

**Member Spotlight****Mojave Water Agency**

Mojave Water Agency (MWA) was created in 1960 by a vote of the residents within its boundaries. Covering over 4,900 square miles of the high desert in Eastern San Bernardino County, the region's local water demands are met by pumping water from groundwater basins. Until the formation of MWA, these aquifers relied on natural sources, such as runoff from the San Bernardino Mountains, for replenishment. MWA is charged with the responsibility to "do any and every act necessary to be done so that sufficient water may be available for any present or future beneficial use of the lands and inhabitants" in its enabling legislative act (California Water Code Appendix Chapter 97).

The MWA's area is approximately the size of Connecticut.

Mojave Water Agency is responsible for developing and implementing a Regional Watershed Management Plan and acts as the Watermaster for the Mojave River Basin Area Adjudication. MWA also participates in cooperative programs with the United States Geological Survey and its constituents. MWA strives to bring water supply and water demand in balance through these and many other activities.

Imported water is key to the high desert's survival because, since the 1950s, the increasingly populous desert has been using more water than is replaced naturally. MWA is one of 29 state water contractors with access to supplemental water from the California Aqueduct. MWA is annually entitled to access 75,800 acre-feet of State Project Water and delivers its water from the East Branch of the California Aqueduct to the Morongo Basin and Mojave River Pipelines.

In the early 1990s the MWA built the Morongo Basin Pipeline, which has been supplying water to replenish parched underground storage basins since February 1995. In mid-1996, the Board of Directors authorized the construction of the Mojave River Pipeline, which began construction last year and will begin to deliver water in 1999.



*Construction of the Mojave River Pipeline to the greater Barstow area will deliver water to the recharge aquifer.*

The boundaries of the Mojave Water Agency include the communities of Adelanto, Apple Valley, Baldy Mesa, Barstow, Daggett, El Mirage, Grandview, Helendale, Hesperia, Hinkley, Johnson Valley, Joshua Tree, Landers, Lenwood, Lucerne Valley, Newberry Springs, Oak Hills, Phelan, Pinon Hills, Pioneer Town, Silverlakes, Spring Valley Lake, Summit Valley, Victorville, Yermo, and Yucca Valley.

*Mojave Water Agency  
22450 Headquarters Drive  
Apple Valley, California  
www.mojavewater.org  
(760)240-9201*

*Editors: D. Heil, C. Gehman, R. Wildermuth  
Designer: D. Davis  
Published courtesy of Orange County Water District  
Article contributions are welcome. Please call: 714-378-3218  
Visit the AGWA website at: www.agwa.org*

## **New Members Welcomed to AGWA**

The Association of Ground Water Agencies is growing. One new member and four affiliate members have joined the organization since June 1998. Eastern Municipal Water District, represented by Clayton A. Record, Jr., was welcomed officially during the August meeting. In July and August the City of Riverside, represented by Zahra Panahi; Komex H2O Science represented by Robert Traylor; Metropolitan Water District of Southern California represented by Nina Jazmadarian; and Narver Associates represented by Al Parizo were warmly welcomed as affiliate members.

These additions bring the total to 23 organizational members. AGWA bylaws define a member as any entity which is responsible for managing groundwater basin resources in Southern California. An affiliate member is any entity that has a direct interest in the management of water supplies in California. Agencies and organizations apply for membership with a letter of application. Affiliates enjoy full participation in all activities but do not have voting rights.

## **Main San Gabriel Basin Watermaster Tests For Contaminants**

The Main San Gabriel Basin Watermaster (Watermaster) has commissioned two studies on perchlorate treatment for drinking water based on ion exchange technology. One study involves three different resins in an ion exchange field pilot project. The second study evaluates an ISEP (ion separation) unit for perchlorate removal below the state's provisional action level of 18 ug/l. Preliminary field work for both studies concluded the end of summer.

Recent testing of basin groundwater revealed the presence of NDMA (N-nitrosodi-methylamine), a component of liquid rocket fuel, in various wells. NDMA, a known carcinogen, is also formed through chemical reaction involving alkylamines and is frequently found in common foods and beverages and in the human body. Watermaster is currently working with USEPA and a group of Responsible Parties to determine the extent of NDMA contamination.

In light of recent discoveries of new contaminants, Watermaster has undertaken a study to assess the potential presence of any other chemical contaminants in basin groundwater. The Contaminant Vulnerability Study is identifying all known chemical contaminants (a total of 669) and determining the likelihood of each contaminant being discovered in basin groundwater.

## **New Groundwater Recharge Study Launched in Santiago Creek**

Orange County Water District (OCWD) has initiated a pilot study to determine the feasibility of using portions of Santiago Creek to recharge its vast groundwater basin. Officials hypothesize that the creek area could recharge enough water to meet the needs of 20,000 households each year. That is enough water to service a city the size of La Palma or Seal Beach.

For the pilot study, OCWD is installing 13 shallow monitoring wells near the creek between Chapman and Tustin Avenues in the city of Orange. El Nino stormwater originating from behind Villa Park Dam will be released by the Orange County Flood Control District into the creek. Over a period of approximately three months, water level data from the monitoring wells will indicate if the creek bed effectively recharges into the groundwater basin.

"If the study proves successful, the Santiago Creek recharge project has the potential to provide an additional 10,000 acre-feet of water each year saving up to \$2.4 million annually in avoided imported water costs," said Daniel Griset, President of the OCWD Board of Directors.

## Stakeholder Involvement Yields Groundwater Management Plan For Eastern Municipal Water District

With the survival of a large, unadjudicated groundwater basin at stake, Eastern Municipal Water District (EMWD) was anxious to establish a groundwater management plan when AB 3030 was adopted in 1992.

After three years of hard work and the extraordinary involvement of a wide variety of stakeholders, the West San Jacinto Groundwater Management Plan was adopted in June 1995.

The plan took advantage of AB 3030's intent to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions. EMWD's emphasis was on cooperative development of regional strategies for the protection and management of local groundwater resources.

The 256-square mile area involved is in west-central Riverside County and runs generally from Perris and Moreno Valley eastward about half the distance to San Jacinto and Hemet. Specifically, Eastern stated the goal of its plan was to maximize the use of groundwater for all beneficial uses in such a way as to lower the cost of water supply and improve the reliability of the total water supply for all water users in the area.

Following adoption in 1993 of a resolution of intent to develop a plan, a series of more than 30 public meetings took place with stakeholders who included private pumpers, a mutual water company, several cities and other interested individuals.

When adopted in 1995, the plan included several elements. One was the conjunctive use of imported water, reclaimed water and water

resulting from water harvesting. Another element was recovery of contaminated groundwater to be blended with imported water. The plan also addressed recovery of brackish groundwater using demineralization or other treatment technologies.

Transfer of agricultural groundwater was also an element of the plan. The groundwater is to be exchanged for EMWD's reclaimed water, which the district produces at both the secondary and tertiary levels.

Implementation of the plan began immediately following its adoption. Initial activities included establishing an advisory committee with representatives from all stakeholder groups, prioritization of subbasins and evaluation of groundwater resources including groundwater quality and level monitoring, extraction monitoring and hydrogeophysical investigations.

EMWD officials consider the plan highly successful to date. The plan has won extensive recognition, including the California Water Resources Association (CWRA) 1995 Edmund G. Pat Brown Water Resources Leadership Award. It was also recognized with the 1998 California Municipal Utilities Association (CMUA) Community Service/Resource Efficiency Award.

EMWD places particular importance on the plan because the agency relies so heavily on imported water. About 75% of all water served throughout its 555-square mile service area is imported. The district would like to reduce that figure.



## Pollock Wells Treatment Plant, Upper Los Angeles River Area (ULARA) Watermaster

The Los Angeles Department of Water and Power (DWP) has recently completed construction of a groundwater cleanup facility, the Pollock Wells Treatment Plant (Pollock Plant).

The Pollock Plant will treat 3,000 gpm of groundwater contaminated primarily with two industrial solvents: trichloroethylene (TCE) and perchlorethylene (PCE). In ULARA, this is the fifth groundwater plant that has been brought on line to restore a potable supply of severely contaminated groundwater.

The Pollock Plant is located in the very southern portion of the Basin. This \$4 million plant will serve to reactivate a wellfield that was removed from service almost a decade ago. The groundwater table near the Pollock Plant is relatively shallow and has steadily risen over the past five years because pumping capacity has been lost in this area.

The main purpose of the Pollock Project is to address rising groundwater in the Los Angeles River Narrows Area due to curtailed pumping in the area. ULARA Watermaster is concerned that this causes excessive rising groundwater discharges into the Los Angeles River. The Pollock Project also provides the DWP with increased flexibility in using groundwater supplies from the San Fernando Basin (SFB).

While the Pollock Project is compatible with the EPA's goal of basinwide groundwater cleanup and protection, it is not directly related to the EPA's groundwater cleanup efforts and will not be funded by the EPA. The Pollock Project's main focus is to reduce groundwater discharges into the Los Angeles River, thus maintaining water rights for the City of Los Angeles.



*Pollock Wells Treatment Plant*

The Pollock Plant is located near an area where the bottom portion of the Los Angeles River is unlined. When the groundwater table rises above the bottom of the river, there is an opportunity for the river to gain flow and increase the river's discharge out of the Basin. The ULARA Watermaster has strongly supported the Pollock project to help alleviate this problem.

Groundwater from two wells will be pumped to the top of four 30-foot vessels containing granular activated carbon. After the contaminants are removed, the treated water will enter an underground reservoir, be chlorinated and then pumped into DWP's distribution system. In addition, the water will be equally blended with other supplies to lower nitrate concentrations.

If you would like additional information on the ULARA cleanup activities, please call (213) 367-0906.

In late May, the Burbank Operable Unit, a 9,000 gallons per minute (gpm) groundwater treatment facility, was reactivated. The facility consists of two stages of wet phase treatment: aeration followed by granular activated carbon (GAC). Between 1985-95, Burbank lost the majority of its wells to volatile organic compound (VOC) contamination. This facility will provide almost half of Burbank's annual water demand.