Testimony Before the Subcommittee on Energy and Air Quality

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INTRODUCTION

Chairman Barton, Congresswoman Bono and other members of the Subcommittee on Energy and Air Quality, thank for the invitation to testify regarding air quality issues in our region. I am Tom Kirk, Executive Director of the Salton Sea Authority. The Salton Sea Authority is a regional government comprised of the Imperial Irrigation District, Coachella Valley Water District, Imperial County, Riverside County, and, pending, the Torres Martinez Desert Cahuilla Tribe.

There may be nothing more valuable or more integral to the long term sustainability of the Coachella and Imperial Valley economy than the quality of our air. There are legitimate concerns that a receding Salton Sea could jeopardize our attainment of clean air standards and threaten public health and our quality of life based economy. While many lakes have historically filled and then receded in the Salton Basin, the Salton Sea, shown at the center of Figure 1, has existed for approximately 100 years. Its size and depth has fluctuated during that time, however during the past couple of decades its surface elevation has been stable at about -228 feet msl.

Figure 1:
Salton Sea Location

A RECEDING SEA

The Salton Sea's primary source of inflow is agricultural return water. This is also the source, via exchange, of most of the water for the water transfers from the Imperial Valley to San Diego and the Coachella Valley under the quantification settlement agreement (QSA). Under the transfer agreement, the Salton Sea's baseline inflow conditions would be maintained for 15 years. After 15 years, the full effects of the transfer would cause substantial reductions to the inflow to the Sea, as shown in Figure 2, eventually reaching an elevation about 20 feet lower than today.

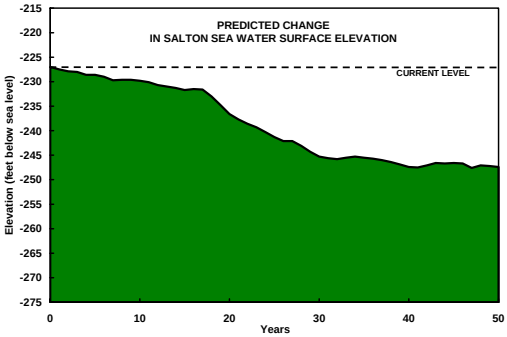

Figure 2
Predicted Sea-Elevation Decline

The receding shoreline would leave large areas of sediment exposed to wind erosion. Figure 3 shows the expected progression of exposed sediments over time. After 30 years, about 80 square miles (over 50,000 acres) of lakebed sediments would be exposed.

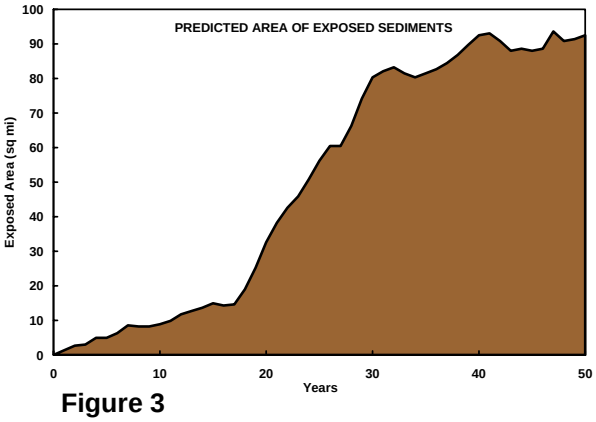

Figure 3
Predicted Square Miles of Exposed Lakebed

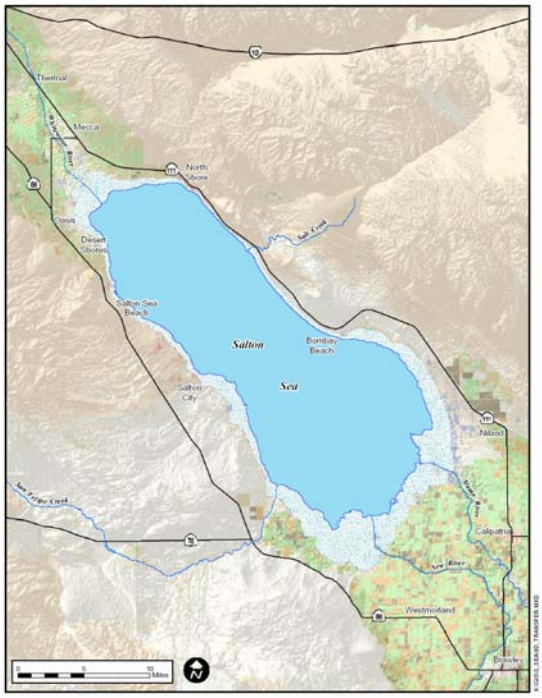

Figure 4:
Lakebed Exposed, Post Water Transfer

Figure 4 depicts the predicted new shoreline of the Salton Sea in 30 years, after implementation of the water transfers, and depicts the 80 square miles of exposed lakebed in light blue.

POTENTIAL AIR QUALITY IMPACTS

There is no debate that much land will be exposed as the water transfer is implemented. On the other hand, there is little consensus on what impact such exposure will have on PM10 levels or on human health in the Coachella or the Imperial Valleys. Of course, predicting future emission impacts while the future exposed area is underwater is difficult and complicated. The U.S.G.S. Salton Sea Science Office has spearheaded a number of efforts, with the Salton Sea Authority and U.S. Bureau of Reclamation, to facilitate better predictions, including bringing together some of the nation's top experts on PM10 and dry lakes to help chart a research and monitoring program, assembling detailed weather and other data, and most recently, directing a detailed assessment of near shore sediments. (Characterization of Shallow Sub-Surface Sediments of the Salton Sea, Agrarian Research, 2003)

The Imperial Irrigation District Water Conservation and Transfer Project Environmental Impact Report/Statement (EIR/EIS) predicted the transfer could have a serious and unavoidable impact on air quality. The impacts were not quantified. Much attention in that EIR/EIS and related environmental assessments has been given to the differences and similarities with the nation's greatest contributor of PM10, Owens Lake.

Notably, Owens Lake problems occurred after a water transfer/diversion by the City of Los Angeles that began decades ago. Ironically, the scale of the water diversion from the Owens River and the amount of water reduced from inflows to the Sea as a result of the IID water conservation and transfer project are similar. So is the amount of area exposed. However, there are differences in temperature, humidity, winds, salt composition, and groundwater that might reduce the likelihood of impacts at the Salton Sea. All are factors contributing to emissions at Owens Lake and are likely factors affecting conditions at the receding Salton Sea. Still, there are good reasons for concern.

Figure 5:
Photo of Lakebed Salts Blowing, Winter, 2001/2002

During the winter of 2001/2002, the director of the Salton Sea Science Office witnessed a wind event at the southeast of the Salton Sea that picked up salts and lakebed material from a seasonally exposed area of the Salton Sea and blew it on-shore (see Figure 5).

A more dramatic indication of the risk from the periodic high wind events at the Salton Sea occurred just four months ago on September 4, 2003. Following are images from the Salton Sea shoreline showing a massive dust cloud engulfing areas as it moved from the desert southwest of the Sea north across the Sea and into the Coachella Valley. Figure 6 shows the storm from the west side of the Sea at Salton City. The wall of the storm was estimated by the State Park ranger to be over 2000 feet high. Figure 7, below, shows the storm from the east side of the Sea at Bombay Beach, looking across the Sea.

Figure 6:
Dust Storm Over the Salton Sea From Salton City
September 4, 2003

Figure 7:
Dust Storm Over the Salton Sea, from Bombay Beach
September 4, 2003

Hypothetical scenarios help explain the interest and concern about "re-creating" an Owens Lake problem at the Salton Sea.

Owens Lake generates, on average, about 250,000 tons of PM10 per year. For many of us, that number does not "mean" much. To put it into perspective, if the 80 square miles of exposed lakebed at the Sea generates only 1% as much PM10 as similar exposed areas at Owens Lake, the Sea would generate 2,500 tons of PM10 per year. Comparing this hypothetical impact to the amount of PM10 generated by all mobile and stationary sources in the Coachella Valley, 328 tons/year, puts this number in perspective (see figure 8) (California Air Resources Board, Emissions Inventory, 2002). Prevailing winds during much of the year will direct any fugitive dust from the lakebed toward the Imperial Valley. However, some of the most violent storms, as the dust storm pictured above indicates, come from the south during the summer, monsoon season, when prevailing winds reverse direction and head north into the Coachella Valley.

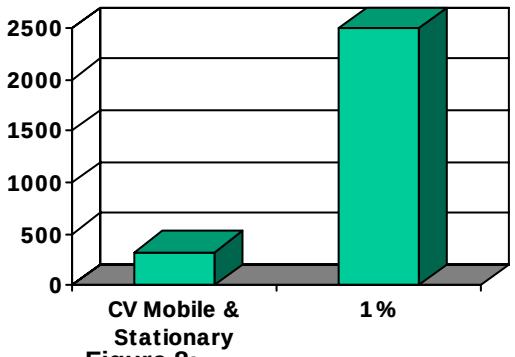

Figure 8:
Comparison: 1% of the Owens Lake PM10 Problem to All Mobile & Stationary Sources in Coachella Valley

While PM10 alone is a health concern, the other concern is related to the nature of the particles that might be detached and picked up by wind. While the Sea's water quality is quite good on many measures (meets many EPA drinking water quality standards, except, of course, for salts), concentrated levels of some elements of concern are found in some of the Sea's sediments. Of the elements of concern, Selenium, Copper, Molybdenum, Nickel, Zinc and Selenium, are concentrated in the sediments in the north end of the Sea, closer to the Coachella Valley. While some of the highest concentrations of elements like Selenium are found in deeper waters, others are found around the Whitewater delta, an area that will be exposed if the Sea recedes as projected. (Environmental Reconnaissance of the Salton Sea: Sediment Contaminants, LFR, Levine Fricke, 1999)

One major difference between the Owens Valley and the Coachella and Imperial Valleys is population. Owens Lake is far from major population centers. The Coachella Valley has a year round population of over 300,000 persons and a seasonal population of over one million. This region's top two industries, agriculture and tourism are both negatively impacted by poor air quality.

ROLES & RESPONSIBILITIES

If there is an air quality problem from a receding Sea, who will be responsible for "fixing" it? As noted above, the water transfer environmental documents acknowledge the potential air quality problem. The water transfer environmental documents include the following mitigation measures: restricting public access to exposed areas to minimize disturbance of natural crusts and a research and monitoring program. The monitoring program is a condition of the transfer permit by the State Water Resources Control Board. If monitoring determines that actual impacts exceed standards, additional mitigation steps are identified: include creating or purchasing offsetting emission reduction credits or direct mitigation through provision of mitigation water or stabilizing soils.

While direct mitigation of the potential air quality problem is an identified mitigation measure, the water transfer parties may not be the responsible agency for funding the mitigation measures. Under the recently signed water transfer and related agreements, the water transfer parties are limited to paying $133 million for all mitigation costs (including those in the Imperial Valley, along the Colorado River, etc.). If serious air

quality problems materialize at the Sea, it is likely that the water transfer parties' mitigation fund would not be sufficient to pay for mitigation and, presumably, the State of California would be financially responsible for any additional costs.

The Salton Sea Authority is developing a restoration plan. The reduced inflows make restoring the Salton Sea that much more complicated and challenging. The current direction of restoration planning involves designing a smaller body of water and associated wetlands, consistent with reduced inflow scenarios. The plans include dredging and/or constructing shallow water habitat areas that would be a part of the salt management system. It is likely that these shallow water habitat areas would be arranged in ways that break up the distance between dry playas and wetted surfaces. Also, we are working with a contractor with much experience at Owens Lake to design our salt management systems in ways that would "cap" soil, reducing potential emissive surfaces. At the same time, we will continue to work with the Bureau of Reclamation and U.S.G.S. Science Office to support research and science that will help us and others predict and respond to potential air quality problems.

The federal government has clear national air quality priorities associated with the Clean Air Act. The federal government also has major responsibilities associated with the Sea associated with the Migratory Bird Treaty, the Endangered Species Act and the Salton Sea Reclamation Act of 1998. The 1998 Act, along with continued support by Congresswoman Mary Bono and the Congressional Salton Sea Task Force, have enabled the Bureau of Reclamation and U.S.G.S. Salton Sea Science Office to work in partnership with the Salton Sea Authority on restoration studies, pilot projects and other activities. I understand that Department of Interior restoration-related activities do not fall within your subcommittee's purview, however, since air quality concerns are a critical element of any restoration effort, your subcommittee's assistance in supporting air quality-related research and/or projects would be greatly appreciated. Addressing the problems of a receding Salton Sea proactively and through restoration will be more cost effective than "mopping up" the problems later. The nation cannot afford another Owens Lake problem, this time centered in a region of a million people.