

# **Chino Basin Watermaster Status Report No. 5**

**(Covering October and November 2002)**



**December 2002**



## BACKGROUND

In its Order of September 28, 2000 extending the term of the nine-member Watermaster Board, the Court ordered Watermaster to provide semi-annual reports regarding the progress of OBMP implementation. These reports are due on the last day of March and September of each year. (9/28/00 Order, p. 4.) In accordance with this schedule, Watermaster filed its Status Report No. 4 on September 30, 2002. At this time Watermaster also indicated its intention to accelerate the reporting schedule from semi-annual to quarterly due to the rapid pace of OBMP implementation.

In addition, in its Order of October 17, 2002 approving Watermaster's Interim Plan for the Management of Subsidence, the Court requested Watermaster to provide periodic reports concerning various issues relating to the Interim Plan by the last day of June and December of each year. (10/17/02 Order, p. 4.) These reporting items will be included within Watermaster's regular quarterly reports.

Finally, since the Watermaster practice is to allow all of the Pool Committees as well as the Advisory Committee and Board to review the status reports prior to filing, it is necessary to complete the reports as much as a month in advance of filing. For this reason, the reporting period for this Status Report No. 5 will be the months of October and November of 2002. Status Report No. 4 covered the period up until September 30, 2002, and Status Report No. 6 will cover the three month period of December 2002, and January and February of 2003. Status Report No. 6 will be filed by the last day of March.

Status Report No. 5 maintains the same format as Status Report No. 4 and uses it as a baseline from which to update the Court on implementation of the OBMP.

## PROGRAM ELEMENT 1 – DEVELOP AND IMPLEMENT COMPREHENSIVE MONITORING PROGRAM

### Groundwater Level Monitoring

Watermaster has three active groundwater level monitoring programs operating in the Chino Basin – a semiannual Basinwide program, and two semimonthly programs associated with the Chino-I and Chino-II desalter well fields. A fourth water-level monitoring program associated with land-surface monitoring (see Land Surface Monitoring below) is currently being designed and implemented in Management Zone 1.

**Semiannual Water-Level Monitoring Program.** Watermaster initiated the semiannual Basinwide groundwater-level monitoring program in 1999. The Fall 2002 round of testing began in October and will be completed in December 2002.



**Chino I and Chino II Desalter Well Field Monitoring Programs.** Watermaster staff continued to collect groundwater level data at about 250 wells twice per month in and around the Chino-I and Chino-II Desalter well fields during this reporting period.

**Application for the Local Groundwater Assistance Fund.** Watermaster filed an application for \$250,000 from the Local Groundwater Assistance Fund sponsored by the California Department of Water Resources (DWR). This funding would allow construction of piezometric monitoring wells for measuring Chino Basin groundwater levels in the Prado Flood Control Basin near the Santa Ana River. The wells would inform the Watermaster if OBMP projects are causing groundwater to discharge into the Santa Ana River. The Watermaster is in contact with DWR and awaiting notification.

### **Groundwater-Quality Monitoring**

During Fall 2001 and Spring 2002, Watermaster completed a reduced-scale groundwater quality monitoring survey for wells in the capture zone of the existing and proposed desalter wells. Partial funding was provided through the California State Water Resources Control Board under Section 205(j) of the Federal Clean Water Act, Agreement Number 00-199-250-0. The draft 205(j) Report was submitted to the SWRCB in October 2002.

**Complexity of Quality Conditions, Changing Regulations Prevent Development of Key Well Program.** As reported in the Status Report No. 4, a key well program was not developed for groundwater quality because of the complexity of the water-quality conditions encountered in the basin during the initial round; and the constantly evolving water-quality regulations. Based on information collected during the next three year round of sampling, Watermaster plans to review the development of a key well program.

**Began Three-Year Sampling Program of All Accessible Private Wells.** During this quarter, Watermaster began the first year of another three-year sampling program in which all accessible private wells in the southern portion of Chino Basin will be sampled (about 150 wells per year). Additionally, Watermaster is continuing the cooperative monitoring program described in the Implementation Plan.

### **Extensive Range Of Substances Being Tested**

- All groundwater samples are being analyzed for general mineral and general physical parameters.
- Wells that were not previously sampled and analyzed for constituents that were added to the evolving groundwater quality monitoring program (e.g., hexavalent chromium, silica, barium, etc.) in 1999-2001, are being sampled for those constituents.
- Wells within or near the two Volatile Organic Compound (VOC) plumes are being analyzed for VOCs, in addition to the other parameters.
- All wells are being analyzed for perchlorate due to its widespread presence in the 1999/2001 sampling program.



- Analysis for 1,2,3-trichloropropane has been added to the monitoring program for all wells. This chemical was detected in several wells above 50 parts per trillion (old detection limit).

**New Testing Method Measures Parts Per Trillion of TCP.** In the 2002-03 monitoring program, a new analytical methodology is being used to achieve a detection limit of 5 ppt for 1,2,3-TCP, which is its California Action Level. The wells chosen for the 2002-03 monitoring program are primarily located between the Chino I desalter well field and the Santa Ana River. These wells were prioritized for 2002-03 to aid in the development of a monitoring program to demonstrate hydraulic control in the southern portion of Chino Basin. (See the hydraulic control discussion in Program Elements 6 and 7 below.)

### Groundwater Production Monitoring

**Two New Meter Vendors Retained. All Meters Scheduled for Installation Before July 2003.** The primary activity with regard to production monitoring continues to be the installation of meters on wells operated by members of the Agricultural Pool. Initially, Watermaster counted about 570 active agricultural wells. Watermaster's intention was that 400 of these would eventually have operating meters. The other 170 wells had been forecast to be inactive or destroyed within two years. Review of this assumption was completed during this period and now a total of 420 wells are confirmed for in-line meters. As of October 30, 2002, 256 of these wells are metered and the remaining 164 will be metered by June 30, 2003. To assure completion of the program, two new meter installation vendors were retained during the period.

**All Producing Wells Are Monitored Quarterly.** Watermaster staff reads private wells with meters. A method appropriate to the Chino Basin area is used to estimate production at privately owned wells that do not have meters.

**Need For Water Use Disposal Form To Be Reviewed.** The OBMP Implementation Plan includes a provision that requires the producers to submit a water use and disposal form describing the sources of water used by each producer and how that water is disposed of after each use. The water use and disposal form and reporting has not been implemented, because much of the information that would have been collected using this form is being collected as part of other monitoring activities and analyses. Watermaster anticipates discussions regarding the need for this form after completion of the Dry Year Yield Engineering Analysis and completion of phase 1 of the hydraulic control monitoring program.

### Surface Water Monitoring

**Measure Water Quality and Water Levels In Recharge Basins.** Watermaster conducts a surface water-monitoring program to measure the water quality of water in recharge basins and the water levels in some of these basins. The purpose of this program is to estimate the volume and quality of recharge. This information will be used in subsequent years to estimate the safe yield of the basin and for other management purposes. Watermaster collects water quality samples at all recharge basins every two weeks during the period October through April if and when storm water is stored in these basins. During this quarter, samples were collected at some of the basins that stored storm water



after a storm occurred. Historic results of the water quality sampling indicate good quality water will be present in the basins, but the current sample results will not be analyzed prior to the end of the rainy season (possibly during the next period, but most likely during the following period). Water level measurements will be used as available to estimate the basin recharge rates where none have been previously estimated based on field data.

**Surface Water Monitoring For Santa Ana River To Begin In January 2003.** One of the goals of the OBMP is to maximize Chino Basin yield. One of the key components to maximizing yield is to minimize groundwater discharge to the Santa Ana River and, in some reaches of the River, to maximize recharge of the Santa Ana River into the Chino Basin. Watermaster developed a surface-water monitoring program for the Santa Ana River that, in conjunction with Watermaster groundwater-monitoring programs, will be used to characterize what reaches of the River are gaining water from, or losing water to, the Basin, and to determine if significant discharge of Chino Basin groundwater to the Santa Ana River is occurring. Surface water monitoring for the Santa Ana River is scheduled to begin in the first quarter of 2003. During this period, a draft conceptual monitoring plan involving Inland Empire Utilities Agency, Orange County Water District, the Regional Water Quality Control Board, and the Watermaster was finalized. It is anticipated the plan will be approved by their respective governing bodies early next year. (See Program Elements 6 and 7 below.)

### Land Surface Monitoring

Watermaster staff is developing a multifaceted land-surface monitoring program to develop data that will assist in the development of a long-term management plan for Management Zone 1. The monitoring program consists of three main elements:

1. An aquifer-system monitoring facility located in the southern portion of Management Zone 1 – an area that has experienced concentrated and differential land subsidence and ground fissuring. One major component of the aquifer-system monitoring facility will be multiple-depth piezometers to measure water level and pressure changes at 11 different depths. Installation of the multiple-depth piezometers was completed during this period. Another major component will be a dual borehole extensometer to measure the movement of the aquifer at deep and shallow levels). The Extensometer is anticipated to be installed in May or June of 2003. Together, the two devices will correlate the hydraulic and mechanical responses of the aquifer system to different aquifer- stresses, such as pumping at wells).
2. Synthetic aperture radar interferometry (InSAR) across the entire Chino Basin.
3. Benchmark surveys along selected profiles of Chino Basin have been proposed. The benchmark surveys will (1) establish a datum from which to measure future land surface deformation, (2) evaluate the effectiveness of the long-term management plan, (3) “ground-truth” the InSAR data, and (4) allow determination of historical subsidence at any historical benchmarks that can be recovered. During the current period, the MZ-1 Technical Committee has been reviewing and revising the proposed selected profiles for benchmark surveys.



**Reconnaissance Level Monitoring Underway and Anticipated To Be Complete By April 2003.** The objective of the reconnaissance testing program is to develop data that will assist in the design of the dual borehole extensometer and the design of a comprehensive aquifer-system testing program that will follow completion of the extensometer.

**Progress During This Reporting Period.** The piezometers are installed and recording information, and some aquifer-system testing has begun. The data collected during the initial period will be used to refine the reconnaissance level testing program.

Watermaster staff met with representatives of Chino, Chino Hills and the California Institution for Men regarding installation of equipment by Watermaster to monitor when the wells are turned on and off, the pumping rate etc. This information will be correlated with the impacts detected by the piezometers. The wells were inspected, and the equipment/methods recommended are being discussed.

**Synthetic aperture radar interferometry (InSAR) Program.** Analysis of InSAR data allows for rigorous delineation of zones of concentrated differential subsidence and potential fissuring across the Basin. In fiscal 2002-03, Watermaster is proposing to acquire and analyze Basinwide InSAR data every three months on a go forward basis. No significant activity occurred on this subject during this period.

### **Well Construction, Abandonment and Destruction Monitoring**

Watermaster staff monitors the condition of wells on a regular basis. Wells that may be improperly destroyed or abandoned are reported to Riverside and San Bernardino Counties as they are discovered.

Watermaster staff reviewed its database, identified 107 inactive wells and inspected them; 72 of the wells had been properly abandoned per DWR standards and 35 wells were not properly abandoned. Watermaster staff prepared specific recommendations for each of the 35 wells and will begin work in January 2003 to assure the wells are properly abandoned, in cooperation with the well owners. Following modifications on the 35 wells, Watermaster will furnish an updated list, with details, to Riverside and San Bernardino Counties.



## **PROGRAM ELEMENT 2 – DEVELOP AND IMPLEMENT COMPREHENSIVE RECHARGE PROGRAM**

The recharge element of the OBMP is one of the centerpieces of the OBMP since it is through the enhancement of the recharge capacity of the Basin that water in the Basin that is available for use can be maximized.

### **Recharge of 6,500 Acre-Feet of Supplemental Water in Management Zone 1**

Through the end of November, about 6,000 acre-feet of Supplemental Water had been spread at the Montclair Basins in Management Zone 1. The remaining approximately 500 acre-feet will be spread in December, weather permitting.

### **Bond Funding**

Watermaster made its first bond payment during this period in the amount of \$430,000 as related to its share of the local share funding of the Recharge Facilities Improvement Project.

### **Recharge Facilities Improvement Project Design Status On Nov. 30, 2002**

- **Complete** SCADA system preliminary design report.
- **Dec. 2002** Issue Bid Package No. 1, which includes the Banana, College Heights, Lower Day, RP-3, and Turner No. 1. Facilities. Also order rubber dams.
- **Jan 2003** Issue the second bid package
- **Dec 2003** Watermaster anticipates that construction of the Chino Recharge Basin Facilities Improvement Project will be complete by December 31, 2003.

**Stop work on Etiwanda and San Sevaine Basins 1,2,3 to Maximize Recharge Capability and Prop 13 Funding in Other Areas.** Due to the timing/scheduling challenges associated with the Etiwanda and San Sevaine Basins 1, 2, and 3, the design engineers have been asked to stop work on these basins. These challenges (San Bernardino Kangaroo Rat related), when combined with the fact that there are existing, functional Metropolitan turnouts and facilities at these locations allows staff to focus on development of new capabilities to maximize the development of new recharge capability and the use of Proposition 13 funding.

**Wineville and Jurupa Basins are not planned for further development as recharge facilities at this time due to their poor recharge rates.** The two basins are being suggested for use as environmental enhancement, and Jurupa is still planned as a storage site for water to be moved to the RP-3 spreading basins.



**Agreement on Allocation of Costs and Operations.** After months of meetings, Watermaster, IEUA, CBWCD, and SBCFCD staff reached agreement on the cost sharing and ongoing operations of the recharge facilities during this period, and have committed to submitting a the agreement to their respective governing bodies in December for approval.

### **Recycled Water Recharge.**

**A Management Zone 3 technical committee had been established to address issues regarding recycled water recharge in Management Zone 3.** Representatives participating on the Committee are from Jurupa Community Services District, Inland Empire Utilities Agency, Watermaster, Fontana Water Company, Ontario and Western Municipal Water District. In addition, IEUA and JCSD executed an MOU regarding the recycled water recharge that resolved their concerns, and several of the concerns expressed by the Western Representative are anticipated to be resolved both by the maximum benefit demonstration being prepared and submitted to the RWQCB and through the MZ3 committee.

### **Santa Ana River Fully Appropriated Stream (FAS) Petition and Application.**

During this reporting period, the State Water Resources Control Board assigned Watermaster's Application number A031369 and has begun the processing of the Application. Watermaster expects the Application to be officially noticed soon. Since all of the activities described in Application A031369 are activities contained within the Recharge Master Plan, Watermaster submitted the CEQA Findings of Consistency to the OBMP PEIR for the Recharge Master Plan for the environmental portion of the Application. Watermaster believes that no additional CEQA compliance is required for the Application.



**PROGRAM ELEMENT 3 –  
DEVELOP AND IMPLEMENT WATER SUPPLY PLAN FOR THE IMPAIRED AREAS OF  
THE BASIN; AND**

**PROGRAM ELEMENT 5 –  
DEVELOP AND IMPLEMENT REGIONAL SUPPLEMENTAL WATER PROGRAM**

These program elements focus on the shift of production in the Southern end of the basin away from agricultural uses toward urban uses. Without the OBMP, this land use conversion would have resulted in a decrease in production in the Southern end of the basin, which would ultimately have led to rising water levels. If groundwater levels in the Southern end of the basin rise too high, then water may “spill” out of the Basin and into the Santa Ana River. Such uncontrolled spillage could reduce the overall Safe Yield of the basin and must be managed by optimization.

Directly tied to the threat of rising water levels in the southern area, is the impaired ability of producers in the Southern end of the basin to pump water due to water quality concerns. The ability to compensate for the loss of agricultural production with increased appropriative production is inhibited because of water quality concerns about the water in this part of the basin. Production in this area thus requires significant water treatment capabilities. This issue is addressed through the construction of desalter facilities.

**Status Report on Desalters**

In May 2001, the first Chino Basin desalter was completed by the Santa Ana Watershed Project Authority (SAWPA). This desalter was built to have a capacity of up to eight million gallons per day.

In 2000, California voters passed Proposition 13 (the Water Bond) that included significant funding opportunities to construct additional desalters in the Chino Basin. In order to take best advantage of this funding opportunity, a joint powers agency now known as the Chino Basin Desalter Authority (CBDA) was formed to purchase the Chino I Desalter from SAWPA and to construct and operate the Chino I Expansion and Chino II Desalters. The formation of this entity has been described in great detail to the Court in previous progress reports.

**The Chino I Desalter Expansion Project.** This includes construction of 4.9 million gallons per day (mgd) of expanded treatment capacity (nitrate removal) in parallel with the existing treatment facilities, as well as associated raw water and product water delivery facilities. The Chino I Desalter was originally constructed by SAWPA to provide a total of 9,200 acre-feet per year of product water deliveries. The expansion project aims to provide an additional 5,000 acre-feet per year of water deliveries. The product water will have a TDS and nitrate concentrations of 350 mg/L and 25 mg/L, respectively. The CDA authorized the drilling and awarded a contract for the Chino I Desalter Expansion wells.



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**The Chino II Desalter Project.** This includes 10 mgd of new treatment capacity, as well as raw water and product water delivery facilities, in order to provide 10,400 acre-feet per year of water deliveries at the 350 mg/L TDS and 25 mg/L nitrate quality requirements.

Watermaster staff has been involved in preliminary review of the treatment plant and raw/product water delivery facilities design documents and is anticipating more thorough review now that the final reports are complete. Watermaster staff remains active in review and coordination of projects within the Chino Basin.



## **PROGRAM ELEMENT 4 – DEVELOP AND IMPLEMENT COMPREHENSIVE GROUNDWATER MANAGEMENT PLAN FOR MANAGEMENT ZONE 1**

Program Element 4 of the OBMP expressly states that “[t]he occurrence of subsidence and fissuring in Management Zone 1 is not acceptable and should be reduced to tolerable levels or abated.” Moreover, Program Element 4 details the steps to be taken by Watermaster in fulfillment of these management objectives.

### **Chino Basin Watermaster MZ-1 Interim Plan**

On October 17, 2002 the Court approved Watermaster's Interim Plan for the Management of Subsidence in MZ1 and directed Watermaster to implement the monitoring program described in the Interim Plan, to form and begin work with the Technical Group described by the Interim Plan, and to report back to the Court on the ongoing progress of implementation of the Interim Plan. The Court also recommended that a follow-up workshop be scheduled with the Special Referee on July 17, 2003.

**The Cities of Chino and Chino Hills volunteered to participate in the forbearance portion of the Interim Plan.** Watermaster staff recently evaluated the production reduction capability of the wells turned off by the two cities on October 1, and concluded that the 3,000 acre-foot goal can be accomplished if these wells remain off through the entire nine month period, or if other wells are turned off in the event that the original wells must be turned on. The wells were selected from the Interim Plan Exhibit C wells filed with the Court on June 17, 2002.

**MZ1 Technical Committee.** The MZ1 Technical Committee was formed and met the first time during the prior reporting period. Although two meetings were scheduled during the current reporting period, they were not held due to unavoidable last minute conflicts. Committee representatives were however informed of the status of the efforts to implement the interim plan including: piezometer installation, the participation in the forbearance portion of the Interim Plan, and the efforts to meet with Chino, Chino Hills and CIM representatives (below) during the meetings held for the regular Watermaster Committee process. A date has been selected in the second week of January for the next meeting and staff is currently working to place this on the representative calendars.

**Meetings occurred during this period with the Cities of Chino and Chino Hills, and with the California Institution for Men regarding the use of their wells to participate in a aquifer-system monitoring and testing program (See Program Element 1 – Land Surface Monitoring).** The wells of these entities have been inspected, an initial recommendation regarding the equipment/method of monitoring production for each well has been developed, some monitoring equipment has been installed or ordered, and discussion is occurring regarding options for the more challenging circumstances where monitoring is not as easy due to wellhead configuration. It is anticipated all monitoring equipment will be ordered and the methods of monitoring will be finalized by December 31, 2002.

Other ongoing monitoring efforts under the Interim Plan are reported above under the Land Surface Monitoring section of Program Element 1 (see page 5, above).



**There have been no observed impacts of volunteer participation in the Interim Plan.**

Installation of the monitoring equipment is not complete, but should be by the end of January 2003. Logic leads one to expect that reducing production in the area will not exacerbate the problem of subsidence and fissuring, and may help reduce the potential for its occurrence to the extent it is production related.

**Watermaster is not aware at this time of other legal actions pending that would cause the issue of the Court's jurisdiction to resurface.** In its October 17, 2002 Order, the Court ordered Watermaster to keep the Court apprised of any other legal actions that could cause the question of the Court's jurisdiction over subsidence to arise. Watermaster is actively monitoring the ongoing litigation between the Cities of Chino Hills and Chino, and does not believe that this litigation will cause the jurisdiction issue to resurface.



**PROGRAM ELEMENT 6 –  
DEVELOP AND IMPLEMENT COOPERATIVE PROGRAMS WITH THE REGIONAL  
WATER QUALITY CONTROL BOARD, SANTA ANA REGION (REGIONAL BOARD)  
AND OTHER AGENCIES TO IMPROVE BASIN MANAGEMENT; AND**

**PROGRAM ELEMENT 7 –  
DEVELOP AND IMPLEMENT SALT MANAGEMENT PROGRAM**

Cooperative Programs with Regional Board and other Entities. The “water quality committee” as envisioned in the OBMP Implementation Plan has not been formally constituted. Since the development of the OBMP, Watermaster has worked closely with the Regional Water Quality Control Board, the Department of Toxic Substances and Control, and others to define water quality challenges and to refine the water quality management criteria in the Chino Basin.

Water Quality Management. In response to the results of Regional Board and Watermaster’s groundwater-quality monitoring programs (Program Element 1) Watermaster has refined its water quality monitoring to identify and characterize water-quality anomalies such as the VOC anomaly north of the Chino I Desalter well field. Watermaster staff is participating in the process to develop TMDL’s for Reach 3 of the Santa Ana River and other water bodies in the lower Chino Basin. Watermaster staff is coordinating with the Regional Water Quality Control Board with regard to surface water quality and the Department of Toxic Substances Control with regarding to developing a monitoring program to track perchlorate in groundwater in the Glen Avon area.

**Watermaster and Regional Board Propose TDS and Nitrogen Objectives to Promote Maximum Benefit of Waters Available to the Chino Basin**

Watermaster staff has been working with the TIN/TDS Task Force to revise the subbasin boundaries, and the TIN and TDS objectives for the Chino Basin to promote maximum beneficial use of waters in the basin (as opposed to the Regional Board’s current, more rigid antidegradation based objectives). The maximum beneficial use approach will increase water supplies and lower costs over time while meeting water quality requirements. In December 2002, Watermaster proposed specific subbasin boundaries, and TIN and TDS objectives for the Chino Basin to the RWQCB at a workshop regarding the Basin Plan update. The TIN/TDS Task Force and the Regional Water Board have reacted favorably to the Watermaster proposal, have modified it slightly, and it is Watermaster’s belief that the modified Watermaster proposal will be included in the Basin Plan update that will occur in 2003.

**Cooperative Effort to Determine State of Hydraulic Control.** One outstanding issue to resolve regarding the Basin Plan changes is to develop a monitoring plan to evaluate the state of hydraulic control in the southern end of the basin. Hydraulic control is one tool that can be used to maximize the safe yield of the basin. Watermaster staff developed a monitoring program for OBMP purposes and described this effort in the Initial State of the Basin report (October 2002). The execution of this monitoring program is included in Program Element 1. OCWD and the Regional Board are very interested in the hydraulic control management concept as a means to protect the water quality of the Santa Ana River. Hydraulic control will become a commitment of Watermaster if the proposed



subbasin boundaries, and TIN and TDS objectives for the Chino Basin, are adopted. Watermaster, OCWD and Regional Board staffs are working to develop a monitoring program to assess the state of hydraulic control and to provide information to Watermaster to manage future production and recharge. The initial phase of the monitoring program should be initiated this fiscal year and completed by June 30, 2003. This program will change or adapt over time as new information is developed and will last for several years. The coordination and review of the hydraulic control monitoring data and the development of management programs to maintain hydraulic control have been added to Program Element 6 and 7.

### **Salt Budget Tool Is Currently Being Used To Establish TDS Objectives**

Watermaster has developed a salt budget tool to estimate the current and future salt loads to the Basin and the salt benefits of the OBMP. This tool is currently being used to establish TDS objectives for the northern part of the Basin based on maximum beneficial use of water available to the region. These projections are based on the water supply plan in the Implementation Plan and include alternative recycled water and state project water recharge scenarios. Watermaster consultants are currently preparing a letter report describing the salt budget and how it will benefit the Chino Basin. This letter will be submitted to Watermaster for consideration by the parties by December 31, 2002.



**PROGRAM ELEMENT 8 – DEVELOP AND IMPLEMENT GROUNDWATER STORAGE MANAGEMENT PROGRAM; AND**

**PROGRAM ELEMENT 9 – DEVELOP AND IMPLEMENT STORAGE AND RECOVERY PROGRAM**

This section summarizes the work accomplished to date and the work planned over the next few months for the Chino Basin Dry Year Yield Program (DYY). The DYY Program is a conjunctive use program between the Metropolitan Water District of Southern California (Metropolitan) and several Basin appropriators, which would develop a maximum of 100,000 AF of storage. This Program also explores the potential for using up to 500,000 AF of safe storage capacity.

**CEQA Coordination.** Inland Empire presented the CEQA Findings of Consistency to its Board for certification in December 2002.

**Finalize Storage and Recovery Scenarios.** Agency water supply plan modifications during put and take years were finalized. The estimated shifts between groundwater and imported supplies were identified, and development of the facilities required for the DYY Program was initiated.

**Confirm Locations of Dry Year Yield Facilities.** Final verification of the DYY facilities and their locations was made during this period.

**Develop Preliminary Design Report.** Preliminary facility layout drawings showing pipe alignments, treatment facility locations, and connections to the NRW line were developed. Also, preliminary layout drawings of each treatment facility were developed. Development of an operations and implementation plan was initiated during this period.

**Groundwater Modeling.** Groundwater modeling will be completed during this period and a report describing the results will be prepared.

**DYY Shift Obligation and Funding Approach.** Each appropriator participating in the project will reduce imported water usage by a predetermined amount during a dry year. Watermaster and B&V are currently working with the appropriators to determine this maximum potential *shift obligation*.

In addition, Watermaster and B&V are developing several methods for allocating the Metropolitan funds to each of the participating appropriators for financial assistance in constructing their proposed DYY facilities.



## Background On Operational Storage, Safe Storage and Safe Storage Capacity

**Definitions.** Operational storage and safe storage are terms that were defined in the OBMP Phase 1 report and the OBMP Implementation Plan.

Operational storage requirement is the storage or volume in the Chino Basin that is necessary to maintain safe yields.

Safe storage is an estimate of the maximum storage in the Basin that will not cause significant water quality and high groundwater-related problems.

A third term, safe storage capacity, can be developed from the above two terms to set the upper bound on the unused storage capacity that can be allocated to a storage and recovery program. The safe storage capacity is the difference between safe storage and operational storage requirement and is the storage that could be safely used by producers and Watermaster for storage programs. Currently, Watermaster is assuming the safe storage capacity is about 500,000 acre-feet. The allocation and use of storage in excess of safe storage will presumptively require mitigation, that is, mitigation must be defined and resources committed to mitigation prior to allocation and use. Watermaster will develop estimates of the operational storage requirement and safe storage as defined in the OBMP Implementation Plan before June 30, 2003.

## CONCLUSION

Watermaster continues with the rapid pace of implementation of the OBMP. Even in the short two month reporting period covered by this Status Report No. 5, many important implementation activities have occurred. Watermaster looks forward to continuing this trend in order to further optimize the Chino Basin resource.