

Valley air pollution: Made in China?

By Steven Mayer, staff writer

Bakersfield Californian, Sun. Sept. 1, 2013

It was no pleasure flight. The plane soaring over Bakersfield in one of the most polluted air basins in the nation was on a scientific mission.

The men on board were searching for smog -- and it wasn't hard to find.

Attached to the wings of the single-engine Mooney TLS were plastic inlets that sucked air through scientific equipment loaded into the rear of the plane. The equipment, which can detect levels of ozone, or smog, in parts per billion, was wired to a computer resting on the lap of the plane's passenger. The laptop showed a fever chart -- a graphical representation of ozone levels -- in real time.

"Yesterday we got what we came for over Arvin," said Stephen Conley, an atmospheric scientist from the University of California, Davis, who was at the controls of the plane. "We detected 112 parts per billion at 1,000 feet above the ground."

Had that extreme level of ozone dipped to the surface and been detected by an official ground station near Arvin, it might well have triggered an exceedance, or violation, of the federal one-hour ozone standard of 75 parts per billion by volume.

Residents on this end of the valley have known for years that we live in an ozone nightmare, a hazy, lung-burning Hades that regularly lands us at the top of the nation's "worst air" list.

But what researchers like Conley are finding is that a significant portion of the ozone found in the southern San Joaquin Valley is not even produced in California.

China, the largest exporter of goods in the world, isn't just sending us TVs, furniture and other consumer products. It's also exporting smog.

THE \$29 MILLION-DOLLAR QUESTION

Scientists have long known that smog flows down the valley from northern sources, including the San Francisco Bay Area. Scientists have estimated about 9 percent of our ozone comes from up north.

But Conley and many other scientists are amassing a considerable body of evidence that shows alarming levels of ozone are being transported at relatively high altitudes across the Pacific Ocean from China and other Asian countries and mixing with the air we breathe in Bakersfield, Arvin, Lamont, Delano and Fresno.

As China's use of fossil fuels has grown dramatically in recent years, so has its production of precursors, chemicals that when cooked by the hot summer sun become ozone, a corrosive gas linked to heart and lung illness and even premature death.

"There is strong evidence that pollution from Asia, mainly from China, is crossing the Pacific," said Seyed Sadredin, executive director of the eight-county San Joaquin Valley Air Pollution Control District. "It is transported at high altitude until it gets to the valley where it takes a dive."

And humans are not the only species affected by intercontinental air pollution. Several studies, including one published last year in "Biogeosciences," indicate that agricultural crop yields can be reduced by trans-boundary ozone in the Northern Hemisphere.

Sadredin cautions that more studies are necessary to duplicate previous findings and to more precisely determine the paths of imported ozone and the meteorological and topographical processes that deliver it to our doorstep.

But one thing is clear, he said. This research raises serious questions of fairness regarding the annual assessment of a \$29 million pollution penalty paid primarily by valley motorists in their vehicle registration fees -- a cost borne each year when the district exceeds the federal standards.

If the valley air district can prove to the U.S. Environmental Protection Agency that exceedances in ozone standards are directly attributable to TBOs, or trans-boundary ozone, the district should be able to make a strong argument that it's unfair to level the annual multimillion-dollar smog penalty, Sadredin said.

"It's important to understand that this doesn't let us off the hook," he said. "We need to continue to reduce our emissions."

However, the valley already has some of the toughest air regulations in the country, he said, and the number of exceedances has been trending downward for years, thanks to cleaner-running cars, stiff regulations on valley businesses and changes in behavior by residents. There's no doubt that the valley's air is cleaner overall than it's been in decades.

Will valley air officials eventually be able to prove to the EPA that, were it not for dirty air transported from China and other off-shore sources, the valley would not have exceeded the one-hour ozone standard at a particular time on a particular day?

That's the \$29 million question.

TRANS-BOUNDARY OZONE

Last June, the valley air district board approved a \$99,747 contract with the University of California, Davis for Conley's 18-month study, which uses aircraft monitoring to help determine whether long-distance flows of ozone from Asia are mixing with valley air.

Several other important studies examining this China Syndrome have already been published in scientific journals.

A research study headed by Owen Cooper, an atmospheric scientist at the University of Colorado, used a network of four balloon-launch sites along the California coast, and more sites inland, to gather ozone readings at various altitudes. Published in 2011 by the Journal of Geophysical research, the study used ozonesondes, balloon-borne instruments that measure concentrations of ozone at different altitudes and broadcast the data back to researchers.

One might expect air blowing in from the Pacific to be fairly clean -- even pristine. However, in the free troposphere above 3 kilometers, or just under 2 miles in altitude, ozone precursors, or smog-producing chemicals, were found by Cooper's team. The main sources? China and international shipping.

But how can scientists determine the sources of smog or smog-producing substances that have travelled thousands of miles across oceans?

David Lighthall, the health and science adviser for the valley air district who coordinates TBO research, said tiny particles of soot carried by the wind within plumes of ozone contain elemental signatures that can pinpoint their place of origin.

"They can tell the difference between coal from India and coal from China," he said.

Cooper's study was limited by funding and time. Much more work needs to be done, he said, to get a handle on "what's coming in month by month, year after year."

There's no question that ozone and ozone-producing chemicals are being transported to California and the western United States, Cooper said. But what is the impact on already-polluted air basins like the southern San Joaquin Valley?

Studies suggest the impact can be huge.

"For average daytime conditions, we found no enhancements of lower tropospheric ozone in the northern Central Valley, but enhancements of 12-23 percent were found in the southern Central Valley," Cooper's study concluded.

In layman's terms, nearly one-quarter of Kern County's ozone problem may be attributable at times to off-shore sources, making it completely beyond local control. Add another 8 to 9 percent

coming from upwind sources in California and it's hard not to conclude that south valley residents have limited influence over the very air we breathe.

GUARANTEED TO FAIL?

In 1998, the valley portion of Kern County exceeded the federal one-hour ozone standard 29 times. From 2011 to the present, there have been zero exceedances in Kern. Valleywide, there were only two last year and three in 2011. Statistically, the valley appears to be headed in the right direction when it comes to taking responsibility for the smog we produce.

If the district can go three years without an ozone violation -- and so far this year, there haven't been any -- the EPA will lift the penalty. The extra \$12 added to valley residents' vehicle registration fees generate about two-thirds of the \$29 million penalty. The remaining one-third comes from large industrial businesses.

The money funds grants and incentives that help decrease emissions.

As we learn more about the transport of ozone from Asia, ocean-going ships and even Europe, it seems possible that the five exceedances over the past 32 months -- all which occurred in Fresno County -- might not have happened were it not for ozone transported from outside the valley.

Kerry Drake, a spokesman for the San Francisco office of the U.S. Environmental Protection Agency, said questions of fairness regarding the annual penalty are not out of line, especially in light of the clear progress the valley has made in reducing emissions.

Wording in the Clean Air Act, which governs air standards in the valley, may provide a rare exemption. Under Section 179B, if a region misses an attainment deadline but can show that the standard would have been attained had it not been for the effects of international emissions, then that area would not be subject to the federal penalties -- including financial penalties -- normally associated with such a violation.

Hypothetically, if the air district gathered the best peer-reviewed studies and put together a science-based proposal that could be presented to the EPA and the California Air Resources Board, it is conceivable, Drake acknowledged, that a convincing argument could be made.

But it wouldn't be easy.

"Let's say you have an exceedance on, say, Aug. 7, in Fresno," he said. "Can you prove, on that day, that you wouldn't have exceeded the ozone standard had it not been for ozone transported from Asia?"

A MOVING TARGET?

To further complicate matters, the one-hour ozone standard of 75 ppb has been revoked in favor of a more health-protective and difficult-to-attain eight-hour ozone standard. However, litigation has reinstated many requirements of the one-hour standard -- and it still is used to determine exceedances related to the \$29 million penalty.

There's a chance the standard could be lowered from 75 to 65 parts per billion, or even 60, making attainment in the valley a moving target.

David Parrish, one of the leaders in ozone research in the chemical sciences division of the National Oceanic and Atmospheric Administration in Boulder, Colo., argues that we mustn't pin all of our ozone problems on China. Without local production of ozone, very seldom if ever would impacted air basins like Los Angeles and the San Joaquin Valley be exceeding standards.

And our imported ozone is certainly not all coming from China, he said. Other Asian countries, Europe, international shipping and natural ozone sources all contribute, he said. In fact, ozone can circle the globe, so smog and its precursors created in the United States can similarly affect other nations.

However, Parrish said, the impact of imported ozone "is diluted as you move from west to east over North America."

Lighthall, the science adviser at the air district, said much of the research is still based on statistical inference and modeling. So more needs to be done, he said, especially if air officials are someday going to argue for an exemption from federal regulators.

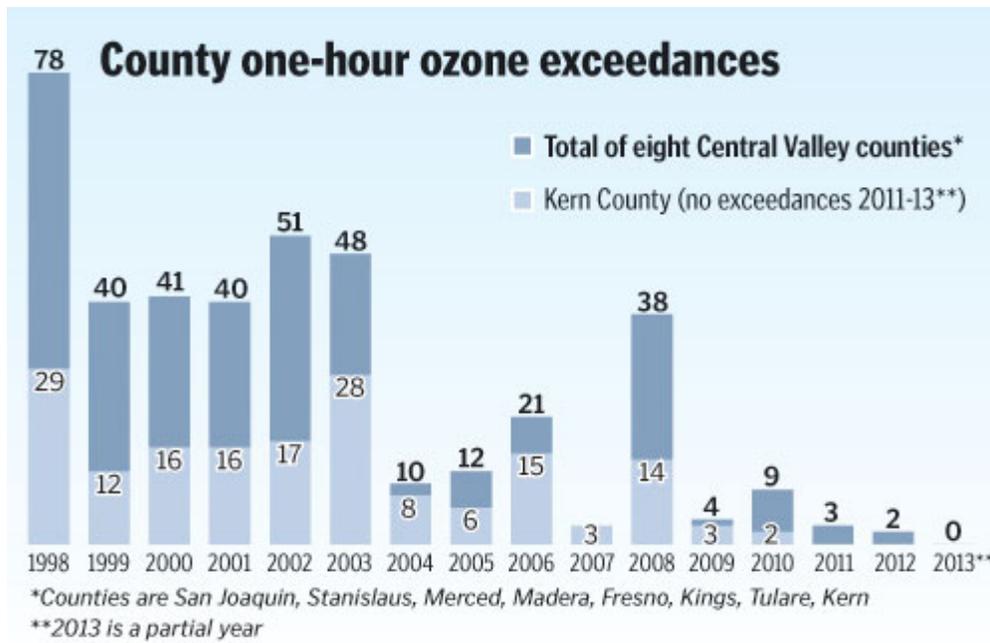
"You need to have a good weight of evidence," he said. "A scientific case."

Related Info

WHAT THE AIR ACT SAYS

Actual wording from the federal Clean Air Act regarding a possible exemption for offshore ozone:

"Notwithstanding any other provision of law, any State that establishes to the satisfaction of the Administrator that, with respect to an ozone nonattainment area in such State, such State would have attained the national ambient air quality standard for ozone by the applicable attainment date, but for emissions emanating from outside of the United States, shall not be subject to the provisions of section 7511 (a)(2) or (5) of this title or section 7511d of this title."



Source: San Joaquin Valley Air Pollution Control District STEVEN MAYER and KENT KUEHL / THE CALIFORNIAN

Valley truckers fret over clean exhaust cost

By Alex Breitler

Stockton Record, Tues., Sept. 3, 2013

Thousands of San Joaquin Valley truck drivers are facing a Jan. 1 deadline to complete expensive upgrades to their rigs, prompting air-quality officials to free up millions of dollars in assistance.

The impending deadline is part of a controversial state rule to reduce diesel pollution from large trucks. The rule was delayed in 2010 because of the crumbling economy, but now it is once more lurching forward.

The concern now, in particular, is for drivers who own just a single truck, or perhaps two or three trucks. They lack the financial backing of a large company but must nevertheless spend \$15,000 to \$20,000 to install new filters in their trucks.

In some cases, the cost to comply may be more than the value of the truck, officials with the San Joaquin Valley Air Pollution Control District said in August. The \$7 million the district is

making available would help owners not merely to retrofit but to outright replace their trucks, which the state rule requires anyway by 2023.

In a staff report, district officials said they were concerned that without additional financial assistance for truckers, the rate of compliance after Jan. 1 would be low. This could have a devastating impact on truckers and their customers, they said, while failing to clean up the trucks themselves, which are a primary cause of the Valley's pollution problem.

The district's assistance is welcome, said Michael Shaw, a spokesman for the California Trucking Association. There are about 20,000 small truck fleets in the Valley, perhaps 15,000 of which comprise just one truck.

"This deadline is really coming home to roost," Shaw said. "It will have a significant impact on the trucking industry, and we do anticipate there will be a fair number of owners and operators who are going to be out of business come Jan. 1."

Those that stay in business will surely pass on costs to the businesses they serve, Shaw said. That, in turn, will increase costs to the public for everyday items shipped by truck.

Karen Caesar, a spokeswoman for the California Air Resources Board, said the state is doing everything it can to communicate the upcoming deadline to truck owners. She also cited the need of cleaning the air.

A 2008 study by California State University, Fullerton, found that meeting federal clean-air standards would prevent 110 premature deaths each year in San Joaquin County.

Learn more

Details about how to apply for the air district's \$7 million in assistance for truck owners are available at valleyair.org.

Valley air district offers 2 diesel truck-grant programs

By Diana Aguilera

Fresno Bee and Merced Sun-Star, Sat., Aug. 31, 2013

The San Joaquin Valley Air Pollution Control District is seeking Valley truckers -- especially single owner/operators -- to apply for grants to help meet a state emission-reduction deadline and is offering free regional workshops to provide application assistance.

The district has made an additional \$7 million available and broadened its eligibility criteria through its Truck Voucher Program, specifically for the Valley's 15,000 single owner/operators. Recipients may be eligible for up to 35%, or \$50,000, of a vehicle's purchase price. Those who apply for the separate Proposition 1B Program, targeted at fleet operators, may be eligible for up to \$50,000 in incentive funding.

For more information on the two programs, visit www.valleyair.org/trucks or call (855) 99GRANT (4726).

Progress seen at Sierra fire, but smoke spreads

By Gosia Wozniacka, Associated Press

In the S.F. Chronicle, San Diego Union-Tribune and other papers, Sat., Aug. 31, 2013

FRESNO, Calif. (AP) — Nearly a third of the huge forest fire burning in and around Yosemite National Park was contained Friday and some small communities in the mountainous area were no longer under evacuation advisories, but smoke descending down into San Joaquin Valley cities was becoming a problem.

In a sign of progress, a few dozen firefighters were released and more could be sent home in coming days, said Daniel Berlant, spokesman for the California Department of Forestry and Fire Protection. More than 4,800 firefighters remained on the scene late Friday.

"We continue to gain the upper hand, but there's still a lot of work to be done," Berlant said.

The 2-week-old blaze burning in the Sierra Nevada northeast of Fresno has scorched 333 square miles of brush, oaks and pine, making it the largest U.S. wildfire to date this year and the fifth-largest wildfire in modern California records. Containment was estimated at 35 percent.

Winds had been blowing dense smoke plumes northeast into the Lake Tahoe area and Nevada but a shift Friday brought them west down to the San Joaquin Valley floor.

Regional air pollution control authorities issued a health caution for San Joaquin, Stanislaus, Merced, Madera, Fresno and Tulare counties. Residents who see or smell smoke were urged to stay inside, especially people with heart or lung problems, older adults and children.

Evacuation advisories were lifted Thursday in Tuolumne City, Soulsbyville and Willow Springs but remained in place for other communities, and evacuations were still mandatory along the fire's southeastern edge.

About 75 square miles of the fire are inside Yosemite but at some distance from the national park's major attractions, including glacially carved Yosemite Valley's granite monoliths and towering waterfalls.

Park officials expect about 3,000 cars a day to pass through gates during the long Labor Day holiday weekend instead of the nearly 5,000 that might typically show. The fire has caused some people to cancel reservations in the park but those vacancies have been quickly filled, officials said.

"Valley campgrounds are still full and skies in Yosemite Valley are crystal clear," said park spokeswoman Kari Cobb. A 4-mile stretch of State Route 120, one of three western entrances into Yosemite, remained closed, hurting tourism-dependent businesses in communities along the route.

Costs reached \$47 million, including firefighters from 41 states and the District of Columbia and significant aviation resources including helicopters, a DC-10 jumbo jet and military aircraft equipped with the Modular Airborne Firefighting System. Aircraft have dropped 1.7 million gallons of retardant and 1.4 million gallons of water.

The fire started Aug. 17 and its cause remains under investigation. It is expected to keep burning long after it is fully contained, and recovery will be extensive. Some 7,000 damaged trees next to power lines will need to be removed by utility crews and 800 guardrail posts will need to be replaced on Route 120, a fire fact sheet said.

Sierra's Rim fire becomes the biggest to burn in U.S. this year

By Patty Guerra

Modesto Bee, Sat., Aug. 31, 2013

UPDATE: As of Saturday morning, the Rim fire had grown to 219,277 acres, and was 35 percent contained. The blaze grew 6,000 acres overnight. CalFire spokesman Daniel Brlant said the fire remains the fifth-largest in California history but likely will move up to the No. 4 spot by this evening.

The Rim fire moved into first place among fires nationally this year, authorities cautioned that a hot holiday weekend could complicate firefighting efforts, and officials issued a bad-air alert.

The California Department of Forestry and Fire Protection said the fire reached 213,414 acres as of Friday evening, two weeks after its Aug. 17 start. It's the largest fire in the United States so far this year, surpassing the Lime Hills Fire in Alaska, which consumed 201,809 acres. Historically, the Rim fire ranks fifth on the list of California's largest fires.

Nearly 5,000 firefighters are battling the blaze in Tuolumne and Mariposa counties, making good progress in slowing its growth, said Daniel Berlant, spokesman for Cal Fire, in a news release. But with temperatures expected to rocket toward the triple digits and campers heading out for the traditional last weekend of summer, authorities remain worried.

"Cal Fire is urging Californians to be extra careful with their outdoor plans this holiday weekend, as fire activity and fire danger remain high statewide," Berlant said. "Anyone going outdoors or camping this weekend should take every precaution to avoid sparking a wildfire."

Friday, smoky conditions from the Rim fire prompted a cautionary statement from the San Joaquin Valley Air Pollution Control District for San Joaquin, Stanislaus, Merced, Madera, Fresno and Tulare counties. The alert urges caution for those who suffer from lung or heart problems, as well as children and older adults.

Authorities listed containment of the fire at 35 percent and stayed with their estimate of full containment on Sept. 20.

Tuolumne City, Soulsbyville and Willow Springs residents were allowed to go home Thursday when authorities lifted the evacuation advisory. But residents from Ponderosa Hills and areas east, along the south side of Highway 108 up to Pinecrest, as well as north of Bull Creek Road, Bondurant Mine Road, Texas Hill Road and Wampum Hill, remain under an evacuation advisory. Those living north of Old Yosemite Road are under a mandatory evacuation.

An evacuation center at the Mother Lode Fairgrounds served as many as 180 people a night. That dropped to about 43 briefly and now stands at about 60.

The U.S. Forest Service also compiled a fact sheet about the fire:

- States that have sent firefighters or other help: 41 and the District of Columbia
- Total aviation hours: 14,400
- Water dropped: 1.4 million gallons
- Fire retardant dropped: 1.7 million gallons
- Cost: \$47 million
- Percentage of the fire burning within the Stanislaus National Forest: 74.6
- Percentage of the fire burning in Yosemite National Park: 24

Rim fire smoke reaches Valley; some school activities curtailed

By Carmen George

Fresno Bee, Fri., Aug. 30, 2013

The Rim fire became personal for Fresnans on Friday when smoke from the massive blaze blew into town.

But while much of Fresno stewed in hazy conditions, the western and eastern sides of the Valley were not as affected, said Brian Ochs, a National Weather Service meteorologist.

The Rim fire has burned more than 200,000 acres near Yosemite National Park. Most of the smoke from that blaze -- one of the biggest in state history -- has been blowing northward away from the central San Joaquin Valley since it began Aug. 17.

But Ochs said downsloping breezes off the Sierra on Thursday night and Friday morning pushed the smoke toward Fresno and areas south.

He described it as a narrow band through the middle of the Valley, with the west and east sides of the region less affected.

At one point Friday afternoon, visibility at Fresno Yosemite International Airport was reduced to four miles. By comparison, Lemoore had 10 miles of visibility.

"There probably will be some smoke that drifts down (into the Valley) in the late night and early morning," Ochs said. "It's kind of hard to say when and how long that will last exactly. Basically, at least through the Labor Day weekend and likely into next week."

Ochs noted dense smoke advisories remain in place at Lake Tahoe and Reno, which have been hit hard by air pollution caused by the Rim fire.

For the latest air quality reports, check the San Joaquin Valley Air Pollution Control District's Real-time Air Advisory Network page.

Fresno Fire Department was called out to about 20 calls of smoke from residents worried that there was a fire burning in their neighborhoods. Capt. Brad Driscoll said those calls went to the 911 dispatch. Many of the calls were early Friday afternoon, he said.

"If it's a fire, we want to tell people not to hesitate to call," he said.

American Ambulance, which dispatches for several fire departments in Fresno County and ambulance companies in Fresno, Madera and Kings counties, said there was a surge in "smoke check" calls and an uptick in respiratory ailments.

On average, the ambulance companies get 45 to 50 calls a day for breathing problems. By 3 p.m., American Ambulance reported 34 calls for breathing problems.

"At this point, I wouldn't say a significant jump, but we've seen a spike," said Jaime Martin, director of communications for American Ambulance.

The San Joaquin Valley Air Pollution Control District advised that outdoor activities requiring considerable exertion be changed or moved inside.

The air district fielded calls from a half dozen schools in Fresno, said district spokeswoman Heather Heinks. "Most were needing some professional confirmation of what they thought they should do."

At 3 p.m. Friday, air in southeast Fresno was classified as unhealthy for all groups by the air district. Air monitors in Clovis, central and north Fresno classified air as unhealthy for sensitive groups.

Regardless of the forecast, Heinks said, if the air appears unhealthy, it probably is. Air monitors don't pick up conditions in all parts of the city, and air quality could be worse than what is being reported, she said.

Smoke from fires produces fine-particulate matter (PM2.5), which can cause serious health problems, including lung disease, asthma attacks and increased risk of heart attacks and stroke.

Poor air quality caused Fresno Unified School District to cancel elementary school and middle school practices, games and outdoor activities. Indoor practices were unaffected.

High school athletics were not canceled. But Fresno Unified officials were monitoring air quality.

All Central Unified outdoor events Friday were canceled. But Central High's football games at Hanford went on, Hanford Joint Union High School District officials said.

Clovis Unified officials were monitoring air quality readings to make sure it was safe to play. The district canceled all elementary school practices as of 3:30 p.m. Friday after further consultations with the air district, spokeswoman Kelly Avants said. Freshman football games were delayed until 5 p.m.

School officials in Madera and Visalia said conditions were good there and the games went on as scheduled.

Smoke on way to S.J. Valley

Stockton Record, Sat., Aug. 31, 2013

STOCKTON - Smoke from the Rim Fire was expected to begin descending into the San Joaquin Valley, prompting air quality officials Friday to issue a health caution through the holiday weekend.

The San Joaquin Valley Air Pollution Control District says the general rule of thumb is that if you can see and smell smoke, your health could be affected by it.

Older adults and children should avoid prolonged exposure or heavy exertion, depending on local conditions.

The health caution, which includes San Joaquin County, is the first issued by the district in connection with the massive wildfire in Tuolumne County.

[Excerpt from Bakersfield Californian Blog, Mon., Sept 2, 2013:](#)

Bakersfield Observed: A blog about life, media, politics and people

By Richard Beene

Idling cars

Jon Crawford wrote to add his voice to those concerned how idling cars contribute to pollution: "I am in agreement with Gerhard Schmidt's comments about idling cars at the Costco gas pumps. What he didn't add was that cars use somewhere between 1 and 2 gallons of gasoline while idling. That means that at the low end, they are burning 6 cents of gas for every minute they wait in line at Costco (or at a long stoplight), making any wait uneconomic, unless one shuts off their engine. A few years ago, I did some rough calculations along this same line and concluded that idling at our fast food places' drive-thru lines result in burning 20 gallons of gas each hour per place. That's a lot of wasted gasoline in Bakersfield. There's more. If these customers walked from the parking lot to the inside counter, they would collectively burn some 150 pounds of fat every 12 hours these places are open, which may be one of the bigger causes of our fair city's high rate of obesity."

Pollution

And speaking of air pollution, did you read the story in the Sunday Californian by Steven Mayer? It is a fascinating read that says researchers now believe that China may be contributing to the valley's bad air. If that is correct, and high levels of ozone are being transported across the Pacific Ocean from China, then the valley could be being unfairly punished. Said Mayer: "This research raises serious questions regarding the annual assessment of a \$29 million pollution penalty paid primarily by valley motorists in their vehicle registration fees -- a cost borne each year when the district exceeds the federal standards." Stay tuned for more on this.

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