

## **Danger zone: July 4, between 10 p.m. and 2 a.m.**

By Steven Mayer

Bakersfield Californian, Tuesday, July 3, 2018

The normal graph on the Valley Air District's page couldn't contain it. Not even close.

It was July 4, 2017, and all that day the technology that monitors PM-2.5 particulate pollution in Bakersfield had remained in the good-to-moderate range — typical in the summer months when ozone smog (not PM) is the fire-breathing dragon of air pollution.

But beginning at 8 p.m., as last year's Independence Day celebrations kicked into high intensity, the PM-2.5 measurement began climbing fast.

As so-called safe & sane fireworks — as well as illegal pyrotechnics — across the city were blasted, blown, showered and shot, by 9 p.m. the PM-2.5 reading began shooting almost straight up. One might say, like a skyrocket.

Between 9 p.m. and 10 p.m., the tiny, dangerous particles that can stick in your lungs and even migrate into the bloodstream climbed from 21 micrograms per cubic meter of air — measured in hourly concentrations — to an astonishing 255.

Once levels passed beyond 75, they were already in the "very unhealthy" range, the highest or most unhealthy category on the graph. Once levels passed 150, they were literally off the charts.

But they still hadn't peaked.

At 11 p.m., the number hit its apex, 291 micrograms of harmful soot, ash and metals per cubic meter of air.

Air officials at the San Joaquin Valley Air Pollution Control District argue that the sparks and flashes are not worth the potential damage being done to the health of local residents, especially children, the elderly and those already vulnerable to spikes in air pollution.

"If valley residents feel the need to enjoy fireworks, we urge them to exhibit their patriotism by attending a professional Independence Day event in their area instead of using personal fireworks," Samir Sheikh, the district's deputy air pollution control officer, said in a news release.

"Each year," Sheikh said, "people suffer serious health consequences from direct exposure in the neighborhoods where they live and breathe, from firework activities that are entirely preventable."

The air district has long cited research showing that fine particulate matter can invade the bloodstream and get deep into the lungs. It has been linked to heart attacks and stroke.

Each year on the Fourth of July, air monitors across the valley — not just in Bakersfield — reflect spikes in PM concentrations, often four to five times higher than the health-based federal standards.

These spikes, the district said, are due in part to personal fireworks used throughout valley neighborhoods. More so, the high levels of particulate matter threaten the valley's progress in meeting air-quality standards that protect public health.

Fortunately, the annual spike in PMs tends only to last a few hours.

Last year, the numbers began to fall as quickly as they rose. By 2 a.m. on July 5, concentrations were down to 38 micrograms per cubic meter. One hour later, concentrations had dropped to 7.

Will it happen again this year? Probably, if the weather is stagnant.

If you'd like to keep track of PM levels Wednesday night — or any other day — the district's Real-time Air Advisory Network (RAAN) provides localized air quality data from an air-monitoring network that allows valley residents to track pollutants at any valley address by visiting [myraan.org](http://myraan.org).

For more information about the air district, call the regional office in Bakersfield at 392-5500.

## 24 hours of particulate matter air quality in Bakersfield during July 4-5, 2017

Hourly Fine Particulate Matter (PM2.5) concentration



Source: San Joaquin Valley Air Pollution Control District

THE CALIFORNIAN

### Health caution issued as smoke clouds over Valley

By Sabra Stafford

Turlock Journal, Tuesday, July 3, 2018

The thick haze hovering over Turlock has prompted a health warning from air quality officials and is causing some residents to reconsider their plans for the Fourth of July, as fireworks are expected to exacerbate the smoky conditions.

The San Joaquin Valley Air Pollution Control District issued a health warning for the entire region Monday because of the smoke wafting in from the County Fire burning in Napa, Lake and Yolo counties.

The health caution will remain in place until the fire is extinguished and smoke impacts are expected throughout the Valley through Tuesday at the earliest.

The County Fire was only 3 percent contained as of 3 p.m. Monday and has already consumed 44,500 acres, according to Cal Fire. The fire is burning in tall grass, brush, and dense oak and is running up steep terrain. There's more than 1,200 fire personnel on scene, as well as 119 engines and 12 helicopters in use.

Smoke from fires can cause serious health problems including lung disease, asthma attacks and increased risk of heart attacks and stroke. Where conditions warrant, people with heart or lung disease should follow their doctors' advice for dealing with episodes of particulate exposure. People with existing respiratory conditions, young children and elderly people are especially susceptible to the health effects from these pollutants. Anyone being exposed to poor air quality or wildfire smoke should move inside to an air-conditioned environment.

Fine particulate matter can invade the bloodstream, get deep into the lungs and has been linked to heart attacks and stroke. The District's Real-time Air Advisory Network detects the fine particulates in the air. Starting at noon Monday the particulate matter (PM2.5) in Turlock was at a 12, which put it in the good level. By 1 p.m. it had risen to 39 and continued to move upward until it peaked at 132 by 3 p.m., putting it in the very unhealthy range. By 4 p.m. it had fallen to 115 but was still in the very unhealthy range. When the air quality is at this level the Air District advises everyone to avoid outdoor activity if possible.

The RAAN monitors are designed to detect the fine particulates, which are microscopic in size and not visible to the human eye) that exist in smoke. Ash particles are much larger in size and will not be detected by the monitors. Therefore, an area may be experiencing ash impacts from potential fires while the PM monitor reflects a moderate reading. The Air District said if people can see ash or smell smoke then they should try to remain indoors.

The fires come just as Air District officials were expecting a drop in air quality brought about by the use of fireworks. Fireworks can increase levels of dangerous particulate matter (PM), including soot, ash and metals, which cause serious health impacts. Individuals most at risk are small children, the elderly and people with existing respiratory conditions.

Each year on the Fourth of July, air monitors across the Valley reflect spikes in PM concentrations, often four to five times higher than the health-based federal standards, and typically occur between the hours of 9 and 10 pm. These spikes are due in part to personal fireworks used throughout Valley neighborhoods and the high levels of PM threaten the Valley's progress in meeting air-quality standards that protect public health.

"If Valley residents feel the need to enjoy fireworks, we urge them to exhibit their patriotism by attending a professional Independence Day event in their area instead of using personal fireworks," said Samir Sheikh, the District's Deputy Air Pollution Control Officer. "Each year, people suffer serious health consequences from direct exposure in the neighborhoods where they live and breathe... from firework activities that are entirely preventable."

## **Raging fires shroud Valley in smoke**

By The Associated Press

Stockton Record, Tuesday, July 3, 2018

GUINDA — A massive wildfire in rural Northern California has exploded in size and forced evacuations in hot, dry weather that is sweeping through several western states where blazes are threatening thousands of homes.

The fast-moving fire that started over the weekend northwest of Sacramento grew dramatically to about 70 square miles by Monday, largely burning out of control in rugged terrain with a few cattle and horse ranches and sending smoke and ash over the Central Valley and San Francisco. The County Fire continues to gain ground, having grown to 44,500 acres, according to Cal Fire. The rapidly growing blaze is 3 percent contained, Cal Fire says.

The fire that started Saturday about 78 miles northwest of Stockton spread as strong winds pushed smoke south, dusting cars and homes with a thin layer of gray ash. About 300 people were told to flee their homes, and at least 116 buildings were threatened. No injuries were reported.

More than 1,200 fire personnel have worked to establish control lines, Cal Fire reported. Fire weather conditions remain critical, and "extreme fire behavior" has been observed, Cal Fire says. Shifting winds have created numerous active portions of the fire that have the potential to increase fire spread.

Donna Harden, 58, who lives across the street from the Western Yolo Grange hall in Guinda being used as the town evacuation center, said she had been watching the fire's progression since it started and was prepared to leave town if the flames got closer.

"It's scary," she told the Los Angeles Times. "If you look at it from here, it looks so far away. But, oh my God, it's really close. It's really close."

Meanwhile, the Pawnee fire also continued to grow slowly overnight, picking up about 200 acres. It is presently listed at 14,700 acres and remained at 75 percent containment Monday morning. Cal Fire officials expect to have the fire fully encircled with a strong containment line by Thursday.

The flames from the County Fire were chewing through the rugged terrain in the hills outside of Guinda, Cal Fire spokesman Gabe Lauderbale said.

"This fire is absolutely, extremely fast-moving," he said.

Thick smoke put a damper on what would otherwise be a busy time at nearby Lake Berryessa.

"It's frustrating," Chad Frazier, the owner of Berryessa Watersports at the Markley Cove Resort, told KGO-TV. "We were hoping with Fourth of July being on a Wednesday this this whole week would give us a bump. But obviously with the fire, it's not happening."

Smoke obscured the skies and ash dusted windshields in the Bay Area, Sacramento and Stockton regions on Sunday and Monday mornings, and the fire and its byproducts were jeopardizing air quality and public to varying extents depending on location.

All air quality monitoring stations in the Bay Area were reporting good or moderate AQI levels of particulate matter and ozone as of 8 a.m. Monday, which means that even groups predisposed to sensitivity should be safe to spend time outside, according to the Bay Area Air Quality Management District, which on Monday lifted a smoke advisory for the Bay Area that it had issued Sunday.

Winds began to shift Monday, pushing eastward from the ocean and moving some of the smoke into the Central Valley. The Delta breeze will continue to send smoke eastward and away from the Bay Area as the week progresses, said Thomas Hall, a spokesman for the Sacramento Metropolitan Air Quality District.

Ozone levels rose to unsafe levels by Monday afternoon in Sacramento County for at-risk groups such as young children, pregnant women, older people, and individuals with respiratory conditions like asthma or heart disease. In Stockton, fine particulate matter – known as PM2.5 – was rated at moderate, unhealthy for those in sensitive groups, according to the San Joaquin Valley Air Pollution Control District.

Air quality in the Sacramento area was worst in Elk Grove and Vacaville, according to a Monday afternoon tweet by the Sacramento Metropolitan Air Quality District.

Slightly cooler temperatures were forecast later Monday but gusty winds that could spread the blaze also were expected, Lauderbale said.

Along with wildfire air quality concerns, Californians should also weigh the air pollution risks posed by fireworks, the San Joaquin Valley Air Pollution Control District said in a news release.

Firework use releases hazardous particles such as soot, ash and metals into the atmosphere, and air monitors in the San Joaquin Valley have accordingly detected unsafe spikes in PM concentrations every July 4 evening, the Control District said.

The hot, windy conditions fueling the fire and others across the West were expected to persist through the end of July in Utah and parts of California, Idaho, Nevada, Oregon and Washington, U.S. fire officials said. The Southwest, which has been struggling with drought, should get enough rain in early July to reduce the risk of major blazes in Arizona, Colorado and New Mexico, the National Interagency Fire Center said.

In Colorado, more than 2,500 homes were under evacuation orders as firefighters battled more than a half-dozen wildfires. Most of the evacuations were tied to a 78-square-mile wildfire in southern Colorado that led to the arrest of a Danish man on arson charges.

Jesper Joergensen, 52, initially said he had started a fire to burn trash but then said he had been grilling in a permanent fire pit the day before the blaze began, according to a court document.

Joergensen, who reported the wildfire, said it started about 20 feet away from the fire pit Wednesday and he tried to put it out, an arrest affidavit said. It says about 25 buildings had been destroyed as of Thursday, when he was arrested. Authorities have not released other details on damage.

Joergensen has been living in the country illegally, the document says, and federal immigration officials have requested that they be allowed to take custody of him if he's released from jail.

## **As County Fire rages, what's the risk from breathing? Here's air quality info for the region**

By Jordan Cutler-Tietjen

Sacramento Bee, Tuesday, July 3, 2018

Smoke obscured the skies and ash dusted windshields in the Bay Area and Sacramento regions the past two mornings as the 60,000-acre County Fire continued to grow, miles away in Yolo County.

The fire and its byproducts were jeopardizing air quality and public to varying extents depending on location as of Monday morning.

The Yolo-Solano Air Quality Management District issued a Smoke Alert extending from Monday through Saturday, including the Fourth of July. Winds are expected to carry the most smoke into Esparto, Vacaville, Winters, Davis and Woodland, but all parts of Yolo County and northeast Solano County are expected to be affected.

As the week progresses, winds are predicted to "continue to transport smoke from the fire into the region," according to the district.

Ozone levels rose to unsafe levels by Monday afternoon in Sacramento County for at-risk groups such as young children, pregnant women, older people and individuals with respiratory conditions like asthma or heart disease.

The smoke is certainly worsening ozone production, but these levels are not unusual for this time of year, said Thomas Hall, spokesperson for the Sacramento Metropolitan Air Quality District.

Air quality in the Sacramento area was worst in Elk Grove and Vacaville, according to a 2:30 p.m. tweet by the Sacramento Metropolitan Air Quality District.

Although smoke may have been visible in Sacramento County by Monday morning, it had not descended to breathing altitude and was not adversely affecting air quality in the county, Hall said.

When it comes to smoke detection, "we really encourage folks to use their nose," Hall said. Residents who smell smoke are advised to head indoors.

In general, residents should avoid outdoor physical activity, close windows and doors that might let in smoke, turn off all wood-burning appliances and turn on their air conditioners, according to the Yolo-Solano Air Quality Management District.

If outside, residents should consider donning face masks with high efficiency particulate air (HEPA) filters or an N-95 mask, as regular dust masks don't filter out wildfire air pollution safely, the American Lung Association advises. These warnings are especially pertinent for the aforementioned at-risk groups.

All air quality monitoring stations in the Bay Area were reporting good or moderate AQI levels of particulate matter (PM) and ozone as of 8 a.m. Monday, which means that even groups predisposed to sensitivity should be safe to spend time outside, according to the Bay Area Air Quality Management District. Hall said he expects the Delta breeze to send smoke eastward and away from the Bay Area as the week progresses.

Along with wildfire air quality concerns, Californians should also weigh the air pollution risks posed by fireworks, the San Joaquin Valley Air Pollution Control District said in a news release.

Fireworks release hazardous particles such as soot, ash and metals into the atmosphere, and air monitors in the San Joaquin Valley have accordingly detected unsafe spikes in PM concentrations every July 4 evening, the district said.

As such, the city of Winters in Yolo County had canceled its July 3 fireworks show as of Monday morning, according to the city's website. The city does not appear to have scheduled a fireworks show on July 4.

In general, smoke may look entirely gaseous, but it contains miniscule chunks of PM that pose health risks ranging from headaches to heart problems.

Combined with cloudless weather and hot temperatures, smoke concentration increases the production of ozone. The molecule is an essential component of the Earth's upper atmosphere, but it's unhealthy and synonymous with smog when present in altitudes closer to sea level.