September 26, 2023

Board Members
San Luis Obispo County Air Pollution Control District
3433 Roberto Court
San Luis Obispo, California 93401

Dear Board Members

The San Luis Obispo Air Pollution Control District (District) has the important authority and responsibility to adopt and enforce rules and regulations for controlling local anthropogenic sources, including windblown dust, to achieve and maintain state and federal air quality standards in San Luis Obispo County. For about two decades, the District has been investigating elevated particulate levels downwind of the Oceano Dunes State Vehicular Recreation Area (Oceano Dunes) managed by the California Department of Parks and Recreation (State Parks).

Hundreds of scientific studies published over the past 50 years point to the harmful effects of coarse particulate (PM10) air pollution. Anyone exposed to PM10 can experience adverse health effects with young children, older adults, and those with respiratory diseases more likely to be affected. PM10 are particles small enough to pass through the throat and nose and enter the lungs. PM10 particles make up a large portion of windblown dust and high PM10 concentrations can be common downwind of loose or disturbed soils during wind events. Due to these impacts, both the U.S. Environmental Protection Agency and California have set air quality standards for PM10 that define the maximum amount of pollutant that can be present in outdoor air without harming human health, regardless of whether it is from natural or manmade sources. The State has two PM10 standards, a 24-hour standard of 50 $\mu g/m^3$ and an annual standard of 20 $\mu g/m^3$, both not to be exceeded. An area is considered nonattainment for PM10 if there is at least one violation of either State standard, based on three years of air monitoring data.

The District has conducted comprehensive research campaigns at Oceano Dunes to better understand the science of dust and emissivity of the area. Air monitoring studies in and around the Nipomo Mesa and Oceano areas confirmed that the high particulate levels impacting residents are associated with windblown dust from Oceano Dunes during high northwest wind conditions. Peak PM10 levels are recorded on high wind days when winds blow from Oceano Dunes, with concentrations declining with distance downwind of Oceano Dunes. Concentrations remain higher than in any other area of the County, including downwind of the dune system directly south of Oceano Dunes, and higher than other coastal regions in California. Additional studies by the Desert Research Institute have indicated the source of the elevated particulate matter to be windblown dust from the open sand areas of Oceano Dunes, and that emissions are increased by off-road vehicle activity.

The District uses California Air Resources Board (CARB) and the U.S. Environmental Protection Agency approved monitoring equipment and observes standards of practice of ambient air quality monitoring consistent with State and federal regulatory guidance. Adherence to standard sampling techniques is an important foundation for regulatory work and understanding the causes of elevated PM10 levels. Sampling methodologies to determine mass concentration and chemical components of air should follow standards of collection and analysis consistent with State and federal guidance. Deviation from standardized sampling techniques limits the usefulness of data for regulatory attainment purposes.

Modeling and collected measurements continue to demonstrate that Oceano Dunes derived windblown dust is the largest contributor to the PM10 exceedances measured at air monitoring sites downwind of Oceano Dunes. Vegetation-covered areas with little to no emissive potential predominate the space between Oceano Dunes and the air quality monitors, indicating that Oceano Dunes is the cause of elevated PM10 levels measured downwind. Other potential sources, including a chemical facility and agricultural fields in the vicinity, were not found to be significant contributors to PM10 during high wind events. Natural sources like sea salt can contribute to PM10 levels at coastal areas including Oceano Dunes.

Since State Parks has implemented dust control measures, air quality in and around the Oceano Dunes has improved significantly. CARB is supportive of the District and State Parks' continued collaborative efforts to reduce emissions in downwind areas and improve PM10 air quality for local residents. If you have any questions, please contact me at (916) 322-2739, or have your staff contact Michael Benjamin, D. Env., Chief, Air Quality Planning and Science Division, at (916) 201-8968.

Sincerely,

Edie Chang, Deputy Executive Officer

cc: Gary Willey, Air Pollution Control Officer, San Luis Obispo Air Pollution Control District
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Steven S. Cliff, Ph.D., Executive Officer, California Air Resources Board

Michael Benjamin, D. Env., Chief, Air Quality Planning and Science Division