Statement of
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Before the
Subcommittee on Energy and Air Quality
of the
Committee on Energy and Commerce
U.S. House of Representatives

January 12, 2004

Palm Desert, CA

Good morning, Chairman Barton and Members of the Committee. My name is Matt Haber. I have been the Acting Deputy Division Director in the Air Division at the United States Environmental Protection Agency Region 9, our Pacific Southwest office, since June 2003. Thank you for the opportunity to provide testimony relating to the air quality in the Coachella Valley as well as the potential air quality impacts associated with reduced water flows which impact the Salton Sea.

EPA has been actively engaged in air quality in the Coachella Valley since the State of California and the Agency determined that the area did not attain the health based air quality standard. EPA's role has been to work with the South Coast Air Management District and the Coachella Valley Association of Governments to protect residents from the health effects of air pollution. EPA has continued to work with the Coachella Valley to address the non-attainment status regarding two important air pollutants, ozone and particulate matter. As required by the Clean Air Act, EPA has approved the South Coast Air Management District's plans – known as

the State Implementation Plan – to achieve healthy levels of ozone and particulate matter. Air quality modeling shows that attainment is projected given control measures currently adopted and current levels of anthropogenic and natural emissions.

EPA's role in the Salton Sea and Lower Colorado River region has been to work with the Salton Sea Authority to oversee initial environmental studies. In 1997, Congress provided EPA $5 million to identify baseline conditions at the Sea. Based on those studies and in recognition of the complexity of the issues, in 1998 Congress appropriated an additional $8.5 million to EPA for scientific and engineering studies and pilot projects. The studies and projects were coordinated by the Salton Sea Authority. This work has provided a basis for the development of alternatives being considered to improve conditions at the Salton Sea. Throughout the process, EPA worked to ensure the use of appropriate scientific methods and approaches to protecting air quality in the valley.

EPA served on the Salton Sea Science Advisory Committee. This committee provided actions that could be taken to protect air quality in the valley. EPA also had a role in the environmental review of projects related to California's use of Colorado River Water which have an impact on water flow into the Salton Sea. Since the hearing here today is focused on "Air Quality Issues in the Coachella Valley", I will now spend some time discussing that subject.

1. Coachella Valley Air Quality

a. Particulate Matter in the Coachella Valley

The Coachella Valley is currently classified under the Federal Clean Air Act as being a "serious" non-attainment area for PM-10. Particulate matter, also known as PM, is the general term used for a course and fine particles found in the air. Particulate matter is associated with numerous adverse environmental and

health effects. Exposure to coarse particles is primarily associated with the aggravation of respiratory conditions such as asthma. For the last 3 years, the Coachella Valley's design values were above the national coarse particle standards as measured over the course of a day and over the course of a year. The Coachella Valley far exceeded the 24-hour standard of 150 micrograms per cubic meter, with the value calculated at 604 micrograms per cubic meter. During this time, the area exceeded the standard on 10 days.

In this area, the primary sources of PM-10 emissions are fugitive windblown dust (28%); construction and demolition (23%); reentrained dust from paved roads (22%); and reentrained dust from unpaved roads (12%). EPA is working with the South Coast Air Quality Management District "SCAQMD", Coachella Valley Association of Governments, and each of the local governments to address these sources of course particles. The area has adopted best available control measures to reduce these emissions in the area.

These control measures include state-of-the-art controls on paved roads: minimizing track-out (preventing soil from unpaved areas from entering upon paved areas); providing for PM-10 efficient street cleaning; mandating post-event street cleaning; and requiring curbs and gutters and chemical stabilization of unpaved road shoulders. In addition, best control measures are required for construction and demolition activities; unpaved roads (e.g., chemical treatment or speed reduction); agricultural activities (e.g., soil conservation plans); and controls on weed abatement. The control measures, as appropriate, increase in stringency during periods of high wind, in order to reduce the emissions. On

August 1, 2003, the SCAQMD amended the area's plan to control coarse particles by enhancing, existing control measures to reduce further PM-10 emissions. These enhancements are expected to bring the Coachella Valley into attainment with the national standards for PM-10 by, or before, the 2006 deadline. Under the plan, SCAQMD will conduct modeling to show that the area will attain on schedule.

b. National Ambient Air Quality Standards for Ground-Level Ozone

The area is classified as a "severe" non-attainment area for the 1-hour ozone standard. As you may know, ground-level ozone is a component of smog. Health problems attributed to ozone exposure include increased respiratory symptoms such as chest pain and cough. Exposures to ozone can make people more susceptible to respiratory infection, and aggravate preexisting respiratory diseases such as asthma. These effects generally occur while individuals are actively exercising, working, or playing outdoors. Children, active outdoors during the summer when ozone levels are at their highest, are most at risk of experiencing such effects.

EPA has approved a State Implementation Plan or "SIP" to bring the area into attainment with the 1-hour ozone standard by the Clean Air Act deadline of 2007. The standard for the 1-hour ozone standard is 0.12 ppm. For the last 3 years Coachella Valley's design value was 0.132 ppm. During this period, the area had 12 days above the standard at the design monitor in Palm Springs.

The primary sources of ozone precursor emissions in the area are: on-road motor vehicles (51%), off-road engines (25%), and solvent evaporation (13%).

Both the SCAQMD and California Air Resources Board "CARB" have adopted stringent measures to control ozone precursor emissions from on-road and off-road mobile sources, and from the key area and stationary sources within the Coachella Valley and upwind in the metropolitan Los Angeles area. These State and local controls are supplemented by EPA's national mobile source control program. SCAQMD and CARB recently strengthened the control measure commitments and adopted a new modeling demonstration that the Coachella Valley area will attain the 1-hour ozone standard by the 2007 deadline.

c. Coachella Valley and the Natural Events Policy

The Coachella Valley is susceptible to high wind events that generate windblown dust. During the years 1993-2001 the valley recorded 15 days exceeding the 24 hour average PM-10 standard, all of which they documented - and EPA approved - as high-wind natural events. Coachella Valley has a Natural Events Action Plan (NEAP) in their 2002 SIP.

2. Reduced Water Flows into the Salton Sea and Air Quality

Lower Sea levels will expose shoreline sediments that may become airborne. From our experience at Mono Lake and the Owens Lake basin, which I will talk about in a moment, we know that windblown dust from an exposed dry lake bed can cause high levels of PM-10 which is particulate matter smaller than 10 microns in size. Inhalable particulates in this size range, especially those associated with toxic materials or metals, can have serious health effects for people, especially children, the elderly, and those with respiratory illness. Our concern regarding airborne impacts from the Salton Sea is based on results from

initial studies and our experiences at Mono and Owens Lakes.

a. Mono Lake

Mono Lake is located in Mono County in eastern-central California. Since 1941, portions of the water from four of the major tributary streams have been exported before reaching the lake. From 1974 through 1989, an annual average of 83,000 acre-feet of water was exported from the Mono Basin to the city of Los Angeles.

Over the past 50 years, the water level of Mono Lake has dropped by approximately 45 feet, causing the exposure of approximately 20 square miles of new shoreline and an emissive area of 9 square miles. As the lake receded, 24-hour PM-10 readings increased from 404 ug/m3 in 1988 to 900 ug/m3 in 1993. Today, the State of California is refilling Mono Lake to its historical level, and although the lake has not yet reached that level, the PM-10 levels are declining (the highest 24-hour reading in 2001 was 450 ug/m3).

b. Owens Dry Lake Bed

Owens Lake is located in Inyo County in eastern-central California. In 1913, the Los Angeles Department of Water and Power (LADWP) completed an aqueduct system and began diverting the waters of the Owens River to the City of Los Angeles. By 1930, these diversions had drained Owens Lake almost completely dry.

The Owens dry lake bed is approximately 70 square miles. The emissive area is approximately 35 square miles. Strong winds over the dry, alkaline bed of Owens Lake have produced the highest measured concentrations of PM-10 ever

recorded in the US: levels as high as 23,000 ug/m3 were measured at the small community of Keeler. Annual PM-10 emissions from Owens Lake may exceed 400,000 tons, and dust transported from the Lake can result in violations of the 24-hour PM-10 NAAQS in the town of Ridgecrest 150 miles to the south. The dust from the lake bed contains carcinogenic compounds, including arsenic, nickel, and cadmium. The State Implementation Plan includes control measures such as shallow flooding, managed vegetation, and gravel cover to minimize dispersal of PM-10 and bring the area into attainment of the Federal health standard.

c. Salton Sea

The conditions at Mono Lake and the Owens Dry Lake are not the same as the Salton Sea in their climatic and soil characteristics. We cannot predict with confidence potential emissions from the newly exposed shoreline at the Sea. However, the potential of exposing 100 square miles of shoreline without any mitigation raises concerns about air quality impacts. Factors that potentially affect PM-10 air quality problems include how the lake crusts over after the water recedes; how rain, drying and other forces such as human activities might disturb the crust; and, how winds affect emission patterns on the dry lake bed. In addition, the soil from the lake bed may contain toxic materials. These could be naturally occurring, as in the case of Owens Lake, as well as potential contaminates from agricultural runoff. The congruence of these factors may cause higher emissions in some areas compared to other locations in the vicinity.

There is some indication that the existing north shore of the Salton Sea

might be presently emitting PM-10 into the air. To understand these potential impacts, the soil type and characteristics of the potential new shoreline should be assessed. Models to assess the level at which violations of the Federal PM-10 health standard may occur should also be employed. And finally, potential control measures should be evaluated.

The experiences at Owens and Mono Lakes should guide our decisions concerning the Salton Sea to help prevent violations of the PM-10 standard which could negatively impact public health. Thank you for extending an invitation to me to provide testimony here today. I will be happy to answer any questions that the Subcommittee members may have. Thank you.

Notes:

Air quality data are from EPA's Air data website: (http://www.epa.gov/air/data/index.html).

Emissions inventory data are from CARB's 2002 emissions inventory website:

(http://www.arb.ca.gov/emisinv/emsmain/emsmain.htm).

Website for both the PM-10 and Ozone SIP's (http://www.aqmd.gov/aqmp/AQMD03AQMP.htm)