



DESERT BREEZE

VOLUME 1, ISSUE 1

MARCH 2013

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District School Bus Replacement Program

Diesel engines emit a complex mixture of organic and inorganic compounds that exist in gaseous, liquid, and solid phases including particulate matter (PM), oxides of nitrogen (NOx), carbon monoxide (CO), carbon dioxide (CO₂), sulfur dioxide (SO₂), and hydrocarbons.

Exhaust from uncontrolled high-emitting diesel engines is a health concern because it contains over 40 substances that have been listed as toxic air contaminants (TACs) by the State of California and as hazardous air pollutants (HAPs) by United States Environmental Protection Agency. Fifteen of these substances are listed by the International Agency for Research on Cancer (IARC) as carcinogenic to humans. Furthermore, EPA classified diesel exhaust as

likely to be carcinogenic to humans by inhalation at environmental exposures.

In an effort to reduce school children's direct exposure to both cancer-causing and smog-forming pollution, the District awards grant funds collected through AB 923 to assist local schools in replacing older high-emitting school buses with new lower-emission school buses. AB 923 funds are also used to equip qualifying middle-aged school buses with retrofit devices that significantly reduce



Sierra Sands Unified School District was recently awarded District grant funds to replace a 1985 Thomas school bus with this new low-emission Navistar MaxxFlex DT school bus.

diesel exhaust emissions. Annual revenue generated through the District's AB 923 program has been sufficient to replace approximately two older school buses per year. To date, the District has used AB 923 funds to replaced eight school buses and retrofit four.

Particulate Matter

What is Particulate Matter

Particulate Matter (PM) is a complex mixture of varying combinations of dry solid fragments, solid cores with liquid coatings and small droplets of liquid floating in the air. These

tiny particles vary in shape, size, chemical composition, and can be made up of many different materials such as metals, smoke, soot, dust, salt, acids, soil, and dust. PM is generally produced from motor vehicle fuel combustion, wood burning stoves, fireplaces,

wildfires, hazardous reduction burning, construction dust, landfills, agriculture, wind-blown dust from open lands, and industrial sources.

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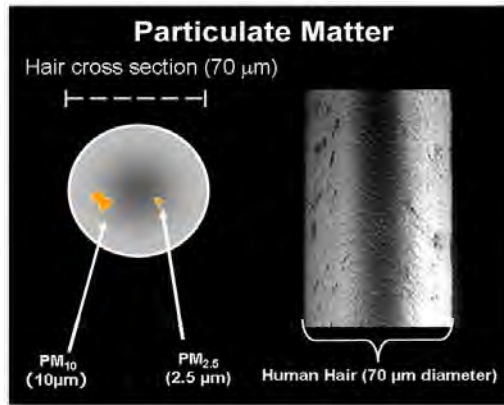
Particulate Matter (continued)

Health Effects

PM small enough to be inhaled into the deepest parts of the lungs are of greatest concern to public health. These consist of particles with an aerodynamic diameter of less than 10 microns (PM₁₀), about 1/7th the thickness of a human hair. PM₁₀ includes the subgroup of finer particles with an aerodynamic diameter of 2.5 microns (PM_{2.5}) and smaller. When inhaled these particles evade the respiratory system's natural defenses and lodge within the lungs. Exposure to PM₁₀ aggravates a number of respiratory illnesses such as asthma and bronchitis, reduce the body's ability to fight infections, and can worsen the effects of heart and lung diseases.

What you can do To reduce health threats associated with PM₁₀, individuals can practice the following:

- Reduce travel on days with poor air quality;
- Avoid outdoor physical activities on days with poor air quality;
- Avoid using your wood stove or fireplace on days with poor air quality;
- Avoid using leaf blowers and other dust producing equipment;
- Drive slowly on unpaved roads and other dirt surfaces; and
- Get involved with air quality improvement programs in your community.



DISTRICT RULE 401—VISIBLE EMISSIONS

The Eastern Kern Air Pollution Control District is featuring our Rule 401, Visible Emissions, for this newsletter. Visible emissions are a plume of dust or exhaust created by manmade or natural sources. A plume is a stream of air containing a air contaminant(s). The pictures below are examples of a combustion source plume and a fugitive dust plume that are in violation of Rule 401:



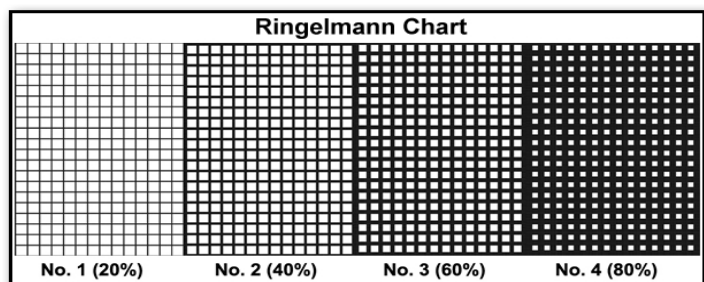
Rule 401 states the following:

A person shall not discharge into the atmosphere, from any single source of emission, whatsoever, any air contaminant for a period or periods aggregating more than 3 minutes in any one hour which is:

- As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or
- Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Subsection A.

Visible emissions can cause respiratory and other health problems from the pollutants emitted in the plume; in addition to visibility problems that can lead to serious accidents.

There are two ways to measure visible emissions: Ringelmann scale for black smoke and opacity for white smoke. Visible emissions are a means of determining how much light is being dispersed through a plume, the less light going through the plume; the higher the number on either the opacity percentage scale or the Ringelmann scale. The lowest number (No. 0 or 0% opacity) is completely clear and the highest number (No. 5 or 100% opacity) is completely black smoke (or corresponding white smoke). From Ringelmann No. 1 through No. 4 (20% opacity to 80% opacity) is shown below. Pictures to the left are examples of Ringelmann No. 5 (stack) and 80% opacity (car). — *Continued on Page 3*



MEET THE BOARD

The Governing Board of Directors for the Air District consists of three city mayors/council members and two county supervisors (County Districts 1 and 2). They meet 6 times a year and the meeting site moves from location to location in our air district. A schedule of dates, times and locations are on our website www.kernair.org.

Our Board of Directors:



Mick Gleason, Kern County Supervisor District 1



Zack Scrivner, Kern County Supervisor, District 2 (Vice Chairman)



Ed Grimes, Tehachapi Councilman (Chairman)



Chip Holloway, Ridgecrest Mayor Pro tem



Pat Bohannon, California City Mayor

DISTRICT RULE 401—VISIBLE EMISSIONS (Continued)

Reading visible emissions is not subjective, requires training, and regular bi-yearly certification from the California Air Resources Board. For visible emissions, a good rule of thumb is: if your perception of the background or an object is obscured by a plume, then you are probably out of compliance with Rule 401.

Air District Retirements

David Jones, Air Pollution Control Officer (APCO), retired in December 2012 after serving in Stanislaus County, San Joaquin Valley, and Eastern Kern air pollution control districts for over 20 years.

Also, Jon McQuiston, one of our Directors of the Governing Board, retired in January 2013 after 15 years as Kern County Supervisor, District I, and 21 years in the Navy.

We would like to thank them for their many accomplishment and service to our air district and wish them well on their future endeavors.

Welcome Two New Leaders To Our Air District

Mick Gleason was elected and assumed office as Kern County Supervisor, District I, on January 7, 2013, and was appointed to set as a Director on the Air District's Governing Board. Mick is a former Navy pilot, with 53 combat missions in Operation Desert Storm. In 2004, he was selected Commander of the China Lake Naval Air Weapons Station. Mick and his staff are dedicated to improving the quality of life for the 1st District constituents and all residents of Kern County. They will do this by becoming fully engaged with our district communities and by creating representation that is responsive, affordable, and effective.

Glen Stephens was appointed APCO by the board at a special meeting on November 29, 2012. He's a graduate from San Jose State University with a BS Degree in Mechanical Engineering, and became a licensed Professional Engineer in 2004. He has worked for Kern County since 1990 as an Air Quality Engineer. Glen looks forward to using his knowledge and 22 years of air quality experience to improve the air quality for the people of Eastern Kern County.

EPA LOWERS STANDARDS

The United States Environmental Protection Agency (EPA) finalized an update to the annual National Ambient Air Quality Standard (NAAQS) for fine particulate (PM_{2.5}). The updated standard is 12 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), replacing the current standard of 15- $\mu\text{g}/\text{m}^3$.

Why? In accordance with the Clean Air Act (CCA), EPA is required to review its air quality standards and determine if a revision of a standard is necessary. The CCA requires EPA to ensure standards are "requisite to protect public health with an adequate margin of safety" and "requisite to protect public welfare." A federal court required EPA to issue a final standard by December 14, 2012, because EPA did not meet its five-year deadline for reviewing standards. The 15- $\mu\text{g}/\text{m}^3$ standard has been in place since 1997.

What this means to you. It is expected, health effects associated with long- and short-term exposure to PM_{2.5} will diminish because of the lowering of the fine particle standard. Compliance with the new standard is expected in the Eastern Kern Air Pollution Control District (District); however, the San Joaquin Valley Air Pollution Control District (Valley District) is not expected to attain the standard (Valley District has not attained the current standard). Therefore, it is expected, as a whole, Kern County will not meet the new PM_{2.5} standard. Calendar year 2014 will be the earliest EPA will decide who needs to improve air quality to meet the new PM_{2.5} standard. Overall, better air quality makes a better environment for the residents in our District.



Glen Stephens, APCO

This news publication is produced by the Eastern Kern Air Pollution Control District (EKAPCD). EKAPCD is the air pollution control agency for Eastern Kern County (serving the communities of Tehachapi, Lake Isabella, Ridgecrest, Boron, Rosamond, Mojave, and others)

EKAPCD does not endorse or warrant any products, services or companies mentioned in this publication. For news updates and other information, visit the EKAPCD Web site at www.kernair.org. The Desert Breeze is also available online at www.kernair.org/desertbreeze.htm

TO BURN OR NOT TO BURN? That is the Question!

First things first. People of the Air District will need a valid burn permit from the fire protection agency that has jurisdiction in the area of the proposed burn project within the Air District to burn on designated "Burn Days" and depending on the type of permit you have, agricultural, noxious weed, canal/ditch bank, or hazard reduction, comply with all conditions specified on such permit.

Now, let's get down to designating "Burn Days". The State determines if it's a burn day or not in our Air Basin, which covers the eastern portion of Kern County, most of San Bernardino County and the northeastern corner of LA County. Second, the Air District determines if there are any problem areas going on in our jurisdiction, (wild fires, i.e.) Third, your local fire department determines if there are any problems in their areas, (high winds, high fire risks, i.e.)

After you receive the Burn Permit, here are some of the guidelines to burn: You must notify the air district and your local fire department prior to burning. Burn only between 8:00 a.m. and 3:00 p.m. Water or fire control equipment must be available at the burn site. Burn piles must be small and shall not be left unattended. Material must be dried, prunings and small branch, 3 weeks. All the details such as phone numbers and reference information are on the burn permit.

No emissions resulting from burning activities shall cause injury, detriment, nuisance, annoyance to or endanger the comfort, repose, health or safety of any person or public.

No tires, toxics, residential/commercial waste, animal carcasses or scrap lumber shall be burned. See Rules 416 and 417 for complete info.



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