted within the Coachella Valley. More information about both of these classes is available at <http://www.aqmd.gov/home/programs/business/training-403-403-1-fugitive-dust>.

3.2. Rule 1157 (PM₁₀ Emission Reductions from Aggregate and Related Operations)

Rule 1157 – PM₁₀ Emission Reductions from Aggregate and Related Operations was adopted in 2005 and amended once in 2006, to further reduce PM₁₀ emissions from aggregate and related operations as part of the 2003 AQMP Control Measure BCM-08 – Further Emission Reductions from Aggregate and Cement Manufacturing Operations, which identified aggregate and cement operations as sources of PM₁₀ emissions. Aggregate and related operations are also regulated by Rule 403- Fugitive Dust, however, Rule 403 allows a choice of compliance options for general fugitive dust source categories, while Rule 1157 seeks to further minimize particulate emissions from this industry by establishing source specific performance standards and specifying operational PM₁₀ controls for various types of equipment, processes, storage piles, internal roadways at aggregate and related operations, and track-out of materials onto paved public roads.

Rule 1157 affects approximately 389 aggregate and related operations categorized as follows: 29 aggregate, 100 concrete batching, 152 concrete product, 45 hot-mix asphalt, 25 crushed miscellaneous base for concrete and asphalt recycling, and 38 "other" facilities (i.e., sand and cement blending and bagging, inert landfills handling construction and demolition debris, etc.) These facilities generate PM₁₀ during their mining, processing, and handling (i.e., transporting, loading/unloading, conveying, crushing, screening, mixing, and storing) of the aggregates. Unpaved roads and track-out from these facilities are two other significant sources of PM₁₀ emissions.

3.3. Rule 1466 (Control of Particulate Emissions from Soils with Toxic Air Contaminants)

Rule 1466 – Control of Particulate Emissions from Soils with Toxic Air Contaminants was adopted in 2017 and amended once to reduce fugitive non-volatile toxic air contaminant emissions from sites conducting earth-moving activities. It applies to sites conducting earth-moving activities where soils contain applicable toxic air contaminants as determined and designated by U.S. EPA, California Department of Toxics Substances Control (DTSC), State Water Resources Control Board (State Water Board), or Regional Water Quality Control Boards (Regional Water Boards). Additionally, this rule allows the Executive Officer to identify sites, based on a set of criteria, to be subject to the requirements of the Rule 1466. For sites that meet the applicability requirements, Rule 1466 establishes a PM10 ambient dust concentration limit, dust control measures, and requires notification to the Executive Officer prior to beginning earth-moving activities as well as when ambient PM10 dust concentration limits are exceeded. Sites are required to install and maintain signage to inform the community and discourage unauthorized access. Records of monitoring readings and other site activities are also required. The rule also include additional requirements for sites that are located at schools, early education centers, or joint use agreement properties.

Rule 1466 provides requirements for regulatory agencies and entities that are conducting earth-moving activities at sites that contain soil levels of arsenic, asbestos, cadmium, hexavalent chromium, lead, mercury, nickel, and polychlorinated biphenyls that exceed the designating agencies' threshold for action. Rule 1466's PM10 emission limit and dust control measures are intended to be base requirements and do not preclude the designating agency from implementing more stringent limits or measures. In situations where additional regulatory flexibility is necessary, the rule allows alternative dust control measures, ambient dust concentration limits, and other provisions upon Executive Officer approval.

3.4. Rule 1156 (Further Reductions of Particulate Emissions from Cement Manufacturing Facilities)

Rule 1156 was adopted on November 4, 2005 and amended twice in March 2009 and November 2015, and establishes requirements to reduce particulate matter emissions and minimize hexavalent chromium emissions from cement manufacturing operations and properties. The rule applies to cement manufacturing facilities, including but not limited to, kiln and clinker cooler, material storage, crushing, drying, screening, milling, conveying, bulk loading and unloading systems, internal roadways, material transport, and track-out. The rule includes provisions for visible emissions; material loading, unloading and transferring; cement manufacturing operations; material storage; air pollution control devices; internal roadways and areas; and track-out. Rule 1156 also has provisions for a Compliance Monitoring Plan; hexavalent chromium, PM10, and wind monitoring; and source testing. Additional provisions include Operation and Maintenance procedures; reporting and recordkeeping; and requirements after facility closure. Rule 1156 is applicable to only cement manufacturing facilities, addresses only hexavalent chromium, and does not apply to all earth-moving activities.

3.5. Rule 1186 (PM10 Emissions from Paved and Unpaved Roads, and Livestock Operations)

Rule 1186 - PM10 Emissions from Paved and Unpaved Roads and Livestock Operations, was adopted in 1997 and was amended several times (December 1998, September 1999, April 2004, and July 2008) to implement the 1994 AQMP control measure BCM-01 (Control Emissions from Paved and Unpaved Roads). In general, Rule 1186 applies to the entire SCAQMD jurisdiction, with the exception of requirement 5, which addresses unpaved roads in the South Coast Air Basin. One of the Rule 1186 requirements is for governmental agencies to procure and use certified street sweepers for routine street sweeping activities. The provisions of this rule applies to specified land uses and activities conducted within the SCAQMD which result in fugitive dust. SCAQMD staff subsequently worked with industry to develop a testing protocol to certify street sweepers both in terms of pick-up efficiency and PM10 entrainment. After the certification testing protocol was approved by the Board, street sweeper manufacturers contracted with independent testing laboratories to certify street sweeping equipment.

The purpose of this rule is to reduce the amount of particulate matter entrained in the ambient air as a result of vehicular travel on paved and unpaved public roads, and at livestock operations. Various SCAQMD regulations also require procurement of certified street sweepers to implement specific rule requirements. This list of equipment is updated periodically based on certifications test results and in response to new information.

3.6. Assembly Bill No. 1318 (South Coast Air Quality Management District: Emission Reduction Credits)

Assembly Bill 1318 (2009), in conjunction with the construction of the Sentinel power plant, provided funding for emission reduction projects that include, among others, paving of roadways in the Coachella Valley. In particular, roadways leading to, in and around mobile home parks housing farmworkers were paved to reduce fugitive dust emissions arising from vehicular traffic on unpaved roads.

Requirement in Mitigation Plan: Methods to minimize public exposure to high concentrations of identified pollutants.

Location in Federal Register: 51.930(b)(2)(ii)(B)

4. Methods to Minimize Public Exposure

The notification and education programs that are routinely disseminated to minimize public exposure are listed below. Whenever air quality concentrations *exceed or are expected to exceed a NAAQS with an averaging time that is less than or equal to 24-hours*, additional notification programs are employed.

- Dissemination of current air quality information
 - The SCAQMD website (<http://www.aqmd.gov>)
 - The SCAQMD smartphone application

- U.S. EPA AirNow System (<http://www.airnow.gov>)
- Real-time alerts subscription (<http://airalerts.org>), utilizing the U.S. EPA EnviroFlash system
- California Air Resources Board Air Quality and Meteorological Information System (AQMIS2) website (<https://www.arb.ca.gov/aqmis2/aqmis2.php>)
- The SCAQMD Interactive Voice Response (IVR) automated phone system (1-800-CUT-SMOG)
- Social Media, such as Twitter and Facebook
- Daily air quality forecast. The forecasts are disseminated to the public through:
 - The SCAQMD website (<http://www.aqmd.gov>)
 - U.S. EPA AirNow System (<http://www.airnow.gov>)
 - The SCAQMD Interactive Voice Response (IVR) automated phone system (1-800-CUT-SMOG)
 - News media
 - Subscription via email, text messaging, and Twitter, using the U.S. EPA EnviroFlash alert system (<http://airalerts.org>)
- Public notifications, advisories, alerts and warnings of elevated pollutant concentrations whenever air quality concentrations exceed or are expected to exceed a NAAQS with an averaging time that is less than or equal to 24-hours through:
 - The SCAQMD website (<http://www.aqmd.gov>)
 - Real-time alerts email subscription (<http://airalerts.org>), utilizing the U.S. EPA EnviroFlash system
 - The SCAQMD smartphone application
 - Subscription via Twitter
 - Press releases of air quality advisories
- Public education (encouraging public awareness of the health impacts of PM₁₀) through:
 - The SCAQMD website (<http://www.aqmd.gov>)
 - U.S. EPA websites (<http://www.epa.gov> and <http://www.airnow.gov>)
 - Informational brochures
 - Public meetings and conferences
 - Press releases of air quality advisories and related news stories

Requirement in Mitigation Plan: Processes to collect and maintain data pertinent to the event.

Location in Federal Register: 51.930(b)(2)(ii)(C)

5. Processes to Collect and Maintain Data Pertinent to the Event

5.1. PM₁₀ Monitoring Program

SCAQMD routinely monitors PM₁₀ concentrations at 24 locations in the Basin and the Coachella Valley, as shown in the most recent (2018) annual air monitoring network plan (Figure 3). Of these, 20 currently employ Federal Reference Method (FRM) filter samplers. The FRM PM₁₀ minimum sampling schedule set

by U.S. EPA requires one 24-hour filter sample every sixth day. At the Riverside-Rubidoux, Mira Loma, and Indio stations, the 24-hour filter sample is collected once every three days. In addition, 11 stations have continuous Federal Equivalent Method (FEM) PM₁₀ monitors, which supplement the collocated FRM measurements at eight stations and are the primary measurement at three stations. The PM₁₀ FEM measurements serve as the official reading for attainment determination on the days with no collocated FRM filter sample and provide real-time data for forecasting and public notification of air quality events.

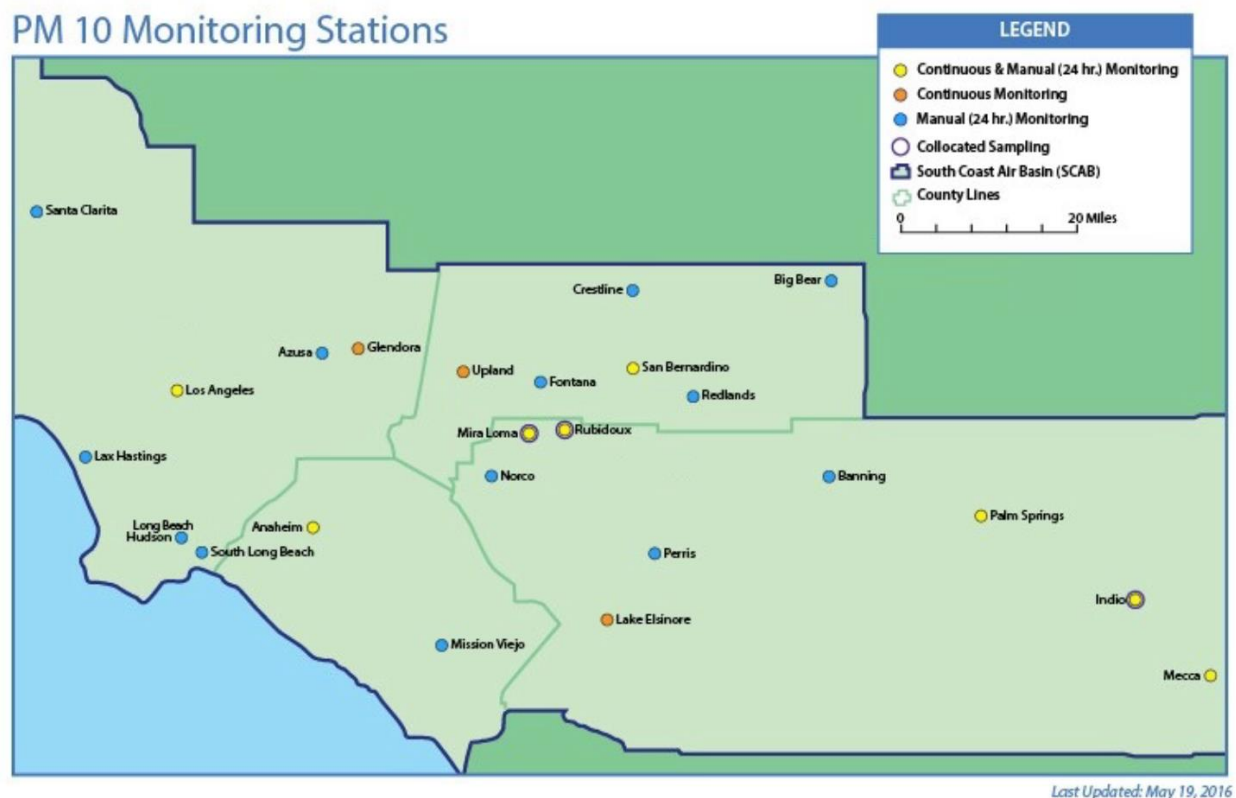


Figure 3 – Location of PM₁₀ Monitoring Stations in the SCAQMD Jurisdiction

5.2. Record Keeping

As required in 40 CFR 58.16(a), data is reported to AQS including all ambient air quality data and associated quality assurance data for all criteria pollutants, including PM₁₀ FRM/FEM mass concentration, sampler-generated average daily temperature, and sampler-generated average daily pressure, meteorological data. Past daily air quality forecasts are archived internally, whereas historical air quality data and meteorological data are all easily accessible from online databases hosted by the SCAQMD, CARB, and U.S. EPA's AirNow and AQS systems.

In addition to the air monitoring data, meteorological data, PM₁₀ advisories, weather forecasts, and air quality forecasts during an exceptional event are saved on SCAQMD servers. Other pertinent information

such as satellite data continue to remain available at their hosting websites or can be ordered through the National Climatic Data Center or other providers.

Requirement in Mitigation Plan: Mechanisms to consult with other air quality managers in the affected area regarding the appropriate responses to abate and minimize impacts.

Location in Federal Register: 51.930(b)(2)(ii)(D)

6. Intra Agency Collaboration

A number of Districts and counties that are impacted by the same sources of PM₁₀ fugitive emissions in the area maintain their own fugitive dust ordinances. These agencies are important partners in managing air quality programs, therefore, the SCAQMD and representatives from these agencies routinely communicate on a host of topics.

The SCAQMD Meteorology Team is subscribed to the notification and alert bulletins from Mojave Desert AQMD, Antelope Valley Air Pollution Control District, Ventura County Air Pollution Control District, San Diego Air Pollution Control District, and Arizona Department of Environmental Quality using the U.S. EPA EnviroFlash alert system. The Meteorology Team maintains contacts and shares information with the above agencies, as well as CARB, U.S. EPA Region 9, Clark County Department of Air Quality, Imperial County APCD and others. In addition, SCAQMD staff shares forecasting data and provides a daily forecast for the Mojave Desert and Antelope Valley AQMDs.

Requirement in Mitigation Plan: Provisions for periodic review and evaluation of the mitigation plan and its implementation and effectiveness by the State & interested stakeholders.

Location in Federal Register: 51.930(b)(2)(iii)

7. Periodic Review and Evaluation

The mitigation plan is posted online and is available to the public via SCAQMD website. SCAQMD will review and evaluate the mitigation plan every five years or sooner. In the event that SCAQMD rulemaking addressing windblown PM₁₀ occurs within that five year period, the mitigation plan will be updated in accordance with rule amendments. Any revisions will be forwarded to the U.S. EPA.

51.930(b)(2)(iii)(A) - With the submission of the initial mitigation plan according to the requirements in 51.930(b)(3) that contains the elements in 51.930(b)(2), the State must:

Requirement in Mitigation Plan: Document that a draft version of the mitigation plan was available for public comment for a minimum of 30 days;

Location in Federal Register: 51.930(b)(2)(iii)(A)(1)

8. Public Comment Documentation

The mitigation plan public comment was published in the SCAQMD Bulletin and was posted on SCAQMD website on August 16, 2018 and the public comment period was held from August 16, 2018 to _____.

Requirement in Mitigation Plan: Submit the public comments received along with its mitigation plan to the Administrator;

Location in Federal Register: 51.930(b)(2)(iii)(A)(2)

9. Public Comment Received

Following open comment period, SCAQMD received ____ public comments:

Insert any comments....

Requirement in Mitigation Plan: In its submission to the Administrator, for each public comment received, explain the changes made to the mitigation plan or explain why the State did not make any changes to the mitigation plan;

Location in Federal Register: 51.930(b)(2)(iii)(A)(3)

10. Public Comment Responses

Following open comment period, SCAQMD received and responded to ____ public comments. The responses to those comments and the changes made to the mitigation plan are outlined below:

Insert any responses to public comments and any changes to the mitigation plan....

Requirement in Mitigation Plan: The State shall specify in its mitigation plan the periodic review and evaluation process that it intends to follow for reviews following the initial review identified in 51.930(b)(2)(iii)(A).

Location in Federal Register: 51.930(b)(2)(iii)(B)

11. Periodic Review and Evaluation Process

Public comments and SCAQMD responses are posted online permanently and are available to the public via the SCAQMD website. SCAQMD will review, evaluate, solicit public feedback, and respond to public comments on the mitigation plan every five years. In the event that SCAQMD rulemaking addressing windblown PM₁₀ occurs within that five year period, the mitigation plan will be updated in accordance with rule amendments. Any revisions will be forwarded to the U.S. EPA.

Requirement in Mitigation Plan: States shall submit their mitigation plans within 2 years of being notified they are subject to 51.930(b).

Location in Federal Register: 51.930(b)(3)(i)

12. Submission of Mitigation Plan

The mitigation plan was submitted to U.S. EPA Administrator on _____ within the 2 years period since being notified as of April 2017.

Exceptional Events Mitigation Plan Checklist

In order to ensure that this Exceptional Events Mitigation Plan meets all of the requirements of 40 CFR 51.930, a checklist is provided indicating the section in this document satisfying each of the requirements.

Area Subject to Mitigation Requirements in 40 CFR 51.930: South Coast Air Basin and the Coachella Valley Portions of the Salton Sea Air Basin

Applicable Pollutant and Event Type: PM10 Fugitive Dust – High Wind Events

Date of Mitigation Document: August 2018

Element Addressed	Plan Page Number	40 CFR 51.930 Mitigation of Exceptional Events Regulatory Citation		User Notes	EPA Review Notes
		51.930(a)	A State requesting to exclude air quality data due to exceptional events must take appropriate and reasonable actions to protect public health from exceedances or violations of the NAAQS. At a minimum, the State must:	The air agency responsibilities described in 51.930(a)(1) – (a)(3) are functionally fulfilled by the mitigation plan requirements and components specified under 51.930(b)(2).	
		51.930(a)(1)	Provide for prompt public notification whenever air quality concentrations exceed or are expected to exceed an applicable ambient air quality standard;	See above – 51.930(a).	
		51.930(a)(2)	Provide for public education concerning actions that individuals may take to reduce exposures to unhealthy levels of air quality during and following an exceptional event; and	See above – 51.930(a).	
		51.930(a)(3)	Provide for the implementation of appropriate measures to protect public health from exceedances or violations of ambient air quality standards caused by exceptional events.	See above – 51.930(a).	
		51.930(b)	Development of mitigation plans for areas with historically documented or known seasonal events.	EPA responsibility.	

Element Addressed	Plan Page Number	40 CFR 51.930 Mitigation of Exceptional Events Regulatory Citation		User Notes	EPA Review Notes
		51.930(b)(1)	<i>Generally.</i> All States having areas with historically documented or known seasonal events shall be required to develop a mitigation plan with the components identified in 51.930(b)(2) and submit such plan to the Administrator according to the requirements in 51.930(b)(3).	EPA responsibility (identification of areas).	
		51.930(b)(1)(i)	For purposes of the requirements set forth in 51.930, historically documented or known seasonal events shall include those events of the same type and pollutant that recur in a 3-year period and meet any of the following:	EPA responsibility.	
		51.930(b)(1)(i)(A)	Three events or event seasons for which a State submits a demonstration under the provisions of 40 CFR 50.14 in a 3-year period; or	EPA responsibility.	
		51.930(b)(1)(i)(B)	Three events or event seasons that are the subject of an initial notification of a potential exceptional event as defined in 40 CFR 50.14(c)(2) in a 3-year period regardless of whether the State submits a demonstration under the provisions of 40 CFR 50.14.	EPA responsibility.	
		51.930(b)(1)(ii)	The Administrator will provide written notification to States that they are subject to the requirements in 51.930(b) when the Administrator becomes aware of applicability.	EPA responsibility.	

Element Addressed	Plan Page Number	40 CFR 51.930 Mitigation of Exceptional Events Regulatory Citation		User Notes	EPA Review Notes
		51.930(b)(2)	<i>Plan components.</i> At a minimum, each mitigation plan...shall contain provisions for the following:	State/local/tribal air agency responsibility.	
	10	51.930(b)(2)(i)	Public notification to and education programs for affected or potentially affected communities. Such notification and education programs shall apply whenever air quality concentrations exceed or are expected to exceed a NAAQS with an averaging time that is less than or equal to 24-hours.	State/local/tribal air agency responsibility.	
		51.930(b)(2)(ii)	Steps to identify, study and implement mitigating measures, including approaches to address each of the following:	State/local/tribal air agency responsibility.	
	11	51.930(b)(2)(ii)(A)	Measures to abate or minimize contributing controllable sources of identified pollutants.	State/local/tribal air agency responsibility.	
	15	51.930(b)(2)(ii)(B)	Methods to minimize public exposure to high concentrations of identified pollutants.	State/local/tribal air agency responsibility.	
	16	51.930(b)(2)(ii)(C)	Processes to collect and maintain data pertinent to the event.	State/local/tribal air agency responsibility.	
	18	51.930(b)(2)(ii)(D)	Mechanisms to consult with other air quality managers in the affected area regarding the appropriate responses to abate and minimize impacts.	State/local/tribal air agency responsibility.	
	18	51.930(b)(2)(iii)	Provisions for periodic review and evaluation of the mitigation plan and its implementation and effectiveness by the State & interested stakeholders.	State/local/tribal air agency responsibility.	

Element Addressed	Plan Page Number	40 CFR 51.930 Mitigation of Exceptional Events Regulatory Citation		User Notes	EPA Review Notes
		51.930(b)(2)(iii)(A)	With the submission of the initial mitigation plan according to the requirements in 51.930(b)(3) that contains the elements in 51.930(b)(2), the State must:	State/local/tribal air agency responsibility.	
	19	51.930(b)(2)(iii)(A)(1)	Document that a draft version of the mitigation plan was available for public comment for a minimum of 30 days;	State/local/tribal air agency responsibility.	
	19	51.930(b)(2)(iii)(A)(2)	Submit the public comments received along with its mitigation plan to the Administrator; and	State/local/tribal air agency responsibility.	
	19	51.930(b)(2)(iii)(A)(3)	In its submission to the Administrator, for each public comment received, explain the changes made to the mitigation plan or explain why the State did not make any changes to the mitigation plan.	State/local/tribal air agency responsibility.	
	20	51.930(b)(2)(iii)(B)	The State shall specify in its mitigation plan the periodic review and evaluation process that it intends to follow for reviews following the initial review identified in 51.930(b)(2)(iii)(A).	State/local/tribal air agency responsibility.	
		51.930(b)(3)	<i>Submission of mitigation plans.</i> All States subject to the provisions of 51.930(b) shall, after notice and opportunity for public comment identified in 51.930(b)(2)(iii)(A), submit a mitigation plan to the Administrator for review and verification of the plan components identified in 51.930(b)(2).	This provision is also described in section 51.930(b)(2)(iii)(A)(1).	
	20	51.930(b)(3)(i)	States shall submit their mitigation plans within 2 years of being notified they are subject to 51.930(b).	State/local/tribal air agency responsibility.	

Element Addressed	Plan Page Number	40 CFR 51.930 Mitigation of Exceptional Events Regulatory Citation		User Notes	EPA Review Notes
		51.930(b)(3)(ii)	The Administrator shall review each mitigation plan developed according to the requirements in paragraph (b)(2) of this section and shall notify the submitting State upon completion of such review.	EPA responsibility.	
		50.14(b)(9)	Mitigation plans.	EPA responsibility.	
		50.14(b)(9)(i)	Except as provided for in 50.14(b)(9)(ii), where a State is subject to the requirements of 40 CFR 51.930(b), the Administrator shall not place a concurrence flag in the appropriate field for the data record in the AQS database, as specified in 50.14(c)(2)(ii), if the data are of the type and pollutant that are the focus of the mitigation plan until the State fulfills its obligations under the requirements of 40 CFR 51.930(b). The Administrator may nonconcur or defer action on such a demonstration.	EPA responsibility.	
		50.14(b)(9)(ii)	The prohibition on placing a concurrence flag in the appropriate field for the data record in the AQS database by the Administrator stated in 50.14(b)(9)(i) does not apply to data that are included in an exceptional events demonstration that is:	EPA responsibility.	

Element Addressed	Plan Page Number	40 CFR 51.930 Mitigation of Exceptional Events Regulatory Citation		User Notes	EPA Review Notes
		50.14(b)(9)(ii)(A)	Submitted in accordance with 50.14(c)(3) that is also of the type and pollutant that is the focus of the mitigation plan; and	EPA responsibility.	
		50.14(b)(9)(ii)(B)	Submitted within 2-year period allowed for mitigation plan development specified in 51.930(b)(3).	This provision is also described in section 51.930(b)(3)(i).	

DRAFT

13. References

Analysis of Exceptional Events Contributing to High PM10 Concentrations in the Coachella Valley in 2008, SCAQMD, May 2011. http://www.aqmd.gov/docs/default-source/public-notice/exceptional-events/ee2008cv-ch1_intro.pdf

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Final 2002 Coachella Valley PM10 State Implementation Plan, SCAQMD, 2002. (<https://www.aqmd.gov/home/air-quality/clean-air-plans/coachella-valley-pm10-plan/final-2002-cv-pm10-plan>)

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Final 2016 Air Quality Management Plan, Appendix 2, SCAQMD, 2016 (<http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp>)