

TWENTIETH
ANNUAL
REPORT
OF THE
CHINO BASIN WATERMASTER

Fiscal Year
1996-1997

Case No RCV 51010
Chino Basin Municipal Water District
v.
City of Chino et al

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TWENTIETH ANNUAL REPORT OF THE CHINO BASIN WATERMASTER

The Chino Basin Watermaster was established under a Judgment entered in the Superior Court of the State of California for the County of San Bernardino, entitled "Chino Basin Municipal Water District v. City of Chino, et al.," (originally Case No. SCV 164327, the file was transferred in August, 1989, by order of the Court and assigned new Case No. RCV 51010). The Honorable Judge Howard B. Wiener signed the Judgment on January 27, 1978. The effective date of this Judgment for accounting and operations was July 1, 1977.

The Twentieth Annual Report presents a summary of the Watermaster process including the Pool Committees, the Watermaster Advisory Committee and Watermaster activities, and an accounting of production for fiscal year 1996-97.

I. INTRODUCTION

Beginning in the early 1970's and continuing for several years, several studies and discussions were conducted among concerned water producers. In 1974 these studies and discussions resulted in the passage of a "Memorandum of Agreement on the Chino Basin Plan". In January 1975, Senator Ruben S. Ayala introduced SB 222 (Senate Bill 222) in the California Legislature. This bill authorized a production assessment levy of \$2.00 per acre-foot per year, for a period of three years. The funds were utilized to finance the final effort to draw up a management plan. This effort included conducting essential studies and negotiations to implement a water management program for the Chino Groundwater Basin.

SB 222 was renumbered as a part of the Municipal Water District Law at Section 74120 of the Water Code. It was approved by Governor Ronald Reagan and filed with the Secretary of State on June 28, 1975. Engineering, legal and other working sub-committees were formed to analyze and define specific problem areas. Socio-economic, safe yield and other studies were conducted to provide the information necessary to reach an agreement regarding the allocation of producer water rights. Cost savings were achieved by terminating many of the studies as soon as the necessary information was compiled in draft form.

Three groups represented the majority of producer interests. These groups became active early in the negotiations under SB 222. Eventually, the groups formalized into pool committees and became known as the following:

- Overlying (Agricultural) Pool representing dairymen and farmers (including minimal producers) and the State of California.

- Overlying (Non-Agricultural) Pool representing industries.
- Appropriative Pool representing cities, water districts and water companies.

Representatives of the three pools committees, acting together, became known as the Watermaster "Advisory Committee." The Advisory Committee was established as the policy setting body and charged with the oversight of Watermaster's discretionary activities. Members of each of the three pool committees met regularly to transact the business concerns of its respective producers. Decisions affecting more than one pool were acted upon by each pool committee and recommendations were then forwarded to the Watermaster Advisory Committee.

The Judgment establishes a method to determine the voting power of each of the producers on the pool committees. The method is based on a formula of assessments paid by the producers in the prior year and on their allocated safe yield.

Approximately 5 percent of the Chino Groundwater Basin is located in Los Angeles County, which is included in the TVMWD (Three Valleys Municipal Water District) service area. Approximately 15 percent of the basin is in Riverside County, which is included in the WMWD (Western Municipal Water District) service area. Approximately 80 percent of the basin is located in the west-end of San Bernardino County, which is included in the CBMWD (Chino Basin Municipal Water District) service area. All three of these municipal water districts, who were also provided the opportunity to participate in the initial negotiations, along with the CBWCD (Chino Basin Water Conservation District), became known as Non-Producer water districts because of their overlying service areas.

Current and historical annual production information for each pool is provided in Appendix B.

II. WATERMASTER BOARD

The fiscal year 1996-97 Chino Basin Watermaster Board members and elected officers were:

John L. Anderson	Chairman
George Borba	Vice-Chairman
Terry Catlin*	Secretary/Treasurer
Anne W. Dunihue	Member
Wyatt L. Troxel	Member

**Bill Hill was appointed in 1990 and served until December 18, 1996. Terry Catlin took the oath of office at a regularly scheduled CBMWD Board meeting held on the same date. Wyatt Troxel began his 2nd term on this date.*

On November 6, 1996, the Watermaster Board adopted Resolution 96-6 entitled "Resolution of the Chino Basin Watermaster Establishing Time and Place of Regular Meetings." As a result, regular Watermaster meetings are to be held the first Thursday in the months of March, June, September and December (for full text, see Appendix L). Although the resolution changed the location of the Watermaster business office to 8632 Archibald Avenue, Suite 109, Rancho Cucamonga, meetings continued to be held in the CBMWD Board room during FY 1996-97. Special meetings were noticed as required.

During fiscal year 1996-97, four regular meetings were held as follows:

JULY 10, 1996
NOVEMBER 06, 1996
MARCH 13, 1997
JUNE 05, 1997

Additionally, four special meetings were held during fiscal year 1996-97 as follows:

JANUARY 09, 1997
JANUARY 14, 1997
JANUARY 23, 1997
FEBRUARY 27, 1997

The process of appointing a new Watermaster Board began in fiscal year 1995-96 and continued into fiscal year 1996-97. The Nineteenth Annual Report summarizes the beginning of this process. By fiscal year end, a meet & confer among all the interested parties was scheduled for July 29, 1996.

July 29, 1996, was the first of two meet & confers, held at the City of Chino Council Chambers. Although there was much discussion on that date, the only substantive decision made was to hold an additional meet & confer on August 28, 1996.

As a result of the second meet & confer, a three-member Watermaster Board proposal was submitted to the Court for hearing on September 18, 1996. As of the Court hearing date, only two of the three municipal water districts invited to participate on the proposed three-member Watermaster Board had responded affirmatively. CBMWD was expected to agree to participate after consideration at their October board meeting and the Court continued the motion until November 20, 1996. CBMWD did not take action to participate on the three-member Watermaster Board as anticipated and the motion was taken off calendar in November of 1996. Four additional workshops were held during late 1996 and into the early months of 1997. As a result, the original nine-member Watermaster Board proposal was modified and approved by the Watermaster Advisory Committee on January 30, 1997, by a majority vote of 67.99 percent.

On March 11, 1997, the new motion to appoint a nine-member Watermaster Board was heard by the Honorable Judge J. Michael Gunn. On April 29, 1997, Judge Gunn issued a ruling which:

- Appointed Anne J. Schneider as special referee to make a recommendation to the Court regarding the issues raised by the motions.
- Ordered CBMWD, the Advisory Committee and the DWR (Department of Water Resources) to negotiate terms for the DWR to serve as Interim Watermaster.
- Granted a motion submitted on March 6, 1997, by the law firm of Cihigoyenette, Grossberg & Clouse, general counsel for CBMWD, to disqualify Watermaster Counsel. (See Appendix P-8.)

Negotiations began among the parties through Special Counsel to the Watermaster Advisory Committee, James L. Markman, CBMWD Counsel, Jean Cihigoyenette, and the attorneys for the DWR.

Anne Schneider accepted the Court's appointment to become a Special Referee and began the process necessary to make a recommendation to the Court. No substantial decisions were reached by fiscal year end and the matter continued into fiscal year 1997-98.

Detailed information with regard to the activities to appoint a new Watermaster Board is on file at the Watermaster business office and will be provided upon request.

III. ADVISORY AND POOL COMMITTEES

A. Overlying (Agricultural) Pool

Each year, an annual election is held to nominate members and officers to serve on the Overlying (Agricultural) Pool Committee for the next fiscal year. On October 16, 1996, the Committee approved changing the annual meeting date to July to coincide with the fiscal year. As a result, the following individuals, who were originally elected on March 27, 1996, remained in office during fiscal year 1996-97:

Chairman	Robert DeBerard
Vice-Chairman	Jeff Pierson
Secretary	Traci Stewart, Chief of Watermaster Services
*Treasurer	Alice W. Lichti, Interim Controller

**Ms. Lichti was appointed Treasurer on July 10, 1996, replacing Larry Rudder, CFO for CBMWD.*

The members designated to administer the pool committee's activities and serve as representatives on the Watermaster Advisory Committee during fiscal year 1996-97, are shown in Appendix A-1. It has become the practice of the pool committee to designate regular and

alternate members as pool representatives in order to insure a quorum for the Overlying (Agricultural) Pool meetings.

In June of 1997, Roger Larkin, the State's representative from California Institute for Men, retired. He was succeeded by Rick Buffington.

During fiscal year 1996-97, four regular meetings and four special meetings were held, to act on matters affecting the members of this pool and to discuss actions to be forwarded by the Watermaster Advisory Committee to the Watermaster Board. Regular meetings were scheduled to allow the Overlying (Agricultural) and Appropriative Pool to meet on the same day. By action taken in June of 1988, any Overlying (Agricultural) Pool Committee member attending an Appropriative Pool meeting is compensated for attendance.

B. Overlying (Non-Agricultural) Pool

Each year, an annual election is held to nominate officers to serve on the Overlying (Non-Agricultural) Pool Committee for the next fiscal year. On October 15, 1996, the Committee approved changing the annual meeting date to July to coincide with the fiscal year. As a result, the following individuals, who were originally elected on March 27, 1996, remained in office during fiscal year 1996-97:

Chairman	Rick Darnell, Southern California Edison Company
Vice-Chairman	Steve Arbelbide, California Steel Industries, Incorporated
Secretary	Traci Stewart, Chief of Watermaster Services
*Treasurer	Alice W. Lichti, Interim Controller

**Ms. Lichti was appointed Treasurer on July 10, 1996, replacing Larry Rudder, CFO for CBMWD.*

Representatives as shown below were designated to serve on the Watermaster Advisory Committee during fiscal year 1996-97. A complete list of member entities and their designated representatives is included as Appendix A-2.

Rick Darnell	Southern California Edison Company
Steve Arbelbide	California Steel Industries, Incorporated
Lee Redmond III	Kaiser Ventures, Incorporated

During fiscal year 1996-97, three regular meetings and one special meeting of the Overlying (Non-Agricultural) Pool were held to act on matters affecting the members of this pool and to discuss actions to be forwarded by the Watermaster Advisory Committee to the Watermaster Board. It has been the practice by members of this pool committee to waive compensation for meeting attendance.

C. Appropriative Pool

Each year, an annual election is held to nominate officers to serve on the Appropriative Pool Committee for the next fiscal year. On October 16, 1996, the Committee approved changing the annual meeting date to July to coincide with the fiscal year. As a result, the following individuals, who were originally elected on March 27, 1996 remained in office during fiscal year 1996-97:

Chairman	Edwin James, Jurupa Community Services District
Vice-Chairman	P. Joseph Grindstaff, Monte Vista Water District
Secretary	Traci Stewart, Chief of Watermaster Services
*Treasurer	Alice W. Lichti, Interim Controller

**Ms. Lichti was appointed Treasurer on July 10, 1996, replacing Larry Rudder, CFO for CBMWD.*

During fiscal year 1996-97, four regular meetings and two special meetings of the Appropriative Pool were held to act on matters affecting the members of this pool and to discuss actions to be forwarded by the Watermaster Advisory Committee to the Watermaster Board. A complete list of member entities and their designated representatives is included as Appendix A-3.

D. Advisory Committee

On October 16, 1996, the Watermaster Advisory Committee approved changing the annual meeting date to August to coincide with the fiscal year. As a result, the following individuals who were originally elected on March 27, 1996, remained in office during fiscal year 1996-97:

Chairman	P. Joseph Grindstaff, Monte Vista Water District
1st Vice-Chairman	Edwin James, Jurupa Community Services District
2nd Vice-Chairman	Robert DeLoach, Cucamonga County Water District
Secretary	Traci Stewart, Chief of Watermaster Services
*Treasurer	Alice W. Lichti, Interim Controller

**Ms. Lichti was appointed Treasurer on July 10, 1996, replacing Larry Rudder, CFO for CBMWD.*

A complete list of Watermaster Advisory Committee members is included as Appendix A-4.

At the October 16, 1996 meeting, the committee approved a motion to return to a rotation of pool committee chairmen to serve as officers on the Watermaster Advisory Committee. The rotation of Chairman was scheduled to become effective after the annual pool elections scheduled in July at the beginning of fiscal year 1997-98.

During fiscal year 1996-97, four regular meetings and nine special meetings of the Advisory Committee were held to act on matters affecting the pools and to discuss actions to be forwarded by the Watermaster Advisory Committee to the Watermaster Board.

E. Special Ad Hoc Committees and Workshops

During fiscal year 1996-97, 28 special ad hoc meetings or workshops were held as indicated below:

- Seven separate or combined committee meetings to address multiple topics (including some of those listed below).
- Two meet & confers to discuss the appointment of a new Watermaster Board.
- Four meetings to discuss financial matters.
- Eleven meetings to discuss storage limits and/or the 85/15 rule.
- Three workshops to discuss the proposed budget for fiscal year 1997-98.
- One workshop, at the request of Monte Vista Water District, regarding a Western Water Company proposal.

Information regarding all committee meetings and/or special ad-hoc meetings and workshops is available and may be reviewed by any interested party by contacting the Watermaster business office, at 8632 Archibald Avenue, Suite 109, Rancho Cucamonga, CA 91730. Requests must be in writing and are accepted via regular mail or facsimile.

IV. ADMINISTRATION OF THE JUDGMENT

A. Watermaster Insurance Coverage

Chino Basin Watermaster insurance coverage was originally secured in August 1978 with Chino Basin Watermaster as an additional insured under CBMWD's policy. This continued until it was due to expire during the fiscal year, and effective September 30, 1996, separate insurance was secured as part of the Watermaster transition activities.

B. Unqualified Audit Opinion and Annual Audit Report

The Annual Audit is normally performed immediately after the fiscal year end. However, during fiscal year 1996-97, selection of a firm to perform the annual audit was delayed because of a pending motion before the Court. On April 29, 1997, Judge Gunn issued a ruling that if the DWR did not become the Interim Watermaster by July 1, 1997, the proposed expanded audit would be approved by the Court. Subsequent to the close of the fiscal year, the firm of Conrad & Associates, LLP was selected to perform the audit. It was performed during December of 1997, and is included as Appendix N.

C. Engineering Services

During fiscal year 1996-97, engineering services were continued through Mark J. Wildermuth, Water Resources Engineer, for projects within the Chino Basin. Projects were also undertaken in conjunction with the CBWCD in regard to surface water quality and recharge capabilities. They are discussed separately under the special project portion of this annual report. (See also, Engineering Appendix O.)

D. Legal Services

During fiscal year 1996-97, Watermaster general counsel services were initially provided by the firm of Nossaman, Guthner, Knox and Elliott, LLP. As part of the ongoing transition to a new Watermaster, the motion by CBMWD to disqualify the Watermaster general counsel was granted on April 29, 1997. As a result, the firm of Markman, Arczynski, Curley and Slough was retained as Special Counsel to the Watermaster Advisory Committee. Additionally, the firm of Reid and Hellyer continued to provide services to the Overlying (Agricultural) Pool Committee with regard to the motions before the Court.

E. Assessments

The Judgment provides separate and distinct replenishment assessment formulas for each of the three pools. The administrative assessment formula for each pool is determined on a per acre-foot basis, for each acre-foot of water produced by that pool. Costs per acre-foot vary among the pools in accordance with their respective total budgeted amounts for pool administration and total production during the previous fiscal year.

During fiscal year 1996-97, a production over reporting error was discovered for groundwater production in fiscal year 1995-96 at the County of San Bernardino Prado Olympic Shooting Range/Oranco Bowmen recreational facility. This error was discovered subsequent to the initial adoption of the Fiscal Year 1996-97 Assessment Package and Rate Resolution. The County was ultimately assessed for the correct production based on the adopted rate and the committees agreed that any credit or underpayment assessed for any basin producer as a result of this error would be accounted for in the Fiscal Year 1997-98 Assessment Package.

Costs to replace any water extracted in excess of each respective pool's share of operating safe yield are recovered by the application of the following replenishment assessment formulas:

1. Overlying (Agricultural) Pool

The Overlying (Agricultural) Pool pays assessments on a gross basis, such that the total cost of the replenishment water plus the estimated spreading costs are divided equally on each acre-foot of water produced during the previous production year. One member of this pool, Los Serranos Country Club, was also assigned to the Appropriative Pool under the Judgment. Under this special assignment, Los Serranos is assessed as an appropriator on the portion of its production (65%) that serves an area outside the Chino Groundwater Basin's adjudicated boundary. Los Serranos pays a 100% net replenishment assessment on this portion of its production.

By action taken at the Appropriative Pool Committee meeting on June 7, 1988, the Appropriative Pool assumes the administrative and special project costs of the Overlying (Agricultural) Pool. In exchange, it was agreed to accelerate the reallocation or transfer of all unpumped agricultural water to the Appropriative Pool from once every five years to each fiscal year. This became effective following the fiscal year 1987-88 and for each fiscal year thereafter.

The total administrative and special projects assessment levied against the Overlying (Agricultural) Pool for fiscal year 1996-97, was \$547,127. The Appropriative Pool members were assessed \$19.69620 per acre-foot for each acre-foot of water reallocated to them. This was calculated as \$547,127 divided by the total number of acre-feet to be reallocated during the fiscal year (or 27,778.300 acre-feet).

Reported production from the pool declined from 96,567 acre-feet in fiscal year 1974-75, to 83,934 acre-feet in fiscal year 1977-78. The Committee decided in fiscal year 1978-79 to purchase and place 2,000 acre-feet of replenishment water in a local storage account. This was done to provide for a potential increase in production during the balance of the initial five-year period. However, because production of the Overlying (Agricultural) Pool continued to decline, the pool members decided during fiscal year 1987-88 to sell the water they had placed in storage. Revenue from the sale was placed in a restricted, interest earning account for future use by the Overlying (Agricultural) Pool. Through June 30, 1997, proceeds from the sale, including interest earned, totaled \$409,249.

2. The Overlying (Non-Agricultural) Pool

Assessments for this pool are based on a net replenishment formula. This formula applies the current cost of replenishment water plus the estimated spreading

costs to each acre-foot of water produced in excess of a producer's share of operating safe yield.

The fiscal year 1996-97 budgeted administrative and special projects assessment for the Overlying (Non-Agricultural) Pool was calculated at \$7.5465 per acre-foot. Replenishment costs were assessed in the amount of \$233.15 per acre-foot (\$229 plus \$4.15 per acre-foot of spreading costs) on each acre-foot of production in excess of each producer's share of the operating safe yield.

3. The Appropriative Pool

In the Appropriative Pool, the following members pay replenishment assessments on a net basis, which includes the current cost of replenishment water plus the estimated cost of spreading. In fiscal year 1996-97, these costs were \$233.15 per acre-foot of water produced (as indicated above):

- Arrowhead Mountain Spring Water Company
- Los Serranos Country Club (65% of total production)
- Marygold Mutual Water Company
- City of Pomona
- Pyrite Canyon Group
- San Bernardino County, General Services Department

The City of Norco pays replenishment on a net basis for any replenishment obligation in excess of 1,567 acre-feet. Any replenishment necessary by the City of Norco up to the 1,567 acre-feet is assessed under the 85/15 formula discussed below.

The remaining Appropriative Pool members are assessed under the 85/15 formula. This formula assesses the total cost of replenishment water in two ways:

- 15% on a gross basis, uniformly among all producers on each acre-foot produced; and
- 85% on a net basis, on each acre-foot of production over a producer's share of the operating safe yield.

In fiscal year 1996-97, the Appropriative Pool members who participated in the 85/15 formula were assessed \$4.89 per acre-foot for the gross 15% assessment and \$198.18 per acre-foot for the 85% net assessment, respectively. In addition, each producer was assessed \$3.68 per acre-foot to cover the budgeted administrative and special project costs for the pool.

F. Fiscal Year 1997-98 Watermaster Budget

A summary of the Fiscal Year 1997-98 Watermaster Budget is included in Appendix C. The budget was ratified by the Watermaster Board on September 4, 1997.

G. Special Projects

Special projects are initiated by separate work orders (either verbal or written) as a result of items of interest being addressed through the Watermaster process. Special projects are defined as projects to be undertaken for other than general administration of the Judgment. Additional special project work orders are designated and budgeted as required to carry out the basin management plan. The following new or existing special projects described below were approved during fiscal year 1996-97.

1. The Well Inspection and Meter Installation Project

This project was initiated in 1978, to provide a service to those parties under the Judgment who are required to purchase and install meters in order to accurately report well production. A renewed effort to carry out this as part of the Judgment, began in 1992. Since that time, approximately 650 wells have been located and inspected. Following the field inspections, Watermaster staff made a recommendation regarding the type and placement of meters for each well. The choices were either kilowatt hour, hour, or in-line flow meters. Wells either had meters installed or data was being accumulated through a kilowatt hour meter. Additionally, 250 wells in an inactive or abandoned status were also inspected during the project. The purpose of this project is to insure that all wells with an annual production of 10 acre-feet or greater are equipped with an operational and accurate measuring device.

To improve the accuracy of the reported production, the project also provided for plumbing modifications, repair of previously installed, non-functioning in-line flow meters, and installation of meters on previously unmetered wells. Each well inspection report is on file by well number at the Watermaster business office.

2. The Meter Testing and Calibration Program

The Judgment, Paragraph 21, Measuring Devices and Paragraph 54, Administrative Expense, is intended to cause the testing and calibration of every propeller type meter in the Chino Groundwater Basin at least once every two years in an effort to obtain more accurate production readings from each well. In 1992, Paragraph 3.07.1 was added to the Watermaster Rules and Regulations in order to require testing and

calibration of other meter types, such as kilowatt- hour or hour meters, on an annual basis.

3. The Groundwater Monitoring Program

This project is comprised of two primary tasks. Task 1 is the portion of the program necessary to collect groundwater quality samples and water levels, and to extract data from the DHS (Department of Health Services) and the RWQCB (Regional Water Quality Control Board) records.

This task represents the majority of Watermaster staff effort for this program. Water quality sample data was collected from over 60 agricultural wells. Water level data was obtained on over 200 agricultural wells. This program allows the agricultural producers to avoid the imposition of individual monitoring requirements by the RWQCB.

Task 2 consists of compiling lab data, checking the data for accuracy and completeness, preparing maps showing TDS, groundwater level and nitrate contours, and preparing the necessary monitoring reports.

An integral part of the Groundwater Monitoring Program is to precisely locate the wells with (GPS) global positioning system equipment. This information is being gathered for over 1,000 wells in the Chino Groundwater Basin. This data fixes the position of each well with longitude and latitude coordinates within an accuracy of two meters. The water quality and water level monitoring data and the GPS well positioning data is entered in an Access database. The data will eventually be used to improve the accuracy of the Chino Basin Integrated Ground and Surface Water Model which was developed as a part of the Chino Basin Water Resources Management Study completed in September of 1995. It will also be useful in other models to be developed. (See also, Engineering Appendix O.)

4. TDS/Nitrogen Study

The purpose of this study, which is being managed by SAWPA (Santa Ana Watershed Project Authority), is to reevaluate the wasteload allocations, the basin plan objectives, and the sub-zones established for the Santa Ana River watershed. In 1994, the RWQCB updated the Basin Plan (Basin Plan for the Santa Ana River Watershed). The allowable reclaimed water use, the surface and groundwater TDS and nitrogen objectives, the groundwater basin and sub-basin boundaries, and the various beneficial

uses that must be protected and preserved are established in the Basin Plan. Following are some of the tasks to be completed in this study:

- Identify the effect on receiving and downstream water quality and quantity from increased reclamation by type of reclamation use.
- Determine the impact from changes in the quality of the receiving water in groundwater basins.
- Compare any proposed water quality changes to the existing legal and institutional arrangements to determine if changes in water quality objectives can be made, and determine if the evidence supports a change.
- Recommend appropriate basin/sub-basin boundaries (based on water quality, manageability and hydrology).
- Identify the impact of changes in objectives on the basins, the river reaches and the on-off river areas.

On March 13, 1997, the Watermaster Board ratified continuing its participation in the Study Phase 1B, at an amount of \$5,100. (See also, Engineering Appendix O.)

5. Chino Basin Recharge Master Plan

In cooperation with the CBWCD, the Chino Basin Recharge Master Plan was approved in 1995. The plan study was conducted by Mark J. Wildermuth, Water Resources Engineer, with participation from Watermaster staff resulting in a draft Phase I report submitted on May 29, 1997. The draft will be completed during the early part of fiscal year 1997-98. The study evaluates local recharge capabilities based on a range of estimated percolation rates and recommends research and engineering studies to be conducted in later phases.

Phase I included an initial screening and assessment to determine the amount of runoff currently recharged and the amount of additional recharge that could occur at new and existing spreading basins. (See also, Engineering Appendix O.)

6. Chino Basin Surface Water Quality Testing Program

On March 13, 1997, the Watermaster Board ratified participation for the second time in a surface water quality testing program. The program was undertaken in cooperation with the CBWCD to collect and analyze surface water quality in the spreading basins. The program consisted of taking a specified number of samples of water in various spreading basins located within the groundwater basin after the occurrence of local rainstorms. The samples were then analyzed for water quality. The lab results have been sent to Mark Wildermuth and will be included in the Recharge Master Plan described above. It is anticipated this program will be cooperatively continued for three to five years and the data will be used in the many studies in which Watermaster is participating. (See also, Engineering Appendix O.)

H. Mailing Lists

Mailing lists of the active parties are updated on a routine basis through the use of the United States Post Office "Address Correction Requested Service," whereby any address change reported to them is forwarded to the Watermaster business office. File changes are made upon receipt of notice from the post office and from other sources of address change. A current listing of active parties is available for review upon request.

I. New Party Interventions

New Party Interventions are accumulated on a regular basis as land ownership changes or new parties begin production. Changes in ownership are most frequently discovered during the production reporting and well inspection processes. New party production is normally discovered when Watermaster staff locates new wells during routine field inspections. Parties whose property no longer has water production facilities are considered inactive and are accounted for as such. During fiscal year 1996-97 two petitions for intervention were received and approved with a recommendation they be forwarded to the Court. The Watermaster Board ratified them on March 13, 1997. However, since the Watermaster Board has been without legal counsel since the April 29, 1997 ruling, the Court did not receive these petitions for intervention or other routine ministerial items, including the Nineteenth Annual Report, prior to fiscal year end. It is anticipated these items will be submitted to the Court during fiscal year 1997-98.

J. Final Order of Condemnation Mutual Water Company of Glen Avon Heights to Jurupa Community Services District

On February 26, 1997, a Final Order of Condemnation (Case No. 292169) was recorded with the Riverside County Superior Court. This order gives the JCSD (Jurupa Community Services District) ownership of certain water system facilities and water rights formerly owned by Glen Avon (Mutual Water Company of Glen Avon Heights). As a result, beginning in fiscal year 1996-97 and thereafter, all of Glen Avon's safe yield rights, agricultural water reallocation and carryover rights, and fiscal year 1996-97 production, were reported as if associated with JCSD for the entire fiscal year. Glen Avon retained their right to 108.204 acre-feet of water in storage effective June 1, 1996. A copy of the order is on file at the Watermaster business office.

K. Redetermination of the Chino Groundwater Basin's Safe Yield

On June 30, 1997, the Chino Basin Watermaster Program closed its twentieth year of operation under the Judgment. Beginning June 30, 1982 redetermination of the Chino Groundwater Basin's safe yield could be considered. There were no changes recommended during the fiscal year. (For full text, See Appendix K.)

The Recharge Master Plan includes an evaluation of the current safe yield of the Chino Basin. As a result, the Appropriate Pool will be asked if it wants to consider a recommendation to change the safe yield in fiscal year 1997-98.

V. RESOURCES MANAGEMENT

A. Quarterly Accounting of Water Production

Producers from all active wells in the Chino Basin are mailed production request forms on a quarterly basis. The Overlying (Agricultural) Pool's quarterly production was compiled from meter readings taken on those wells equipped with water measuring devices. On wells without measuring devices, a water duty method, which relates the acreage of specific crops grown or the number of animals maintained to water use in acre-feet, was used to compute the production for those producers without measuring devices.

B. SBCFCD (San Bernardino County Flood Control District Agreement)

There was very little spreading activity during the fiscal year. The agreement with the SBCFCD expired in June of 1996. The Chief of Watermaster Services sent a written request to extend the existing agreement for an additional five-year term in May and received a proposed new agreement in August of 1996. Verbal comments were subsequently provided. The SBCFCD responded on April 21, 1997, since the Watermaster Board was without general counsel, the agreement had not been renewed as of the close of the fiscal year.

C. San Sevaine Creek Water Project Agreement

During the past two years, the potential impact on the basin's natural recharge from the proposed San Sevaine Creek Water Project caused a considerable amount of concern among Watermaster Committee members. Several meetings were held with SBCFCD regarding the potential impact of channel lining. Concern was raised that the SBCFCD had not made an adequate demonstration that the project would mitigate the loss of storm flow recharge that now occurs through the existing unlined channels. The Watermaster did not oppose the project through the CEQA process, as it was agreed that a study would be conducted to assure that no adverse impacts would occur. Before this study could get fully underway and, during the same period, the Watermaster Board entered into a Memorandum of Understanding with the CBWCD to jointly develop a Chino Basin-Wide Groundwater Recharge Master Plan. As one of its components, the plan included an evaluation of the San Sevaine Creek Project. Pursuant to the agreement with SBCFCD, the San Sevaine portion of the scope of the Chino Basin-Wide Groundwater Recharge Master Plan Study was expanded and was funded separately by Watermaster and the SBCFCD. (See also, Engineering Appendix O.)

D. Cyclic Storage Agreement

Cyclic storage is defined in the Uniform Groundwater Rules and Regulations Paragraph 1.2.2 Cyclic Storage, as the “pre-delivery of replenishment water.” The Cyclic Storage Agreement with Metropolitan Water District (MWD) was extended for an additional period of one year while the pool committees continued workshops regarding storage limits and losses from storage. A copy of the Fifth Amendment to the Cyclic Storage Agreement is included as Appendix M.

E. Stringfellow Acid Pits

During fiscal year 1985-86, each pool committee addressed various mitigation measures in regard to the Stringfellow Acid Pits. The Committees determined the need for a cooperative effort throughout the water industry to deal with contamination problems in the Chino Groundwater Basin. Pursuant to the Watermaster Advisory Committee’s action, the Watermaster Board petitioned the Court to allow the export of a maximum of 300 acre-feet of water annually. The Court approved the petition in November of 1985. During fiscal year 1996-97, 75.9 acre-feet of contaminated wastewater was removed and exported from the site. As of June 30, 1997, 414.800 acre-feet of contaminated water has been exported from the Stringfellow Acid Pits.

F. Chino Basin Desalter

In September of 1996, WMWD filed a MP & A (Memorandum of Points and Authorities) regarding the desalter agreement. The MP & A states that WMWD supports the desalter agreement, however, it contends that the 12,000 acre-feet of replenishment water only offsets current salt and nitrate contributions. Watermaster General Counsel Fudacz was directed to respond to WMWD that while the Watermaster parties did not necessarily agree, they contemplated basin clean-up as the agricultural industry moves out of the area and the demand becomes an urban demand rather than an agricultural demand.

G. Local Water in Storage for Recapture, Sales and Transfers

Total recapture, sales and transfers of water in local storage in the Chino Basin fiscal year 1996-97 were 34,583.204 acre-feet (see Appendix I-1).

H. Transfers or Leases of Water Rights

Water Rights Lease Agreements, negotiated among the Appropriative Pool members during fiscal year 1996-97 totaled 12,965.723 acre-feet (see Appendix I-2).

I. Assignments

Pursuant to the Judgment, Exhibit G, Paragraph 6, Assignment,“ Any appropriator who may, directly or indirectly, undertake to provide water service to such overlying lands may, by an

appropriate agency agreement on a form approved by Watermaster, exercise said overlying right to the extent, but only to the extent necessary to provide water service to said overlying lands.”

During fiscal year 1996-97 the City of Ontario and Sunkist (Sunkist Growers, Incorporated), entered into two assignment agreements. The process to assign 5,966.561 acre-feet from Sunkist’s storage account to the City of Ontario was approved “nunc pro tunc” by the Overlying (Non-Agricultural) and Appropriative Pools on July 23, 1997, based on actual service records from prior years. It was then forwarded to the Advisory

Committee for approval at its first scheduled meeting in fiscal year 1997-98. Copies of service records were provided to the Watermaster staff for verification. Additionally, copies of the service records were available to committee members upon request.

For the past several years, assignments have occurred between JCSD and the following entities:

- City of Norco,
- Mutual Water Company of Glen Avon Heights,
- Mobile Community Management Company for Swan Lake, and
- Santa Ana River Water Company.

The quantities of water assigned in fiscal year 1996-97 are shown in Appendix I-3. Previously, assignments were not recorded in the Annual Report, however they were a part of the Summary of Groundwater Production Report forwarded to the Court each year.

J. Local Storage

1. Storage Limits and Losses from Storage

During fiscal year 1996-97, the pool committees continued to consider establishing storage limits and what losses, if any, should be assigned to local water in storage. Due to the activities and workshops necessary to address transitioning to a new Watermaster, this process continued into the next fiscal year. The Watermaster Advisory Committee capped the amount of water that could be stored effective June 30, 1997 and no new storage accounts were allowed during the year in anticipation of completing this process.

2. Local Storage Agreements

Due to the continuation of the transition process discussed above, there were no new Local Storage Agreements approved during fiscal year 1996-97.

APPENDIX A-1
OVERLYING (AGRICULTURAL) POOL COMMITTEE
FISCAL YEAR 1996-97

<u>Regular Member</u>	<u>Representing</u>
George Borba, Jr.	Dairy Industry
Robert DeBerard*	Grape Grower
Dick Dykstra*	Dairy Industry
Jack Hagerman	State of California
Gene Koopman	Milk Producers Council
Roger Larkin*	State of California
Marilyn Levin, Deputy Attorney General	State of California
Jeff Pierson*	Unitex Management Company
Dana Oldenkamp*	Milk Producers Council
Arlan Van Leeuwen	Dairy Industry
<u>Alternate Member</u>	
Sheila Anderson	State of California
Robert Bridges	State of California
Pete Hall	State of California
Fred Hector	State of California
Anthony Kolath	State of California
Carlos Lozano	State of California
Richard Matamoros	State of California
Bill Mills	Orange County Water District

*Note: *Newly elected members for a two-year term. **Alternate members can replace any pool member that is not present at a Pool or Advisory Committee meeting. During fiscal year 1996-97 it was decided to increase the regular members to ten. Roger Larkin, left in June 1997, and was succeeded by Rick Buffington.*

APPENDIX A-2
OVERLYING (NON-AGRICULTURAL) POOL COMMITTEE
FISCAL YEAR 1996-97

<u>Member</u>	<u>Representative</u>
Ameron	Mark Ward
Angelica Rental Service	Eric Vaughn
California Steel Industries	Steve Arbelbide
Calmat (Conrock)	Scott Wilcott
General Electric Company	Debra Hankins*
Kaiser Ventures, Incorporated	Lee Redmond III*
Mobile Community Management Company for Swan Lake	David Starnes
Praxair	Mike Stenberg
San Bernardino County Department of Airports	Glen Porter
Sunkist Growers, Incorporated	David Cooper
Southern California Edison Company	Rick Darnell*
Space Center Mira Loma	Michael Thies

Note **Alternates:* *GE* *Mark Gage*
 Kaiser *Terry Cook*
 SCE *Vic Barrion*

APPENDIX A-3

**APPROPRIATIVE POOL COMMITTEE
FISCAL YEAR 1996-97**

<u>Member</u>	<u>Representative</u>
Arrowhead Mountain Springs Water Company	David Kubitz
Chino Basin Municipal Water District	Mark Kinsey
Chino, City of	Dave Crosley
Chino Hills, City of	Ron Craig
Cucamonga County Water District	Tom Shollenberger*
Fontana Union Water Company	Gerald Black
Fontana Water Company	Mike McGraw
Jurupa Community Services District	Edwin James
Los Serranos Country Club	Kevin Sullivan
Marygold Mutual Water Company	Bill Stafford
Monte Vista Irrigation Company	Harold Andersen
Monte Vista Water District	P. Joseph Grindstaff
Mutual Water Company Glen Avon Heights	Terri Horn**
Norco, City of	Joe Schenk
Ontario, City of	Mike Teal
Pomona, City of	Robert DeLoach*
Pyrite Canyon Group	Daniel Bergman
San Antonio West End-Water Company	Ray Wellington
Santa Ana River Water Company	Arnold Rodriguez
San Bernardino, County of	Dulcie Crowder
Southern California Water Company	Chet Anderson
City of Upland	Jim Moody
West San Bernardino County Water District	Anthony Araiza

Note: *Tom Shollenberger was succeeded by Robert DeLoach and Robert DeLoach was succeeded by Charles Sihler during the fiscal year. **Mutual Water Company of Glen Avon Heights was assimilated by Jurupa Community Services District on February 26, 1997.

APPENDIX A-4

**ADVISORY COMMITTEE
FISCAL YEAR 1996-97**

Agricultural Pool

Regular Member

George Borba Jr., Dairy
Robert DeBerard, Grape Grower

Dick Dykstra, Dairy
Jack Hagerman, State of California
Roger Larkin, State of California

Alternate Member

Sheila Anderson, State of California
Robert Bridges, State of California
Pete Hall, State of California
Fred Hector, State of California

Gene Koopman, Milk Producers Council
Marilyn Levin, Deputy Attorney General,
State of California

Dana Oldenkamp, Milk Producers Council
Jeff Pierson, Unitex Management Company
Arlan Van Leeuwen, Dairy

Anthony Kolath, State of California
Carlos Lozano, State of California
Richard Matamoros, State of California
Bill Mills, Orange County Water District

Non-Agricultural Pool

Member

California Steel Industries, Incorporated
Southern California Edison Company
Kaiser Ventures Incorporated

Representative

Steve Arbelbide
Rick Darnell
Lee Redmond III

Appropriative Pool

Member

City of Chino
City of Chino Hills
City of Ontario
City of Pomona
City of Upland
Cucamonga County Water District
Fontana Union Water Company
Monte Vista Water District
Jurupa Community Services District
Fontana Water Company
San Antonio-West End Cons. Water Company
West San Bernardino County Water District

Representative

Dave Crosley
Ron Craig
Mike Teal
Robert DeLoach*
Jim Moody
Tom Shollenberger*
Gerald Black
P. Joseph Grindstaff
Edwin James
Mike McGraw
Ray Wellington**
A. W. Araiza**

*Note: *Tom Shollenberger was succeeded by Robert DeLoach and Robert DeLoach was succeeded by Charles Sihler during the fiscal year. **Non-major Appropriator representatives to the Advisory Committee.*

APPENDIX B ⁽¹⁾

**PRODUCTION BY POOL
(ACRE-FEET)**

FISCAL YEAR	APPROPRIATIVE POOL	OVERLYING (AGRICULTURAL) POOL	OVERLYING (NON-AGRICULTURAL) POOL	TOTAL
74-75	70,312	96,567	8,878	175,757
75-76	79,312	95,349	6,356	181,017
76-77	72,707	91,450	9,198	173,355
77-78	60,659	83,934	10,082 ⁽²⁾	154,675
78-79	60,597	73,688	7,127	141,412
79-80	63,834	69,369	7,363	140,566
80-81	70,726	68,040	5,650	144,416
81-82	66,731	65,117	5,684	137,532
82-83	63,481	56,759	2,395	122,635
83-84	70,558	59,033	3,208	132,799
84-85	76,912	55,543	2,415	134,870
85-86	80,859	52,061	3,193	136,113
86-87	84,662	59,847	2,559	147,068
87-88	91,579 ⁽³⁾	57,865	2,958	152,042
88-89	93,617 ⁽⁴⁾	46,762	3,619	143,998
89-90	101,344 ⁽⁵⁾	48,420	4,856	154,620
90-91	86,658 ⁽⁶⁾	48,085	5,407	140,150
91-92	91,982 ⁽⁷⁾	44,682	5,240	141,904
92-93	86,367 ⁽⁸⁾	44,092	5,464	135,923
93-94	80,798 ⁽⁹⁾	44,298	4,586	129,682
94-95	93,419 ⁽¹⁰⁾	55,022	4,327	152,768
95-96	101,606 ⁽¹¹⁾	43,639	5,424	150,669
96-97	109,751 ⁽¹²⁾	44,809	6,309	160,869

- (1) Assessed production or production reported in Annual Reports
- (2) Includes 3,945 AF of mined water pumped by Edison as agent for CBMWD.
- (3) Does not include 7,674.3 AF exchanged with MWD.
- (4) Does not include 6,423.6 AF exchanged with MWD.
- (5) Does not include 16,377.1 AF exchanged with MWD
- (6) Does not include 14,929.1 AF exchanged with MWD.
- (7) Does not include 12,202.4 AF exchanged with MWD.
- (8) Does not include 13,657.3 AF exchanged with MWD.
- (9) Does not include 20,194.7 AF exchanged with MWD.
- (10) Does not include 4,221.9 AF exchanged with MWD.
- (11) Does not include 6,167.2 AF exchanged with MWD and reflects corrected production after reporting errors accounted for.
- (12) There were no MWD exchanges in FY 96-97 and reflects corrected production after reporting errors were accounted for.

APPENDIX C

**SUMMARY OF ADMINISTRATIVE AND REPLENISHMENT ASSESSMENT BUDGETS
FISCAL YEAR 1997-98**

ON FILE AT WATERMASTER OFFICES

APPENDIX D

**SUMMARY OF
REALLOCATION OF UNPRODUCED OVERLYING (AGRICULTURAL) POOL
SAFE YIELD TO THE APPROPRIATIVE POOL
FISCAL YEAR 1996-97**

MEMBER	LAND USE CONVERSIONS		BALANCE AVAILABLE (AF)	TOTAL REALLOCATED (AF)
	FIRST 50%	REMAINING 50% (AF)		
Chino, City of	1,719.835	464.198	1,952.510	4,136.543
Chino Hills, City of	625.724	242.973	1,021.993	1,890.690
Cucamonga County Water District	598.364	416.510	1,751.927	2,766.801
Fontana Union Water Company		736.107	3,096.216	3,832.323
Jurupa Community Services District	2,536.248	237.184	997.644	3,771.076
Marygold Mutual Water Company		75.411	317.194	392.605
Monte Vista Water District	36.595	555.119	2,334.942	2,926.656
Monte Vista Irrigation Company		77.878	327.572	405.450
Norco, City of		23.193	97.554	120.747
Ontario, City of	793.281	1,308.847	5,505.275	7,607.403
Pomona, City of		1,290.669	5,428.815	6,719.484
San Antonio Water Company		173.406	729.380	902.786
Santa Ana River Water Company		149.756	629.905	779.661
Southern California Water Company		47.351	199.167	246.518
Upland, City of		328.241	1,380.650	1,708.891
West End Consolidated Water Company		109.059	458.723	567.782
West San Bernardino County Water District		74.145	311.869	386.014
TOTALS	6,310.047	6,310.047	26,541.336	39,161.430

Source: FY 1997-98 Assessment Package

APPENDIX E-1

**SUMMARY OF MWD DELIVERIES ⁽¹⁾
(ACRE-FEET)**

FISCAL YEAR 1996-97

DATE	WATER FACILITIES AUTHORITY CB 12					CB 1	CB 7 & CB 16	TOTAL	PM 15
	UPLAND	CHINO	CHINO HILLS	MVWD	ONTARIO ⁽³⁾	SCE	CCWD		POMONA ⁽²⁾
July	690	444	1,501	525	990	0	1,896	6,046	150
August	598	443	1,447	568	1,122	51	2,156	6,385	231
September	301	393	1,410	410	935	0	1,633	5,082	183
October	180	358	1,246	150	847	12	1,841	4,634	115
November	1	350	698	53	450	0	2,069	3,621	0
December	0	348	537	68	448	0	1,541	2,942	0
January	2	336	410	53	434	0	555	1,790	0
February	2	185	386	21	0	0	1	595	7
March	2	309	1,001	144	245	0	366	2,067	38
April	0	350	1,249	206	620	0	1,809	4,234	218
May	254	375	1,467	240	813	0	2,215	5,364	353
June	432	435	1,497	253	974	4	1,971	5,566	321
TOTAL	2,462	4,326	12,849	2,691	7,878	67	18,053	48,326	1,614

Total MWD deliveries used in Chino Basin (includes Pomona)

49,940 AF

- (1) A breakdown of categories of water is available upon request. Does not include water exchanged with MWD.
- (2) Figures reflect 37.8% of the total MWD water delivered that was used over the Chino Basin (based on estimated land area physically located within the Chino Basin adjudicated boundary). The water delivered to Pomona is not included in the summary totals, however it is reflected in the MWD total deliveries in Appendix F.
- (3) During FY96-97 Ontario did not take any deliveries through its CB-2 connection.

APPENDIX E-2

**SUMMARY OF COOPERATIVE, REPLENISHMENT AND CYCLIC ACTIVITIES
FISCAL YEAR 1996-97**

(ACRE-FEET)

COOPERATIVE ACTIVITY		DIRECT REPLENISHMENT ACTIVITY			CYCLIC ACTIVITY		
MONTH	PRODUCED FROM COOPERATIVE	CB-13T SAN SEVAINE	CB-14T ETIWANDA	CB-59T MONTCLAIR	CYCLIC DELIVERED BY EXCHANGE	PRODUCED FROM CYCLIC	TOTAL
July	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0
October	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0
January	0	0	0	0	0	0	0
February	500.6	0	0	0	0	0	500.6
March	0	0	0	0	0	0	0
April	0	0	0	16.5	0	0	16.5
May	0	0	0	0	0	0	0
June	4,172.1	0	0	0	0	0	4,172.1
TOTAL	4,672.7	0	0	16.5	0	0	4,689.2

Cyclic storage balance as of June 30, 1996	33,749.1
Direct deliveries by spreading: 96-97	16.5
Deliveries by exchange: 96-97	0.0
BALANCE:	33,765.6
Produced during 1996-97:	<u>0.0</u>
BALANCE as of June 30, 1997	33,765.6

BREAKDOWN OF MWD CYCLIC ACTIVITY

There was no cyclic activity during FY96-97. 16.5 AF was recharged before the Montclair gate closed during April and OCWD had begun using the channel to have water delivered to its service area.

BREAKDOWN OF COOPERATIVE ACTIVITY

	Ontario	JCSD
February 97	(500.6)	0.0
June 97	(4,172.1)	(3,170.8)
Total	(4,682.7)	(3,170.8)

MVWD has 1,697.3 AF in its Cooperative Account with Met. This is the total cooperative storage balance at FY end. JCSD and Ontario took delivery in February and June. There were no additional deliveries into cooperative storage during FY 96-97.

APPENDIX F

**SUMMARY OF OTHER IMPORTED SUPPLIES
FISCAL YEAR 1996-97**

(ACRE-FEET)

MEMBER	OTHER BASINS	SURFACE DIVERSIONS	OTHER IMPORTED SURFACE DIVERSIONS	RECLAIMED WATER ⁽¹³⁾
Chino Basin Municipal Water District ⁽¹⁾	0	0	0	2
Cucamonga County Water District ⁽²⁾	14,855	6,414	0	0
Fontana Water Company ⁽³⁾	13,338	6,504	0	0
Marygold Mutual Water Company ⁽⁴⁾	1,406	0	0	0
Metropolitan Water District ⁽⁵⁾	0	0	48,326	0
Ontario, City of ⁽⁶⁾	0	0	0	809
Pomona, City of ⁽⁷⁾	2,207	1,049	3,136	0
San Antonio Water Company ⁽⁸⁾	2,906	2,375	0	0
San Bernardino County ⁽⁹⁾	1,264	0	0	1,264
State of California, CIM ⁽¹⁰⁾	0	0	0	895
West End Consolidated. Water Co ⁽¹¹⁾	2,968	0	0	0
West San Bernardino CWD ⁽¹²⁾	6,615	1,668	0	0
Subtotal	45,559	18,010	51,462	2,957

TOTAL 115,031 (does not include reclaimed water total)

- (1) *CBMWD - RP-1 water to Kasler Construction for freeway 60 construction.*
- (2) *Includes water produced from Cucamonga Basin and local runoff captured from Day Creek, Deer Canyon and water treated at Lloyd Michael and Royer-Nesbitt WTP's.*
- (3) *Includes water pumped from other basins and Lytle Creek surface water production.*
- (4) *Includes 1,406 AF produced from wells owned by the City of Rialto, located in the Rialto Basin.*
- (5) *Includes total MWD water delivered to CBMWD service area (48,326 AF as shown on E-2 and 16.5 AF direct spreading into Cyclic account) excluding Pomona which is shown separately, cooperative and cyclic water.*
- (6) *Includes water delivered for use at Whispering Lakes Golf Course.*
- (7) *Includes 1,114 AF from Pomona Basin, 1,093 AF from Claremont Basin and 3,136 AF MWD water delivered to Pomona through Three Valleys MWD and used in Chino Basin.*
- (8) *Includes water from Cucamonga Basin, Claremont Basin, the San Antonio Tunnel and the Main Box.*
- (9) *CBMWD - RP-1 water delivered to El Prado Park and El Prado Golf Course.*
- (10) *Reclaimed wastewater that was applied to fields, does not include 20 million gallons held in storage ponds*
- (11) *Includes water from Claremont Heights Basin.*
- (12) *Includes 1667.963 AF delivered to City of Rialto (shown only not included in summary as it is not is CBWM boundary, and 6615.076 delivered in "meter book" service area.*
- (13) *Reclaimed water totals are not included in summary total as it is not an "imported" supply as are the other quantities of water shown.*

APPENDIX G

TOTAL WATER USED WITHIN CHINO BASIN ⁽¹⁾

(ACRE-FEET)

FISCAL YEAR	CHINO BASIN EXTRACTIONS ⁽²⁾	OTHER IMPORTED SUPPLIES ⁽³⁾	TOTAL
1974-75	175,757	49,383	225,140
1975-76	181,017	57,686	238,703
1976-77	173,355	55,765	229,120
1977-78	154,675	61,567	216,242
1978-79	142,412	75,864	217,276
1979-80	140,566	70,727	211,293
1980-81	144,416	77,765	222,181
1981-82	137,532	67,491	205,023
1982-83	122,635	76,000	198,635
1983-84	132,799	99,257	232,056
1984-85	134,870	92,952	227,822
1985-86	136,113	114,624	250,737
1986-87	147,068	126,493	273,561
1987-88	152,402	116,175	268,577
1988-89	143,998	128,167	272,165
1989-90	154,620	139,004	293,624
1990-91	140,151	116,493	256,644
1991-92	141,904	104,480	246,384
1992-93	135,923	117,205	253,128
1993-94	129,682	136,038	265,720
1994-95	152,768	116,797	269,565
1995-96	150,669	130,494	281,163
1996-97	160,869 ⁽⁴⁾	115,031	275,900

- (1) Total includes water used over Cucamonga Basin.
- (2) Source: Watermaster Assessment Packages. Total production in Appropriative Pool (excluding exchanges) plus Non-Ag and Ag Pool production.
- (3) Total does not include reclaimed water, cyclic deliveries, or water delivered by exchange which were used for replenishment.
- (4) Reflects corrected production after reporting errors were accounted for.

APPENDIX H

**LOCAL STORAGE ACCOUNT STATUS
FISCAL YEAR ENDED JUNE 30, 1997**

APPROPRIATIVE POOL	NO. #	DATE OF AGREEMENT(S)	AMOUNT OF AGREEMENT(S)	AMOUNT IN STORAGE	TOTAL
Chino, City of	12	01/23/85	15,000.000	2,775.327	2,775.327
Chino Hills, City of	18.1	04/06/88	15,000.000	18,120.141	18,120.141
Cucamonga County Water District	10	05/30/84	5,000.000	5,000.000	45,113.532
	10.1	05/06/87	5,000.000	5,000.000	
	10.2	04/06/88	20,000.000	20,000.000	
	10.3	06/07/89	50,000.000	15,113.532	
Fontana Water Company	28	08/05/92	5,000.000	0.000	0.00
Jurupa Community Services District	30	07/06/94	20,000.000	8,311.749	8,311.749
Marygold Mutual Water Company	16.3	07/07/93	2,000.000	2,029.928	2,029.928
Monte Vista Irrigation Company	17	05/07/89	500.000	500.000	5,060.576
	17.1	06/06/90	2,500.000	4,560.576	
Monte Vista Water District	27	08/05/92	2,500.000	5,336.477	5,336.477
Norco, City of	31.0	11/02/94	2,000.000	0.000	0.000
Ontario, City of	11	06/07/89	10,000.000	10,000.000	10,000.000
	11.1	07/06/94	20,000.000	0.000	
Pomona, City of	15.1	04/06/88	13,000.000	2,637.000	30,192.422
	15.2	06/06/90	10,000.000	10,000.000	
	15.3	08/05/92	10,000.000	10,000.000	
	15.4	07/07/93	10,000.000	7,555.422	
San Antonio Water Company	3	08/15/80	2,500.000	2,500.000	19,694.371
	3.1	11/05/86	2,500.000	2,500.000	
	3.2	04/06/88	10,000.000	14,694.371	
Santa Ana River Water Company	20	05/06/87	1,500.000	271.977	271.977
Southern California Water Company	23	12/07/88	500.000	1,776.985	1,776.985
Upland, City of	24	04/05/89	1,000.000	1,000.000	9,733.792
	24.1	06/06/90	8,000.000	8,733.792	
West End Consolidated Water Company	13.2	08/05/92	6,000.000	5,473.689	5,473.689
West San Bernardino County Water District	25	01/10/91	3,000.000	1,683.442	1,683.442
Watermaster	29	08/05/92	10,000.000	28,948.946	28,948.946
Total Appropriative Pool			274,400.000	194,523.354	194,523.354

OVERLYING (NON-AGRICULTURAL) POOL

Ameron	6	03/30/83	100.000	100.000	1,086.898
	6.1	04/06/88	500.000	500.000	
	6.2	08/05/92	500.000	486.898	
Calmat	1	06/30/79	1,589.220	1,589.220	6,039.036
	1.1	05/30/84	1,589.220	1,589.220	
	1.2	02/07/90	1,589.220	2,860.596	
Kaiser Ventures Inc.	9.1	10/07/87	15,000.000	8,083.785	8,083.785
Praxair	8.2	04/06/88	3,000.000	2,053.084	2,053.084
SCE	14.1	04/06/88	5,000.000	2,320.934	2,320.934
Space Center Mira Loma	4	03/31/82	100.000	100.000	378.947
	4.1	11/05/86	200.000	278.947	
Sunkist Growers Inc.	7	03/31/83	2,500.000	2,500.000	5,358.307
	7.1	11/05/86	5,000.000	2,858.307	
Swan Lake	21	05/06/87	300.000	300.000	1,403.886
	21.1	05/06/91	500.000	1,103.886	
Total Overlying (Non-Agricultural) Pool			37,467.660	26,724.877	26,724.877
*Total			311,867.660	221,248.231	221,248.231

*Total Agreements now reflects the actual amount of storage agreements entered into where storage occurred. The agreements that expired during the last 5 years which were never utilized have been removed from the list.

APPENDIX I-1

**LOCAL WATER IN STORAGE
RECAPTURES, SALES AND TRANSFERS
FISCAL YEAR 1996-97**

(ACRE-FEET)

FROM	TO	USE*	TRANSFERS	SALES	RECAPTURES
Jurupa CSD	San Antonio WC	1	4,880.000		
Marygold Mutual WC	Fontana WC	2		700.000	
Mutual Water Comp/GA	City of Ontario	2		108.204	
City of Norco	City of Norco	2			320.200
San Antonio Water Comp	Jurupa CSD	2		325.000	
San Antonio Water Comp	City of Ontario	2		2,500.000	
Southern California WC	SCE	2		750.000	
City of Upland	Chino Basin WM	2		10,000.000	
West End Cons WC	City of Upland	1	11,876.800		
West End Cons WC	So Cal WC	1	1,123.200		
W.S.B County W. Dist	Chino Basin WM	2	2,000.000		
			19,880.000	14,383.204	320.000

Total 34,583.204

Use*

(1) placed in storage

(2) offset production

APPENDIX I-1

**LOCAL WATER IN STORAGE
RECAPTURES, SALES AND TRANSFERS
FISCAL YEAR 1996-97**

(ACRE-FEET)

FROM	TO	USE*	TRANSFERS	SALES	RECAPTURES
Jurupa CSD	San Antonio WC	1	4,880.000		
Marygold Mutual WC	Fontana WC	2		700.000	
Mutual Water Comp/GA	City of Ontario	2		108.204	
City of Norco	City of Norco	2			320.200
San Antonio Water Comp	Jurupa CSD	2		325.000	
San Antonio Water Comp	City of Ontario	2		2,500.000	
Southern California WC	SCE	2		750.000	
City of Upland	Chino Basin WM	2		10,000.000	
West End Cons WC	City of Upland	1	11,876.800		
West End Cons WC	So Cal WC	1	1,123.200		
W.S.B County W. Dist	Chino Basin WM	2	2,000.000		
			19,880.000	14,383.204	320.000

Total 34,583.204

Use*
 (3) placed in storage
 (4) offset production

APPENDIX I-2
TRANSFERS/LEASES
FISCAL YEAR 1996-97
(ACRE-FEET)

FROM	TO	TYPE	USE*	AMOUNT	TOTAL
Cucamonga CWD	Chino Basin WM	L	1	903.682	
	City of Chino	L	5	1,232.982	2,136.664
Fontana UWC	Cucamonga CWD	L	4	3,832.323	
		L	4	6,396.736	10,229.059
Santa Ana River WC	Jurupa CSD	L	5	600.000	600.000

Total Assignments/Transfers/Leases

12,965.723

* Use

- (1) replenishment
- (2) MWD Cyclic
- (3) MWD Cooperative
- (4) operating yield
- (5) offset 96-97 production

APPENDIX I-3
ASSIGNMENTS
FISCAL YEAR 1996-97
(ACRE-FEET)

FROM	TO	USE*	AMOUNT	TOTAL
City of Chino	County of SB Airport Dept	2	188.570	188.570
Fontana Water Company	Praxair Inc.	2	167.528	167.528
	California Steel Industries	2	1,577.020	1,577.020
Jurupa CSD	MCM Co for Swan Lake	2	232.330	232.330
	City of Norco	2	452.184	452.184
	Santa Ana River Water Co	2	723.364	723.364
City of Ontario	Sunkist Growers, Inc.	2	364.590	
	Sunkist Growers, Inc.	1	5,966.561	6,331.151
Total Agency Agreements for Provision of Water Service				9,672.147

*Use

- (1) offset 96-97 overproduction (nunc pro tunc from storage to compensate for prior years' annual receipt of same quantity of water).
- (2) annual assignment of production for receipt of same amount of water.

APPENDIX J
NEW PARTY INTERVENTIONS
APPROVED IN
FISCAL YEAR 1996-97

Overlying (Non-Agricultural) Pool

California Speedway Corporation

Overlying (Agricultural) Pool

Chin Lee, Ambrosia Farms

Appropriative Pool

These Petitions were approved through the Watermaster process during FY96-97 but had not been submitted to the Court by fiscal year end.

APPENDIX K

**WATERMASTER'S "NOTICE OF INTENT"
TO CHANGE THE OPERATING SAFE YIELD
OF THE CHINO GROUND WATER BASIN**

PLEASE TAKE NOTICE that on this 30th day of June 1997, Chino Basin Watermaster hereby files this "NOTICE OF INTENT" to change the operating safe yield of the Chino Ground Water Basin pursuant to the Judgment entered in Chino Basin Municipal Water District v. City of Chino, et al., San Bernardino Superior Court, Case No. RCV 51010 (Exhibit I, Paragraph 2b, Page 80).

Approved by the

WATERMASTER ADVISORY COMMITTEE

CHINO BASIN WATERMASTER

BY: s/s P. Joseph Grindstaff
P. Joseph Grindstaff

BY: s/s John L. Anderson
John L. Anderson

Attest:

By s/s Terry Catlin
Terry Catlin, Secretary

APPENDIX L

RESOLUTION NO 96-6

**RESOLUTION OF THE CHINO BASIN WATERMASTER
ESTABLISHING TIME AND PLACE OF REGULAR
MEETINGS**

WHEREAS, the Chino Basin Watermaster is required to hold quarterly meetings in accordance with Rules and Regulations adopted by the Watermaster pursuant to Section V, paragraph 18, page 13 of the Judgment entered on January 27, 1978, Chino Basin Municipal Water District v. City of Chino, et al, Case No RCV 51010 (formerly SCV 164327), and,

WHEREAS, Article 2 paragraph 2.03, page 4 of said Watermaster Rules and Regulations as amended by Resolution No. 85-2, approved and adopted on November 6, 1985, provides that regular meetings of Watermaster shall be held at the principal office at 8:30 a.m. on the first Wednesday following each fifth Wednesday in a month, or at such other time or place as may be designated from time to time by the Watermaster, contained in the necessary notice thereof. If the time designated for regular meetings shall fall on a legal holiday, the regular meeting shall be held instead on the next succeeding regular business day at the same time and place, or such other day, time and place as may be designated.

NOW, THEREFORE BE IT RESOLVED that said Article 2, paragraph 2.03, page 4 of the Watermaster Rules and Regulations shall be revised to read as follows:

2.03 Regular Meetings. Regular meetings shall be held at the principal office on the first Thursday in September, December, March and June, or at such other time or place as may be designated from time to time by the Watermaster, contained in the necessary notice thereof. If the time designated for regular meetings shall fall on a legal holiday, the regular meeting shall be held instead on the next succeeding regular business date at the same time and place, or such other day, time and place as may be designated.

BE IT FURTHER RESOLVED that the dates for each quarterly meeting during Fiscal Year 1996-97, are as follows: 1) September 5; 2) December 5; 3) March 6; and 4) June 5.

BE IT FURTHER RESOLVED that upon the effective date of this Resolution, Resolution 85-2 is hereby rescinded in its entirety.

APPENDIX L
(continued)

THE FOREGOING RESOLUTION was approved and signed by me on this 6th day of November, 1996.

ATTEST:

s/s Bill Hill
Bill Hill, Chairman
Chino Basin Watermaster

John L. Anderson
John L. Anderson, Secretary
Chino Basin Watermaster

STATE OF CALIFORNIA)
)SS
COUNTY OF SAN BERNARDINO)

I, John L. Anderson, Secretary of the Chino Basin Watermaster, DO HEREBY CERTIFY that the foregoing Resolution being No. 96-6 was adopted at a regular meeting of the Chino Basin Watermaster Board by the following vote:

AYES: Hill, Anderson, Troxel, Dunihue

NOES: None

ABSENT: Borba

ABSTAIN: None

s/s John L. Anderson
Secretary

APPENDIX M

**FIFTH AMENDMENT TO THE
CHINO BASIN CYCLIC STORAGE AGREEMENT**

This Amendatory Agreement (hereinafter "Amendment") is made as of January 5, 1997, by and between the Metropolitan Water District of Southern California (hereinafter "Metropolitan"), the Chino Basin Municipal Water District (hereinafter "Chino") and the Chino Basin Watermaster (hereinafter "Watermaster").

RECITALS

WHEREAS, The parties to this Amendment entered into an agreement titled Chino Basin Cyclic Storage Agreement, (hereinafter "Agreement"), dated December 4, 1978, for the purpose of giving Metropolitan the right to store up to 100,000 acre-feet of State Project water in the Chino Basin;

WHEREAS, the Agreement has been extended by previous amendments to January 5, 1997;

WHEREAS, water stored under the Agreement is used to meet Chino's groundwater replenishment demands pursuant to specific criteria set forth in Article 6 of the Agreement;

WHEREAS, under its terms, the Agreement allows Metropolitan to deliver State Project Water to the Chino Basin for spreading and percolation into the Chino basin, and such quantities of water, less losses, are to be credited by the Watermaster to Metropolitan's Cyclic Storage Account;

WHEREAS, the parties to this Agreement are reviewing a number of policies and procedures that may affect the terms of storage and delivery of water under future amendments to the Agreement;

WHEREAS, the parties to the Agreement desire to extend the term of the Agreement one year in order to continue the benefits that the Agreement provides while the aforementioned review is taking place;

NOW, THEREFORE, the parties hereby enter into this Amendment to the Agreement as follows:

COVENANTS

1. Article 9 (a) of the Agreement is hereby amended by extending the term of the Agreement to December 31, 1997.

2. This Amendment shall be effective as of the date first above written, and Watermaster shall petition the Court for ratification of such approval as a portion of its next Watermaster Annual Report.

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be duly executed by its authorized officers.

ATTEST:

THE CHINO BASIN WATERMASTER

s/s Terry Catlin
Secretary

By: s/s John L. Anderson
Chairman

**APPENDIX M
(continued)**

APPROVED AS TO FORM:

Attorney for Watermaster

ATTEST:

THE METROPOLITAN WATER
DISTRICT OF SOUTHERN CALIFORNIA

By: s/s Edward S. Means

Executive Secretary

APPROVED AS TO FORM:

Gregory Taylor
General Counsel

s/s Gregory Taylor
General Counsel

ATTEST:

THE CHINO BASIN MUNICIPAL WATER
DISTRICT

s/s Terry Catlin
Secretary

By: s/s John L. Anderson
Chairman

APPROVED AS TO FORM
AND EXECUTION:

s/s Jean Cibisoyenette
Attorney for District

APPENDIX N

COMPREHENSIVE ANNUAL FINANCIAL REPORT
FISCAL YEAR 1996-97

CHINO BASIN WATERMASTER

Financial Statements

Year ended June 30, 1997
(With Independent Auditors' Report Thereon)

ON FILE AT WATERMASTER OFFICES

APPENDIX O-1

SUMMARY OF ENGINEERING ACTIVITIES OF THE CHINO BASIN WATERMASTER FOR THE FIRST TWENTY YEARS OF OPERATION 1977-1997

This portion of the appendix summarizes Watermaster's significant engineering activities since the Judgment became operational in July of 1977. The information presented herein was extracted from previous annual reports, files of the Watermaster and from consultants to Watermaster. The ongoing meter testing and calibration are not included in this discussion. The significant engineering activities of the Watermaster for the period 1977-78 to 1996-97 are listed in Appendix O-1. It lists the fiscal years in which the work began and ended, a brief description of the work, the source from which the information was extracted, and the consultants/staff teams that actually performed the work. Also included, where applicable, are the Task Order numbers/contract numbers.

Watermaster has been involved in engineering studies since the time the Judgment was filed, in one of two ways: either as a sponsoring agency or as stakeholder with another entity conducting the engineering investigation. In the latter case, the engineering activities were done by entities that were not producers such as MWD (Metropolitan Water District of Southern California) and the DWR (California Department of Water Resources). In those instances, Watermaster's engineering activities were to provide direction, work product review and comments. In all other cases, Watermaster staff, or consultants retained by Watermaster, conducted engineering studies.

Engineering studies done prior to 1987-88 were focused on conjunctive use programs proposed by MWD and DWR, and on the initial review of safe yield. The amount of engineering activity was relatively low. Beginning in 1987-88, the level of engineering activity increased substantially with most of the activities devoted to the process of developing an optimum basin management program, resolving the impediments to implementing an optimum basin management program, groundwater quality monitoring, and technical matters relating to administration of the Judgment.

1977-78 to 1986-87

For the period 1977-78 to 1986-87, Watermaster's engineering activities were primarily in providing direction and comment on the development of a groundwater storage program proposed by the DWR and the MWD. The proposed storage program would have put water into the groundwater basin during years with surplus state project water (SPW). The "put" would have occurred through direct recharge and through in-lieu recharge and would occur over a ten-year period. The maximum volume of groundwater storage that would be used was estimated to be about 1,500,000 acre-feet. Water would be removed from storage at a rate of 300,000 acre-feet per year with some of the water exported to outside of the Chino Basin. The DWR pulled out of the project due to financial reasons and the storage program was put on hold. In 1985, MWD continued development of the storage program and in 1988, prepared a DEIR (draft environmental impact report). Studies done during the preparation of the DEIR indicated that the storage of 1,500,000 acre-feet was not feasible from an environmental perspective and the size of the storage program was reduced to 750,000 acre-feet. Metropolitan suspended development of the storage program shortly after the release of the DEIR due to institutional differences among Chino Basin producers and due to environmental concerns.

MWD attempted to develop a modified version of the storage program in the early 1990's but suspended these efforts when it appeared that Watermaster and MWD could not develop an agreement to allow MWD to store water in the Chino Basin.

APPENDIX O-1
(continued)

In 1985-86, Watermaster began to conduct its' own engineering studies in order to re-evaluate the safe yield of the Chino Basin. Watermaster contracted with CDM (Camp, Dresser and McKee, Inc.) and the SBCFCD (San Bernardino County Flood Control District) to conduct groundwater level measurements, to compute the current storage in the basin, and to compute the change in storage since the Judgment was filed.

1987-88 to 1996-97

A groundwater-monitoring plan was developed during 1988-89 and implemented during 1989-90. The monitoring program consisted of obtaining groundwater quality samples from 60 to 70 wells located in the southern Chino Basin and collecting water quality data for over 260 wells from producers in the Overlying (Non-Agricultural) and Appropriative Pools. This program was conducted in 1989-90, 1990-91, 1991-92, 1995-96 and 1996-97. Currently Watermaster staff, working with its consultant Mark J. Wildermuth, Water Resource Engineers (MJWWRE), is re-evaluating the monitoring plan and is developing a proposal to expand the program for groundwater levels for 1997-98 and for more water quality information in 1998-99.

In 1988-89, Watermaster and other interested agencies contracted with the Santa Ana Watershed Project Authority (SAWPA) to initiate development of an *Optimum Basin Management Program*. This program is required pursuant to the Judgment, paragraph 41, and more recently in the ruling of the *Moving Parties'* lawsuit that directed Watermaster to undertake and implement an optimum basin management program for the Chino Basin. A study Task Force was formed that included Watermaster, CBMWD, (Chino Basin Municipal Water District), WMWD (Western Municipal Water District), MWD and SAWPA, (Santa Ana Watershed Planning Authority). The Task Force agreed to fund a study to develop an optimum basin management program. The study was renamed the "*Chino Basin Water Resources Management Study*." The Task Force developed the following as a goal of the study:

"Manage the total water resources to meet projected demands at a minimum cost and acceptable water quality."

A three-phase work plan was developed that included:

- Phase I – initial plan development.
- Phase II – detailed evaluation.
- Phase III – final plan development.

The Phase I work was done by JMM (James M. Montgomery) and was completed in 1990-91. Phase I consisted of the following tasks:

- Identify current management objectives and constraints.
- Update water supply and wastewater management planning environment.
- Formulate water resources planning elements and alternative plans.
- *Evaluate the plans based on the objectives and constraints, and;*
- Recommend the scope of work for subsequent phases of plan development.

Phase II work was done by a group of consultants led by JMM that included CDM, CH2M-Hill, MJWWRE, and DSCE (Diba Software Consulting Engineers) at a cost of \$1.3 million. The work started during 1991-92 and was completed in 1995-96. The scope of work to be done in this phase included the following tasks:

APPENDIX O-1
(continued)

- Define planning environment.
- Develop management planning elements.
- Develop economic evaluation procedure.
- Prepare model implementation plan.
- Develop conceptual model of the chino basin.
- Develop three-dimensional groundwater model.
- Develop new planning interface.
- Develop and evaluate baseline alternative.
- Evaluate institutional, legal and regulatory constraints, and;
- Develop and evaluate alternative management plans.

A baseline projection was made of future groundwater levels, availability and quality. The baseline alternative consisted of a 51-year period from 1990 to 2040. During this period, the conversion of the agricultural areas to urban, commercial and industrial uses was assumed. Water supply and wastewater disposal plans were developed by the local water management agencies to serve the new land uses. The baseline alternative was an extrapolation of the status quo. Future groundwater levels, availability and quality were estimated with a comprehensive set of computer simulation codes developed for this study. The modeling results of the baseline alternative showed widespread overdraft and groundwater quality degradation. The baseline alternative is not feasible and four alternatives were developed with varying amounts of regional groundwater treatment capacity (multiple projects and varying capacity), reclaimed water recharge, imported water recharge, conservation and conjunctive use. These alternatives were simulated with the new simulation codes. All four alternatives were economically feasible at the macro level that is, when viewed as basin-wide average costs.

The Phase II work revealed impediments to developing an optimum basin management program. These impediments included:

- Implementable method of allocation of un-produced agricultural pool water as agricultural lands are converted to non-agricultural uses.
- Determination of amount of local water that can be stored and a more detailed analysis of replenishment facilities.
 - **Need for new replenishment facilities for imported water.**
- *Voluntary cooperation to develop new institutional and financial arrangements needed to develop groundwater treatment programs.*
- Irreconcilable differences between Watermaster and MWD on conjunctive use issues.

Prior to starting the third phase, the producers in the basin decided to work through these impediments before finalizing an optimum basin management program. Watermaster has conducted several engineering studies utilizing its' own staff and consultants to help resolve some of these impediments.

Watermaster staff developed a new method to determine and distribute the un-produced agricultural pool water as agricultural lands are converted to non-agricultural uses. This method was developed during FY 1994-95 to 1995-96 and was approved by the Court in November 1995. Unused water is now being reallocated as the agricultural lands convert to non-agricultural uses.

Watermaster staff and Stetson Engineers conducted a study to determine the evaporative losses that occur when Watermaster takes delivery of imported water from MWD.

APPENDIX O-1
(continued)

Watermaster retained MJWWRE to review the need for storage limits for local storage accounts to estimate the amount of groundwater in storage lost to rising groundwater and to recommend a method to ensure that water in local storage accounts is put to timely beneficial use. This work was started in 1994-95. Watermaster staff and the producers have been working since that time to develop an equitable method by which to establish the maximum amounts that can be held in storage, the amount that such losses will occur, and the rate at which the losses will occur. Final negotiations and adoption of the methodology by resolution have been tabled until a new Watermaster is appointed.

In conjunction with the Chino Basin Watermaster, CBWCD, is conducting a study to develop a Recharge Master Plan for the Chino Basin. A three-phase study was initiated in 1995-96. The Phase I draft report was prepared by MJWWRE and was submitted to Watermaster and CBWCD in 1996-97; the final Phase I report will be completed in 1997-98. Phase I results included: a rigorous analysis of recharge capacity for storm water, reclaimed water and imported water; a revised estimate of the safe yield of the Chino Basin; and a plan of study for a field program to develop information to prioritize future spreading basin improvements. It also included a plan for scheduling of maintenance. Phase II consists primarily of a large field program and institutional efforts. Phase III consists of developing the final master plan and CEQA documentation. Phase II will begin in 1998-1999 and will take about two years to complete. Phase III should be completed in 2002-03.

In conjunction with the Recharge Master Plan efforts, Watermaster and the SBCFCD are jointly studying the impacts of constructing flood control improvements on Etiwanda and San Sevaine Creek (*San Sevaine Creek Water Project*) on groundwater recharge in the Chino Basin. Watermaster and SBCFCD have entered into an agreement that SBCFCD will mitigate any losses in recharge due to the *San Sevaine Creek Water Project*. This work started in 1995-96 and will be completed in 1997-98.

Watermaster staff, CBWCD staff and MJWWRE have developed a surface water-monitoring program to sample and analyze the quality of storm water that recharges the Chino Basin. This program started in 1995-96 and has been continued annually thereafter. Developing a reliable long term water quality data base for storm water recharge is necessary to developing groundwater quality management and reclaimed water use elements for an optimum basin management plan.

Watermaster staff and MJWWRE initiated an analysis to develop an equitable means to describe the basin-wide benefits of regional groundwater treatment systems in the central and southern Chino Basin. This work conducted on an ad hoc basis during fiscal years 1995-96 and 1996-97, developed estimates of the salt removed, replenishment obligation, and the effects on safe yield.

Watermaster staff and MJWWRE have been reviewing MWD proposals for cyclic storage and seasonal storage service. During 1996-97, the Orange County Cyclic agreement was reviewed and comments from CBWM were incorporated in the agreement to maintain the cyclic program's current structure. Without these CBWM changes the cyclic program would have been fundamental changed and been discontinued within the Chino Basin.

Watermaster is participating in the Santa Ana Watershed-wide TDS and Nitrogen Study. The main deliverable of this study will be the development of reclamation guidelines for the Santa Ana River watershed that will bring clarity to the process of developing and permitting reclaimed water recharge projects. New water quality objectives for TDS and nitrogen will be developed for the Chino Basin and the Basin may be divided into several management zones for water quality management purposes which may be different than the current zones for which the objectives were set.

APPENDIX O-2

ENGINEERING ACTIVITIES OF THE CHINO BASIN WATERMASTER FOR THE FIRST TWENTY YEARS OF OPERATION 1977-1997

<u>Period</u>	<u>Title/Description</u>
1977-78	<p>Task Order 78-1: Conjunctive Use/Cyclic Storage Studies Investigation of feasibility and desirability of conjunctively using the Chino Basin to store up to one million acre-feet of State Project Water. <i>Source: 1st Annual Report</i></p> <p>The California DWR (Department of Water Resources) and MWD (Metropolitan Water District of Southern California) completed two of the four phases of this study and met with Watermaster and the Watermaster Advisory Committee to present their results and recommendations. Watermaster and the Committees expressed institutional and water quality concerns to the DWR that resulted in the formation of a Watermaster Ad Hoc Committee to meet with the DWR and their consultants to identify these concerns and to assure that the requirements mandated by the Judgment were addressed. <i>Source: 4th Annual Report</i></p> <p>DWR and MWD completed Phase 3 of their conjunctive use study. Watermaster and the Watermaster Ad Hoc Committee continued their coordination with DWR and MWD. <i>Source: 5th Annual Report</i></p>
1982-83	<p>The DWR and MWD completed the joint Conjunctive Use Study in March 1983. The DWR, MWD and their consultants continued to meet with Watermaster, Watermaster Committees and the Watermaster Ad Hoc Committee. <i>Product: Chino Basin Groundwater Storage Program – Final Report and Appendices</i> <i>Work Done By: CDM (Camp, Dresser and McKee), JMM (James M. Montgomery), Leroy Crandall and Associates and Kronick, Moskovitz, Tiedermann and Girard</i></p>
1985-86	<p>DWR dropped out of the conjunctive use study due to financial reasons. MWD announced that it intended to proceed without DWR and began to plan studies for CEQA compliance. <i>Source: 8th Annual Report</i></p>
1987-88	<p>MWD and its consultants completed a DEIR (Draft Environmental Impact Report) for the Chino Basin Groundwater Storage Program. Watermaster, the Watermaster Committees and the Ad Hoc Committee reviewed and submitted comments on MWD's DEIR. <i>Product: Report Entitled Chino Groundwater Storage Program DEIR</i> <i>Source: 11th Annual Report</i> <i>Work Done By: MWD, CDM and JMM</i></p>
1977-79	<p>Task Order 78-2: Water Quality Monitoring Groundwater quality study implemented to assure that data used to update the Basin Plan by the SARWQCB (Santa Ana Regional Water Quality Control Board) and the USGS accurately represented water quality in the Chino Basin. <i>Source: 1st Annual Report</i></p>

APPENDIX 0-2
(continued)

<i>Period</i>	<i>Title/Description</i>
1979-80	Task Order 79-1: Water Well Data Initiated to collect and analyze existing and new data to assist in the determination of key wells and to provide the Watermaster and the Watermaster Advisory Committee with information to make future groundwater management decisions. <i>Source:</i> 3 rd Annual Report
1982-83	Several key wells were located in both the upper and lower portion of the basins which were used to provide information for the conjunctive use study and to assist in closing data gaps which were previously encountered by the SARWQCB. Number of wells is 35. <i>Source:</i> 4 th Annual Report
1983-84	Task Order 84-1A: Water Well Data This effort was coordinated with the DWR to support future conjunctive use activities and future safe yield evaluations. <i>Source:</i> 7 th Annual Report
1984-85	SBCFCD field verified consultant's list of wells and prepared to take mass water level measurements. <i>Source:</i> 8 th Annual Report
1985-86	SBCFCD conducted mass groundwater level monitoring program. <i>Product:</i> Table of Groundwater Level Monitoring Results <i>Source:</i> 9 th Annual Report <i>Work Done By:</i> SBCFCD
1992-93	Mark J. Wildermuth, Water Resources Engineers conducted winter groundwater level and quality monitoring program. General minerals and groundwater level data were collected from 283 wells of which Wildermuth monitored 64 during the program and the remainder were monitored by cooperating agencies. <i>Product:</i> Chino Basin Groundwater Monitoring Program – Winter 1992 <i>Source:</i> 15 th Annual Report <i>Work Done By:</i> MJWWRE (Mark J. Wildermuth, Water Resources Engineers)
	Task Order 84-1b: Safe Yield Study Safe yield study initiated to collect existing and new data to redetermine the safe yield of the Chino Hydrologic Basin. Pursuant to the Judgment, page 80, Section 20, the Watermaster posted its Notice of Intent to reevaluate the safe yield of the Basin. This study utilized original data gathered under Task Order 79-1 and new Task Order 84-1A and compiled rainfall data to prepare a water level contour map and a computer model used by consulting engineers to develop and complete the safe yield determination. <i>Source:</i> 7 th Annual Report
	Consulting engineer submitted list of wells that could be used to develop groundwater level map for 1986. <i>Product:</i> Letter Report Dated March 22, 1997 <i>Source:</i> 8 th Annual Report <i>Work Done By:</i> CDM
	Consulting engineer developed a groundwater level contour map for 1986 and submitted to Chief of Watermaster Services. <i>Product:</i> 1986 Groundwater Level Contour Map <i>Source:</i> 9 th Annual Report <i>Work Done By:</i> CDM

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(continued)

Period	Title/Description
1986-87	<p>Consulting engineer used groundwater level data from Task Order 84-1A and computer simulation results from SARWQCB and developed methodology for estimating volume of water in storage for Chino Basin.</p> <p><i>Product:</i> Set of Computations and Presentation <i>Source:</i> 10th Annual Report <i>Work Done By:</i> CDM</p>
1988-89	<p>Task Order 84-1A: Develop Groundwater Monitoring Program</p> <p>As part of the initial findings from the meetings of the Ad Hoc Committee to address the OBMP, it was determined that it was essential to design and execute a groundwater monitoring program in order to develop a groundwater management plan. Watermaster retained a consultant to develop the long-term groundwater-monitoring program. Work consisted of two phases: development of the plan and; conducting the first round of sampling under the plan.</p> <p><i>Source:</i> 12th Annual Report <i>Note:</i> 14th Annual Report states the project previously known as "Water Well Data" was renamed to incorporate additional scopes of work.</p>
1989-90	<p>The preliminary groundwater-monitoring program was continued based on cooperative efforts of members of the Appropriative and Overlying (Non-Agricultural) Pool producers. The consultant coordinated the sampling and analysis for approximately 70 wells in the agricultural area and 280 wells from the Overlying (Non-Agricultural) and Appropriative Pools.</p> <p><i>Product:</i> Task 1 Report – Develop Preliminary Monitoring Program <i>Source:</i> 13th Annual Report <i>Work Done By:</i> JMM</p>
1989-90	<p>Monitoring plan was executed in the fall of 1989.</p> <p><i>Product:</i> Task 2 Report – Conduct Initial Round of Groundwater Monitoring Program <i>Source:</i> 13th Annual Report <i>Work Done By:</i> JMM</p>
1991-92	<p>Monitoring program was continued in the winter of 1991. General minerals and groundwater level data were collected from 283 wells. Approximately 64 wells were monitored by consultant during the program and the remainder were monitored by cooperating agencies.</p> <p><i>Product:</i> Chino Basin Groundwater Monitoring Program – Winter 1991 <i>Work Done By:</i> MJWWRE</p>
1992-93	<p>Monitoring plan was continued in the winter of 1992.</p> <p><i>Product:</i> Chino Basin Groundwater Monitoring Program – Winter 1992 <i>Source:</i> 15th Annual Report <i>Work Done By:</i> MJWWRE</p>
1995-96	<p>Monitoring plan was re-implemented in fall and winter of FY 1995-96. Watermaster staff collected samples and groundwater level data.</p> <p><i>Source:</i> 19th Annual Report <i>Work Done By:</i> MJWWRE and Watermaster staff</p>

APPENDIX O-2
(continued)

Period	Title/Description
1996-98	<p>Monitoring plan was continued in fall and winter of FY 1996-97. Watermaster staff collected samples and groundwater level data. Report, including data from three sampling periods, was presented to the committees in October of 1997.</p> <p><i>Product:</i> Chino Basin Groundwater Monitoring Program – Winter 1992 <i>Source:</i> 20th Annual Report <i>Work Done By:</i> MJWWRE and Watermaster staff</p>
	<p>Review of the City of Fontana’s Claim to New Recharge from the Etiwanda-San Sevaine Project</p>
1989-90	<p>Engineering analysis of Fontana’s claim for new water that could be developed from the San Sevaine Creek Water Project.</p> <p><i>Product:</i> Letter Agreement dated December 15, 1989 <i>Source:</i> Supplemental Report to the Court RE Motion to Review <i>Work Done By:</i> JMM</p>
	<p>Task Order 90-2: Develop Optimum Basin Management Program</p>
1989-90	<p>This effort consisted of a large, multifaceted study sponsored by the Chino Basin producers through Watermaster, including the 21 members of the Advisory Committee. Additional participating entities included CBMWD, WMWD, MWD and SAWPA. On January 23, 1990, the inaugural meeting of the Chino Basin Management Task Force was held and officers were selected. JMM was selected to develop a scope of work and by fiscal year end, shares of funding were being developed. The initial effort resulted in a Chino Basin Water Issues White Paper.</p> <p><i>Product:</i> Chino Basin Water Issues White Paper <i>Source:</i> 13th Annual Report <i>Work Done By:</i> JMM</p> <p>The Task Force was formed to conduct and finance the studies necessary to develop an optimum basin management program. A three-phase work plan was developed for review. Phase 1 identified water resources management goals and constraints; Phase 2 developed planning tools and evaluated alternative management plans; and Phase 3 was intended to develop a final recommended plan, including costs associated with implementation of the plan(s).</p> <p><i>Product:</i> Work Plan – Chino Basin Water Resources Management Plan <i>Work Done By:</i> JMM</p>
1989-91	<p>Phase 1 study completed. The water resources conditions in the Chino to Basin area were described; the Phase 2 scope of work was refined.</p> <p><i>Product:</i> Water Resources Management Issues, Goals, Constraints and Analytical Approaches <i>Source:</i> 14th Annual Report <i>Work Done By:</i> JMM</p>
1991-92	<p>The Task Force approved phase 2 and the consultant team conducted the technical work.</p> <p><i>Source:</i> 15th Annual Report <i>Work Done By:</i> JMM, CDM, CH2M Hill, MJWWRE and Diba Software Consulting Engineers</p>

APPENDIX O-2
(continued)

<u>Period</u>	<u>Title/Description</u>
1995-96	<p>Phase 2 work completed with final report submitted in September of 1995. Task Force deferred Phase 3 until certain institutional issues identified in the study could be worked out.</p> <p><i>Source: 19th Annual Report</i></p>
1990-91	<p>Task Order 90-1: Review of Socio-Economic Conditions</p> <p>Appropriative Pool conducted a review of the original socio-economic study and a preliminary review of existing socio-economic conditions. As a result of the review the Appropriative Pool solicited proposals from consulting firms and selected a firm to review socio-economic conditions.</p> <p><i>Source: 14th Annual Report</i></p>
1991-92	<p>Socio-economic study was conducted to determine if the replenishment formula as detailed in the Judgment is current with the economy. The Consulted presented the final report to the Appropriative Pool in July 1992. It included a re-evaluation and update of the 1977 study, with an emphasis on the physical solution gross/net formula, and the Appropriative Pool charges. Extensive use of figures were used to illustrate historical and projected trends in water demands and related costs.</p> <p><i>Product: Socio-Economic Study Report – June 24, 1992</i> <i>Source: 15th Annual Report</i> <i>Work Done By: JMM, Grant Hoag, Project Engineer</i></p>
1993-95	<p>Task Order WM95003: Watermaster Participation in the Association of Groundwater Agencies Study of Conjunctive Use</p> <p>Study designed to identify conjunctive use programs that provide a regional benefit. AGWA and MWD funded the study. Work completed by consultants in the next fiscal year.</p> <p><i>Source: 17th Annual Report</i> <i>Work Done By: Montgomery Watson, MJWWRE and Bill Dendy and Associates</i></p>
1994-96	<p>Storage Limits</p> <p>Watermaster considered establishing storage limits on the amount of local water in storage accounts. A consultant was hired to review the available information on projected storage account balances and losses from storage accounts due to increased outflow to the Santa Ana River.</p> <p><i>Product: Letter Report</i> <i>Source: 18th Annual Report</i> <i>Work Done By: MJWWRE</i></p>
1995-96	<p>Review of Recapture of Chino Basin Groundwater for Norco Pipeline Losses</p> <p>The City of Norco lost between 300 and 400 acre-feet of Chino Basin groundwater in a pipeline rupture. The water was accidentally discharged to the Santa Ana River. A study was done to determine if any of this water was recharged back into the Chino Basin in the Santa Ana River streambed.</p> <p><i>Product: Letter Report</i> <i>Source: 19th Annual Report</i> <i>Work Done By: MJWWRE</i></p>

APPENDIX O-2
(continued)

<u>Period</u>	<u>Title/Description</u>
1995-96	<p>Request for Determination for Credit Related to Chino Basin Recharge from Cucamonga Basin Flows Discharged Through the Eddy Tunnel</p> <p>Groundwater discharged from the Cucamonga Basin via the Eddy Tunnel flood control facilities recharges into a conservation basin in the Chino Basin. An investigation was done to quantify the amount of recharge into the Chino Basin and determine if it was new recharge (yield).</p> <p><i>Product: Letter Report</i> <i>Work Done By: MJWWRE</i></p>
1995-97	<p>Recharge Master Plan</p> <p>Watermaster, in conjunction with the CBWCD (Chino Basin Water Conservation District), started a three-phase investigation to develop an optimum recharge plan for the Chino Basin. The master plan effort was motivated by recognition from the Chino Basin Water Resources Management Study of potential limitations on future groundwater replenishment capabilities as groundwater production increases. Draft Phase 1 report submitted for comment in May of 1997. Completion expected during 1997-98.</p> <p><i>Product: Draft Report Chino Basin Recharge Master Plan</i> <i>Source: 19th Annual Report</i> <i>Work Done By: MJWWRE</i></p>
1995-96	<p>Recharge Impact Analysis from San Sevaine Creek Water Project</p> <p>Watermaster in conjunction with the SBCFCD is conducting a study of the impact on groundwater recharge caused by the construction of flood control improvements on Etiwanda and San Sevaine Creeks. Several meetings and data reviews have occurred. Results, pending final data reviews by SBCFCD are expected during FY 1997-98.</p> <p><i>Work Done By: MJWWRE</i></p>
1995-97	<p>Recharge Water Quality Monitoring</p> <p>In conjunction with the CBWCD, a surface-water runoff water quality-monitoring program was started in eight flood retention/spreading basins in the Chino Basin. The purpose of the water quality monitoring was to determine the general chemistry of local runoff prior to expanding recharge capacity and to determine if water quality assumptions used by the RWQCB in the Basin Plan were correct.</p> <p><i>Product: Tables and Lab Reports</i> <i>Source: 19th Annual Report</i> <i>Work Done By: MJWWE, CBWM and CBWCD staff</i></p>
1997-98	<p>Water quality sampling was continued and expanded to all significant flood retention/spreading basins in the Chino Basin.</p> <p><i>Product: Tables and Lab Reports</i> <i>Source: 20th Annual Report</i> <i>Work Done By: MJWWRE, CBWM and CBWCD staff</i></p>
1996-98	<p>JPAC (Joint Program Advisory Committee)</p> <p>The JPAC reviews technical issues regarding the SSS (Seasonal Storage Service) Program and how other MWD programs impact credits. The JPAC also reviews all MWD storage agreements and transmits the results of its review to the MWD Board of Directors. The Orange County Cyclic Agreement was reviewed and the comments from Watermaster were incorporated in the agreement to maintain the cyclic program's current structure. Without input from Watermaster, the cyclic program would have fundamentally changed and been discontinued in the Chino Basin.</p> <p><i>Product: Tables and Memoranda</i> <i>Work Done By: MJWWRE and CBWM staff</i></p>

APPENDIX O-2
(continued)

<u>Period</u>	<u>Title/Description</u>
1997-98	<p>Historical production data and future production projections were developed for use by Watermaster to allow MWD to deliver water by exchange through area agencies to its cyclic account.</p> <p><i>Product: Tables and Memoranda</i> Work Done By: MJWWRE and CBWM</p>
1996-97	<p>Five Year Replenishment Plan</p> <p>Five-year future production estimates were prepared for Watermaster to allow MWD to project future water needs from the Watermaster. The estimate focused on Watermaster's projected need for imported water to offset over production within the Basin.</p> <p><i>Product: Tables and Memoranda</i> <i>Work Done By: MJWWRE and CBWM staff</i></p>

