

LAKE MEAD WATER QUALITY FORUM
September 21, 2006
Meeting Summary

I. Introductions – Forum members introduced themselves.

II. Status Reports:

1. Perchlorate – Todd Croft (NDEP – Las Vegas)

LV Wash:

- The perchlorate mass flux passing Northshore Road during the last three months ranged between 100 and 150 lbs./day.
- This is about an 80 to 85% reduction from pre-remediation values when the mass flux at Northshore Road was approximately 900 to 1,000 lbs./day.

Willow Beach:

- The perchlorate concentrations measured at Willow Beach in the Colorado River system continue to remain low and have been measured at < 4 parts per billion (ppb) since June 2004. For 10 of the 12 months in 2005 and most of 2006, Willow Beach concentrations were reported below 3 ppb.
- Perchlorate concentrations at Willow Beach were reported at 1.99, 2.73, 2.08, and 2.13 ppb for May, June, July, and August 2006 respectively.

Tronox LLC (formerly Kerr-McGee):

- Tronox' Fluidized Bed Reactor (FBR) perchlorate treatment system continues to operate. Perchlorate concentrations in the treated water discharge are routinely < 18 ppb.
- Perchlorate removal rates for the Tronox remediation system are typically reported between 1,700 and 2,000 lbs. per day.
- Removal of perchlorate from the environment through August 2006: ~2,039 tons total; 369 tons from the seep area; 567 tons from Athens Road; and 1,103 tons from the on-site system.
- Construction began in May 2006 on a 9th FBR and a sand filter. The construction is complete, upgraded control systems have been installed, sand has been added to the new FBR and sand filters, biologically conditioned sand has been transferred from the existing FRB's to the new FBR, and sand conditioning by continued biological growth continues. The FBR System is operating at ~ 980 gpm. The effluent quality is improved. Treated water discharged to the Las Vegas Wash is substantially clearer now that the sand filter is used to remove additional solids. Once the new FBR has been fully conditioned, an approximate 25 % increase in chemical loading will be added to the influent to the FBR Treatment System.

- Installation of a 9th extraction well in the Athens Road Well Field occurred in early May 2006. The electrical & hydraulic connections and well commissioning occurred in early September 2006. Improve overall capture and performance of the Athens Road Well Field is expected now that this well is operating and allowing extraction in a deeper portion of the secondary paleo-channel.

AMPAC:

- AMPAC has completed the installation of the first phase of their In-situ Biological (ISB) Treatment Systems (the Interim ISB System). The system began groundwater extraction and injection on June 19, 2006. Degradation of perchlorate to non-detectable concentrations (<6ppb) was achieved in the lead (first/closest) performance monitoring well by July 24, 2006. Scaling up to the full-scale, long-term ISB system capacity continues to occur.
- This remediation system will focus on impacted groundwater at the leading edge of the plume and will be activated in two phases.
- The Athens Road Extraction Well Field is now operating at approximately 220 gpm. This well field soon should be extracting at the planned flow rate of approximately 330 gpm. Extracted groundwater is conveyed through buried conveyance piping to the injection well field about a mile north of Athens Road.
- The Interim ISB Treatment System will be used to allow for the initial system start-up (Phase I) while construction continues on the long-term ISB Plant and Athens Pen Well Field. The second phase of system activation is expected to occur in January 2007 and will allow for activation of three additional extraction wells along Athens Pen and the full-scale, long-term ISB Plant to replace the Interim ISB Treatment System.
- Activation of the Athens Pen Well Field will allow for an additional 60-100 gpm of groundwater extraction further northeast of the Athens Road Well Field.
- A tracer tests is planned for early 2007 to evaluate the configuration of the monitoring well network down gradient of the injection well field after all extraction wells have been pumping and groundwater conditions have equilibrated.

Nationally:

- The Cal/EPA's Office of Environmental Health Hazard Assessment (OEHHA) published a 6 ppb public health goal (PHG) for perchlorate in March 2004. A California based drinking water standard [Maximum Contaminant Level (MCL)] of 6 ppb was recently proposed in August 2006. The California MCL is to be set as close to the PHG as economically and technically feasible.
- The National Academy of Sciences' (NAS) National Research Council (NRC) issued their report in January 2005. The NAS NRC concluded that an oral reference dose (RfD) of 0.0007 milligrams per kilogram per day (mg/kg/day) would be a health protective reference dose.
- The U.S. EPA adopted this RfD in February 2005.
- In January 2006, the U.S. EPA Office of Solid Waste and Emergency Response (OSWER) released new guidance to states, regions, and stake holders. This guidance indicates that using the 0.0007 mg/kg/day RfD leads to a Drinking Water Equivalent Level (DWEL) of 24.5 ppb. This guidance also indicated the appropriate preliminary remediation goal (PRG) for perchlorate is 24.5 ppb.

The NDEP is evaluating this new guidance. We will continue to use the Provisional Action Level of 18 ppb for the foreseeable future. The 18 ppb Provisional Action Level is incorporated into both the Tronox NPDES permit and the AMPAC UIC permit.

- On October 2005, The New Jersey Drinking Water Quality Institute submitted a report to the New Jersey (NJ) Department of Environmental Protection (DEP) recommending adoption of a health-based State MCL of 5 ppb. The proposed 5 ppb State MCL is based upon the 0.0007mg/kg/day RfD recommended by the NAS NRC in January 2005 and adopted by the U.S. EPA in February 2005. A 20 % relative source contribution term and a 67 kg body weight of a pregnant adult were used to derivate the proposed State of NJ MCL.
- In July 2006, Massachusetts promulgated a 2 ppb State Drinking Water standard for perchlorate. This followed action by the Massachusetts Department of Environmental Protection (DEP) wherein they rejected the NAS NRC recommendations to allow for the application of an additional uncertainty factor in their updated perchlorate health assessment.

2. Selenium Subcommittee:

Discussions continue on how to develop/implement best management strategies to deal with the elevated selenium concentrations in the Las Vegas Wash. At the May 24, 2006 Forum meeting, Doug Merkler (Natural Resources Conservation Service) presented the results of water quality, bioassessment, soil and plant studies conducted to date. On August 15, 2006, Dr. Joseph Skorupa (U.S. Fish and Wildlife Service) gave a presentation on the status of the development of a national fish tissue based selenium criteria and an evaluation of the Las Vegas Wash bioassessment data. Dr. Skorupa indicated that fledgling success (the survival time after hatching) is an important factor. The first five days are the most critical and are a good indication of the health of the bird population as a whole. Based on Dr. Skorupa's recommendations, future monitoring and research needs are being reevaluated. A copy of his presentation will be posted on the NDEP Lake Mead Water Quality web page.

The Selenium Subcommittee's recommendation that the Forum ask the Las Vegas Wash Coordination Committee to oversee development of future management strategies was tabled until more information on the Boulder Basin Adaptive Management Plan and Selenium Management Plan being developed as part of the SCOP is available.

3. Las Vegas Wash Coordination Committee (SNWA)

Mr. Seth Shanahan of SNWA reported on a variety of future activities. He announced that the annual tour of the Las Vegas Wash will be held October 24th. A "green-up" event is planned for September 30th. Ten acres associated with the planned 60 acre re-vegetation project will be planted. Mr. Shanahan encouraged people to participate. Those willing to supervise the volunteers are especially needed. Contact Debbie VanDormalen at (702) 822-3370 for additional information. The next Management Advisory Committee meeting is scheduled for October 16th. At that meeting, selenium issues will be further discussed. The January 2007 meeting will include a discussion of the draft Las Vegas Wash Fish and Wildlife Adaptive Management Plan. This document describes how to best manage resources considering the new challenges in the watershed.

III. Presentations

- 1. "SCOP" (Doug Karafa – CWC)**
- 2. "Indirect Potable Water Re-Use, Should it be Considered" – (Walter Johnson – retired – CCWRD)**
- 3. "Third Water Intake" (Marc Jensen – SNWA)**

These presentations are available on the NDEP website at ndep.nv.gov/forum

IV. Other Issues

Nothing discussed in this area

V. Next Forum Meeting

The next Lake Mead Water Quality Forum meeting was scheduled for January 23, 2007.

VI. Adjourn

The meeting was adjourned at 11:57 a.m.