

Nevada Division of Environmental Protection
Southern Nevada Perchlorate Cleanup Project
FACT SHEET

Perchlorate, both a naturally occurring and man-made chemical used as a component of rocket fuel and fertilizer, was first detected in the Lower Colorado River in 1997. There is no federal drinking water standard for perchlorate. Due to possible environmental health concerns that perchlorate interferes with thyroid function, the Nevada Division of Environmental Protection (NDEP) along with the Southern Nevada Water Authority (SNWA), US Environmental Protection Agency (EPA), the City of Henderson and Kerr-McGee, began to investigate the source of the perchlorate. Once the source was identified, a remediation plan was enacted to remove perchlorate from ground and surface water. Perchlorate entering the environment has been reduced by 85% since 1997 and as of April 2005, 1574 tons of perchlorate has been removed from the environment. NDEP continues to monitor perchlorate levels and the level reported in the Lower Colorado River is below the safety limit set by EPA in February 2005.

SOURCE:

The source of the perchlorate was traced upstream to the Las Vegas Wash, which discharges into Lake Mead. Perchlorate was entering the Las Vegas Wash through contaminated groundwater and surface water stemming from a manufacturing facility owned and operated by Kerr-McGee LLC. Perchlorate-contaminated groundwater was also found to originate from the former Pacific Electrochemical Production Company (Pepcon), owned by American Pacific Corporation (AMPAC), however, the amount of this groundwater entering the Las Vegas Wash is currently being investigated. The U.S. Navy, Western Electrochemical Company and American Potash and Chemical Company owned the current Kerr-McGee facility. Perchlorate was produced at this facility from 1945 until 1998. Perchlorate was manufactured at the AMPAC facility from 1958 until 1988 when an explosion destroyed the Pepcon plant.

CLEANUP SYSTEMS:

Following the discovery of perchlorate in Lake Mead and the Las Vegas Wash in 1997, Kerr-McGee developed a system to remove perchlorate from groundwater flowing into the Las Vegas Wash. Water is pumped from the ground and treated through a treatment system. Following removal of high concentrations of perchlorate, the water is discharged into a tributary of the Las Vegas Wash. The system is approximately 99 percent

Project Timeline

1997

- Initial discovery of perchlorate in the Lower Colorado River and aqueducts
- Source traced back to Las Vegas Wash

1998

- Plume characterization
- On-Site capture (Kerr-McGee)

1999

- Seep capture (Kerr-McGee)

2000

- Seep area characterization
- Pilot plants constructed
- Groundwater treatment plant designed

2001

- Full-Scale groundwater treatment system (ISEP-PDM) construction
- All well fields & infrastructure installed
- Permitting finalized
- On-Site slurry wall constructed

2002

- Full-Scale plant (ISEP-PDM): construction completed
- One-Pass IX System replaces ISEP-PDM
- All collection points operating (October 2002)

2003

- Five additional seep area wells installed March 2003 to compliment four existing seep area wells and replace ISEP-PDM & IX

2004

- Fluidized Bed Reactor biological treatment system in full-scale operation December 2004

effective in removal of perchlorate. The surface and groundwater are treated through a biological treatment system and then discharged back to the tributary. The latest upgrade to the system went online in December 2004 and provides improved effluent water quality.

RESULTS:

Sampling of groundwater and surface water is conducted by NDEP, SNWA, Kerr-McGee, AMPAC and the Southern California Metropolitan Water District (MWD). Surface water is sampled in the Las Vegas Wash, Lake Mead and points on the Colorado River downstream of Lake Mead. Concentrations in the Las Vegas Wash have decreased by more than 85 percent since 1997. Sampling data from the Willow Beach sampling point on the Colorado River approximately 11 miles downstream from Hoover Dam shows a reduction from a high of 9.7 ppb in June 1999 to 3.0 ppb in May 2005. Sampling data from the Northshore Road sampling point in the Las Vegas Wash downstream from Lake Las Vegas shows a reduction from a high of 1200 ppb in October 1998 to 130 ppb in April 2005. NDEP continues to work with EPA, SNWA, MWD, the City of Henderson, Kerr-McGee, AMPAC and BMI to develop opportunities to further refine capture and treatment technologies.

