

**WRITTEN TESTIMONY OF
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SOUTHERN NEVADA WATER AUTHORITY
BEFORE THE
HOUSE NATURAL RESOURCES COMMITTEE,
SUBCOMMITTEE ON WATER AND POWER
ON WATER QUALITY ISSUES
IN THE LOWER COLORADO RIVER**

MAY 27, 2009

Madame Chairwoman and Subcommittee members, my name is Ronald E. Zegers and I am the Director of the Southern Nevada Water System – the operations and maintenance arm of the Southern Nevada Water Authority. The Southern Nevada Water Authority is a cooperative seven-member agency that was formed in 1991 to address Southern Nevada’s unique water needs on a regional basis. The Water Authority is a wholesale-water supplier to nearly two million residents in the Las Vegas Valley, as well as the potable-water provider to approximately 250,000 daily visitors to the Las Vegas Strip.

Approximately 90 percent of Southern Nevada’s drinking water supply comes from the Colorado River via Lake Mead. Nearly 100 percent of all water used indoors is highly treated and returned to Lake Mead for reuse. Sustained drought conditions along the Colorado River, coupled with population increases in the Las Vegas Valley, have intensified the Southern Nevada Water Authority’s approach to protecting the community’s water supply. My testimony includes a brief overview of the challenges facing Lake Mead water quality and major efforts underway by local, state and federal stakeholders. This includes implementing interagency collaborative efforts, such as the formation of the Las Vegas Valley Watershed Advisory Committee (LVVWAC) and Boulder Basin Adaptive Management Plan (BBAMP).

The LVVWAC was formed in 2007 among nine local agencies to coordinate efforts related to water quality and watershed protection efforts throughout the Las Vegas Valley, and maximize existing and future Colorado River resources available to local water purveyors. Through the LVVWAC, the Water Authority and its member agencies acknowledge that the treatment, reuse and discharge of water from point and non-point sources in the Las Vegas Valley must be managed as critical elements of Southern Nevada’s long-term water-resource plan. To this end, the LVVWAC has developed a Regional Water Quality Plan that details water quality goals and recommends mechanisms for achieving these goals to protect the quality and quantity of water resources in the Las Vegas Valley watershed and Lake Mead. A primary goal is to develop an integrated approach to address treatment issues relating to wastewater, drinking water and stormwater.

Given the nexus between water and wastewater in Southern Nevada, the Water Authority also works closely with the area’s wastewater agencies and the Clean Water Coalition (CWC) to coordinate wastewater reuse and treatment. In January 2007, the Water Authority entered into a Memorandum of Understanding with the CWC, National Park Service and Bureau of

Reclamation (BOR) to participate in the development and implementation of the BBAMP. Since that time, a representative from the Metropolitan Water District of Southern California has been added as a member of the BBAMP Technical Coordination Team. The U.S. Fish and Wildlife Service also joined as a BBAMP participant. The BBAMP is the administrative tool that provides operational oversight of wastewater facilities to assure Lake Mead's water quality objectives are met. Specifically, the BBAMP addresses water quality changes in Lake Mead associated with location changes of treated wastewater discharge from the Las Vegas Valley. Currently, wastewater in the valley is discharged into Lake Mead's Las Vegas Bay via the Las Vegas Wash, a 12-mile channel comprised of stormwater, reclaimed water, shallow groundwater and urban runoff.

The importance of maintaining the water quality in Lake Mead is a critical local priority. It also is a multi-state and federal priority. To this end, the State of Nevada Division of Environmental Protection hosts the Lake Mead Water Quality Forum. The forum includes Southern Nevada's local water and wastewater agencies; the State of Nevada's Colorado River Commission, Division of Environmental Protection, Division of Health, Division of Wildlife and University System; as well as the federal government's U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Geological Survey, National Park Service, National Resources Conservation Service and U.S. Bureau of Reclamation. These agencies also participate in the Las Vegas Wash Coordination Committee, Regional Quagga Mussel Committee and Water 2025 Committee.

Extensive monitoring programs have been developed to address current and future water quality concerns. The Water Authority, CWC, U.S. Geological Survey and BOR, in cooperation with the National Park Service, currently monitor Lake Mead water quality, as well as all inflows and outflows to Lake Mead. Most monitoring locations are sampled on a weekly basis, while others are sampled on a monthly basis. The samples are analyzed for general drinking water quality parameters, nutrients and biological constituents. Samples for Emerging Environmental Contaminants (EECs) are collected and analyzed on a quarterly basis. All data is entered into a water quality database that is accessible via the Internet for use by all interested agencies. The data has been used to develop an extensive three-dimensional model of Lake Mead to evaluate and predict the future effects of wastewater treatment plant effluent discharged into Lake Mead.

These local, state and federal agencies also are involved in water quality research. Southern Nevada's current research initiatives include selenium-treatment efficiency, EECs treatment technologies, EECs effect on the ecology of Lake Mead, and a study to determine the effects of wastewater on the reproductive success of fish. There also is quagga mussel control research underway to prevent settlement and attachment of quagga mussels in infrastructure and facilities.

Although collaboration, monitoring and research among local, state and federal agencies has facilitated a positive and necessary first step in protecting Lake Mead's water quality and ecosystems, a number of future challenges continue to exist. These challenges are listed below and are expected to be exacerbated in the future as the demand for Colorado River water increases and the impacts of climate change are fully understood.

1. **Decreased Lake Mead Inflows.** Drought conditions in the Colorado River Basin have reduced Lake Mead inflows; water treatment capabilities are limited by dilution and mixing of existing storage, lower surface elevation and associated temperature variations.
2. **Increased Wastewater Inflows.** There is an increase in volumes of treated wastewater discharged into Lake Mead due to population increases in the Las Vegas Valley, as well as an increase in new treated wastewater discharged into the Virgin and Muddy rivers due to increases in upstream uses. These increases will result in an increase in nutrients and ECCs present in the environment.
3. **Increased Non-Point Source Inflows.** An increase in non-point source inflows is expected due to continued development in the Las Vegas Valley watershed.
4. **Invasive Species.** Quagga mussels have recently invaded the Colorado River and have the potential to cause deleterious impacts on Lake Mead infrastructure and water quality.
5. **Mining and Industrial Development.** Existing mines and mining, and industrial development upstream of Lake Mead has the potential to impact water quality.
6. **Perchlorate Remediation.** Perchlorate is an oxidizer found in solid rocket fuel that was produced in the Las Vegas Valley for 50 years. Before environmental regulations, lax disposal practices allowed perchlorate to contaminate Lake Mead and the lower Colorado River. Although perchlorate concentrations in Lake Mead and the lower Colorado River have decreased dramatically in recent years due to remediation, funding for perchlorate remediation is in jeopardy. Currently, the company responsible for one third of the funding for perchlorate remediation is in bankruptcy and insurance will only cover the operations of the remediation facility until December 2010.

The Southern Nevada Water Authority suggests that the federal government participate in the challenges facing Lake Mead in the following ways:

1. Evaluate the impacts to water quality resulting from the drought and climate change through the development of a model to predict changes to water quality in the Colorado River system.
2. Fund research for EEC and nutrient removal in wastewater treatment and fund monitoring programs on the Colorado River.
3. All flood control structure designs should incorporate water quality management considerations.
4. Fund invasive species research to uncover the ecology of the quagga mussel and similar organisms in the southwest, and fund control practices to reduce the impact of the invasive species. Specifically, the Water Research Foundation's identified research needs should be funded.
5. Continue clean up of the Moab uranium mill tailings and supply adequate oversight to ensure upstream mining or industrial development have sufficient controls to ensure that there is no impact to water quality.
6. Fund perchlorate remediation if adequate funding sources cease.

This concludes my testimony. Thank you for the opportunity to address you. I am happy to answer any questions.