

DIVISION ENGINEER'S  
ANNUAL REPORT  
IRRIGATION DIVISION NO. 2  
1986 Irrigation Year  
Nov. 1, 1985 - Oct. 31, 1986

Submitted to:  
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by:  
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(1986 Irrigation Year)

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INTRODUCTORY STATEMENT  
ANNUAL DIVISION ENGINEER'S REPORT  
IRRIGATION DIVISION NO. 2  
PUEBLO, COLORADO  
1986

This report is the annual summary compiled by the Division Engineer's office for the State Engineer, and is a summary of water administration activities completed or in progress as of October 31, 1986. It attempts to identify upcoming problems and work items for Irrigation Year 1987. The recommendations portion of this report is respectfully submitted to the State Engineer to assist him to formulate administrative policy and guidelines with regards to personnel and water administration as more fully defined in section 37-80-101-109, CRS, 1973 (Amended).

AREAL EXTENT

IRRIGATION DIVISION NUMBER 2 CONSISTS OF ALL LANDS WITHIN THE ARKANSAS RIVER DRAINAGE, INCLUDING ITS TRIBUTARIES AND ALL LANDS IRRIGATED FROM DITCHES AND CANALS DIVERTING WATER FROM SAME. THE DIVISION IS COMPOSED OF THIRTEEN WATER DISTRICTS (10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 66, 67 and 79) COMPRISING THE COUNTIES OF EL PASO, CHAFFEE, LAKE, FREMONT, CUSTER, PUEBLO, PARK, LAS ANIMAS, TELLER, CROWLEY, OTERO, BENT, PROWERS, BACA AND KIOWA.

## WINTER WATER PROGRAM

The 1986 Winter Water Program which commenced November 15, 1985 and concluded March 14, 1986, has maximized use of irrigation water normally applied in the winter months by storing said water for summer application as summarized by the winter storage table, Sec. III. This is the tenth year of operation of the Winter Water Program since its inception in irrigation year 1976. (Irrigation year 1978 being the only nonoperational year). Winter Storage in Pueblo Reservoir was curtailed to 30,000 A.F. because of lack of storage space in the reservoir. It was the opinion of participants that they could not use any more than 30,000 A.F. before it would have to be evacuated from the reservoir. The ditch companies also had an opportunity to release their winter stored water before March 1, 1986, and not be charged for it by the Bureau of Reclamation, if the water was not beneficially used by ditches calling for the release. Three participants elected to do this, the Riverside, West Pueblo and the Otero Canal. Several direct flow ditch companies also elected to run water directly during the Winter Storage period, this was accomplished by allowing direct diversion in the amount calculated from percentages of allowable storage. The basic formula for the Winter Storage Program is:

- A. By foregoing winter diversion, the water will be accounted for by diversion headgates or by storage in Pueblo Lake on a percentage basis of the total river production.
- B. A division of total river production below 100,000 A.F. entitled the four storage reservoirs 70 percent of the river flow and the seven ditches with direct flow rights, 30 percent of the river flow.
- C. The next 2,750 A.F. went to the Amity Canal.
- D. After the system reaches 102,750 A.F., 2,250 A.F. of water was released pro-rata from winter water stored in seven reservoirs upstream of Pueblo and credited to the Colorado Canal in Pueblo Reservoir. (Not applicable this year.)
- E. A division of total river production above 105,000 A.F. entitled the four storage ditches 75 percent of the river flow and the seven ditches with direct flow rights, 25 percent of the river flow.
  1. Calculation of the transit loss would be based on the Livingston Formula.
  2. Water destined for Amity would be taken at John Martin Dam and would not be depleted by transit loss from Las Animas gage station. Any transit loss that occurred from the Las Animas gage to John Martin would come from the other participating ditch companies with the exception of the Fort Lyon, whose pro-rata share would be paid pro-rata by the other participants.

## ARKANSAS COMPACT OPERATIONS

Again this year water allocation was per the Operating Plan adopted by the Arkansas River Compact Administration on April 14, 1980.

The 1986 Irrigation Year marks the first year that Kansas has called for release from their account during a Winter Storage period. Kansas began releases for irrigation in March while Colorado Ditches called for irrigation releases in November, February and March. There was no storage by Fort Lyon in John Martin during this report period; while the Article III water totaled 26,425.3 A.F. The total of Compact Water stored in John Martin Reservoir was 76,000 A.F. (Nov. 1-April 1.)

On Nov. 1, 1986, as per the 1980 operating plan, the Consolidated Ditch water stored in John Martin was rolled to the conservation pool.

The Division Engineer for Water Division II was once again elected Operations Secretary for the Compact Commission during the Administration meeting of December 9, 1986.

A significant amount of transmountain diversion water was undiverted into the Arkansas River drainage due to lack of storage because most reservoirs upstream of Pueblo are full.

There was storage of water in John Martin Reservoir this summer for the Amity Canal under its Great Plains decree. This was done under the authorization of the 1980 Operating Plan and with the consent of all upstream users, including the Fort Lyon. This water is in addition to their Winter Water and Compact Water. Thirty-five percent did go to the transit loss account (as it has in the past) as called for in agreement between the two states. The transit loss account will again be quite large, the unused amount is re-allocated each year.

Kansas has 97,372 A.F. in its account as of November 1, 1986. This is not counting their share of the water stored so far this winter.

Delivery to Kansas has been, by runs, instead of by months as we did last year. All Kansas runs were delivered. Some of the over delivery was due to there being a precipitation event on the rundown period after the run was shut off. These events generally were the reason for the shut off.

There were two storage events on Muddy Creek when small amounts were measured, then stored in the permanent pool.

There was one period in May when a call from water rights below John Martin was effective above John Martin.

## PUEBLO RESERVOIR OPERATIONS

From December 4, 1985 through April 11, 1986, the Bureau of Reclamation permitted water to be stored in the joint use pool. The joint use pool is a space above the conservation pool which can be used during winter months, but must be evacuated by April 15 for flood protection.

The maximum contents reached in Pueblo Reservoir was 278,873 A.F. This was attained February 26, 1986.

In accordance with the allocation principles of the SECWCD, project water purchased for agricultural purposes can be retained until May 1 of the following year, and project water purchased for domestic use can be carried over from year to year.

On May 1, 1986, the Division of Water Resources transferred 167 A.F. of unused 1985 Irrigation Project water into the SECWCD account, and transferred all unused Domestic Project water into project carryover accounts.

As of March 1, 1986, all of the entities storing Winter Water in Pueblo Reservoir were notified that 11,677 A.F. would have to be released before April 15, 1986, in order to reach the bottom of the joint use pool. All of this water was called for and put to beneficial use.

Starting June 10, because of a full conservation pool, all storage except project water was suspended. On August 11, there was resumption of temporary account storage.

There was no flooding, such that the flow at Avondale gage reached 6,000 c.f.s. thus not causing storage of flood waters in the Pueblo Reservoir flood pool during Irrigation Year 1986.

Because John Martin Reservoir did not spill, Pueblo Reservoir did not store water under its own junior 1939 Storage Right.



GROUND WATER WELL INSPECTIONS

There were 105 applications to late register existing domestic wells that were individually field checked. Over 2,350 miles were driven in field checking late registration applications.

In 1986, other well permits issued were as follows:

| Numbers | Type   |
|---------|--|
| 306     | Domestic or Livestock                              |
| 282     | Household Use Only                                 |
| 64      | Exempt Replacements                                |
| 12      | Exempt Commercial                                  |
| 60      | Wells in Subdivisions with<br>Decreed Water Rights |
| 9       | Senate Bill 5 Wells                                |
| 80      | Replacements for Decreed Wells                     |
| 50      | Monitoring Wells                                   |
| 52      | Well Permit Denials                                |

JOHN MARTIN RECREATION POOL

Inflow and releases from Recreation Pool, John Martin Reservoir.

During Irrigation Year 1986, no releases were made from the Recreational Pool.

Maximum storage occurred in November at 9,160 A.F. Winter evaporation consisted of a total of 295.4 A.F. resulting in 8,864 A.F. being carried forward to the summer Permanent Recreation Pool. Inflow into the Recreation Pool occurred on two occasions, July 1 and September 1 for 136.6 A.F. and 61.7 A.F. respectively, stored under Division of Wildlife's Muddy Creek Decree. Summer evaporation from the Permanent Recreation Pool totaled 1,245 A.F.

### REGULAR PARTICIPATION

There were four Winter Water Meetings held to report on the progress of the 1986 Irrigation Year program for which the Division Office keeps records. There has been agreement on the proposed decree for Winter Water since the last annual report, so that the drafting and nurturing of that decree, language and mechanisms, is drawing to an end.

The Division Engineer, as he has in past years, attended all special and regular meetings of the Southeastern Colorado Water Conservancy District. There were approximately 15 of these, during which the Division Office makes a report giving the contents of the major reservoirs and flows of rivers, and a summary of administration within the Division. The meetings usually have a question and answer session during which the local paper and occasionally T.V. and radio media coverage. Quite often the Division Engineer's report/comments are quoted by these news media.

There are a total of five conservancy districts within Division 2. The Staff has attended approximately 15 meetings of the Purgatoire District. The Upper Arkansas Conservancy District meetings were attended by Bruce Smith, Water Commissioner of District 11 on eight occasions.

Because of the Kansas-Colorado suit on the Arkansas River Compact the Division Office has found it necessary to establish the 1 FTE position of P. O. Abbott to handle liason engineering work for this case. The Arkansas River Compact has been increasing by taxing on the Division Engineer's time and will continue in the foreseeable future, particularly since the Division Engineer was re-elected as Operation's Secretary.

## OFFICE INVOLVEMENT IN THE WATER USER COMMUNITY

### Invited Participation

On January 10, 1986, there was a Winter Water meeting in La Junta, specifically discussing the probability of John Martin Reservoir spilling. At this meeting it was agreed that Amity Canal would receive a 2% increase of its shared percentage while Fort Lyon would remain the same. From this meeting came the 71.2% and 28.8% split for reservoir and ditch rights, that were used in the application for a decree for the Winter Storage Program, Water Case 84CW179.

On February 6, there was a Wet Mountain Valley Water meeting and tour of the area. The main topic was Augmentation Plans and how they interface with Historic Surface Rights.

On February 7, there was a Winter Water Board of Trustees meeting held mainly to discuss the March 1 deadline for purchase of winter water for storage. The vote for accepting Amity's January 10 proposal, with request to the Fort Lyon waters owed fell short of unanimous vote.

On February 24, KRDO Channel 13 conducted an interview with the Division Engineer's office regarding a series of programs relating to the water user community and possible effects of water transfers to out-of-basin cities.

On February 25, there was a meeting and tour with the Corps. of Engineers regarding Lake Cheraw's possible requirement for a 404 permit. Also water quality was discussed with the U.S.G.S.

On March 14, the Board of Trustees meeting of the Winter Storage Program occurred with the main order of business being discussion of the Amity and Fort Lyon proposals relating to the proposed Winter Storage decree. The

February 7 motion passed unanimously.

On April 8, there was a tour of Colorado Springs to inspect water treatment plants on the Garden of the Gods Mesa and Northern Colorado Springs. This tour also inspected the Las Vegas Treatment plant and its outfall through which a lot of Colorado Springs' transmountain return flows are measured and released.

On April 29, 30 and May 1, there was a tour of irrigation ditches in Colorado and Kansas for consultant engineers, personnel of the Colorado Springs Department of Utilities, attorneys of Arkansas Valley firms and firms representing the Colorado Attorney General, in preparation for the Kansas vs. Colorado lawsuit over the Waters of the Arkansas River.

On July 16-22, a tour of irrigation ditches in Colorado and Kansas with personnel of Hill and Robbins law firm, the Engineering Section of the State Engineer's Office, Boyle's Engineering Corporation, and Dames and Moore. The object of the trip was for familiarization of the area for all parties involved in engineering preparation for the Kansas vs. Colorado lawsuit.

On August 19 and again on August 20, an air tour of the Arkansas River basin between Pueblo Dam and Garden City, Kansas, including Trinidad Dam on the Purgatoire River, was conducted with personnel of Hill and Robbins, Boyle Engineering and an Engineering Section of the State Engineer's Office. The purpose of these air tours were for further familiarization of all parties concerned with the area covered in engineering studies being made in preparation for the Kansas vs. Colorado lawsuit.

On September 26, there was a Winter Water meeting, at which plans for the 1986-87 Winter-Water season were discussed.

On October 2, the Arkansas Valley Ditch Association conducted its

meeting.

On October 1, the Division Engineer attended the El Paso Club meeting and gave a presentation concerning water administration in the Arkansas River.

FURTHER INVOLVEMENT IN WATER USERS COMMUNITY

During Irrigation Year 1986 no meetings with water users of Districts 14, 17, or 67 were conducted. There was a call through John Martin from May 20, through May 26, by the Amity (2/21/1887). The agreement entitled Agreement "B" signed November 1, 1984, by water users of Water Districts 14, 17 and 67 and by the Division Engineer; defines when a call from Water District 67 will be enforced above John Martin. That agreement is now and shall remain in effect until an affected party demonstrates injury. Such injury not having been proven, nor even claimed provides the condition for a continuing agreement, (See April 14, 1980 Operating Plan). Agreement B is the ongoing support documentation that Agreement "A" governs calls. The above Amity call was pursuant to Agreement A, article 2, which says:

Any single ditch below John Martin can, if not satisfied by antecedent flow, call on ditches above John Martin when their account in John Martin that is derived from water transferred from the conservation pool is at or below their proportional share of a 17,500 A.F. pool and not before.

This condition having been met, the call did propagate through John Martin Reservoir.

The Division Engineer conducted/participated in over a dozen tours in the Arkansas River Drainage, some of which are listed under Invited Participation in this report.

## KANSAS-COLORADO LAWSUIT PROGRESS

State of Kansas vs. Colorado, No. 105, Original, which was filed by Kansas on December 16, 1985, has considerably increased the Division 2 work load. The function of the Division 2 office in regard to Case No. 105 has been to act as liaison between engineering consultants and basin water users and to supplement the information gathering process. This activity has been carried out by Division Engineer Jesse and a Water Resource Engineer, P. O. Abbott, hired by the State for this purpose. Abbott worked from April 7 through October 7 on contract and subsequently was appointed to a full time position. Liaison activities conducted by the Division Office are as follows:

April 29-May 1: Conducted tour of irrigation ditches in Colorado and Kansas for personnel of Colorado Springs Department of Utilities, consulting engineers and attorneys.

July 16-22: Conducted tour of irrigation ditches in Colorado and Kansas for personnel of Hill and Robbins law firm, Boyle Engineering Corporation, Dames and Moore and the Denver office of the State Engineer.

August 11: With Boyle Engineering and Hal Simpson, met with Director of Southeastern Water Conservancy District, Bureau of Reclamation, U. S. Geological Survey.

August 19 and again on August 20: Conducted an air tour of Arkansas River valley for personnel of Boyle Engineering Corporation and the Denver office of the State Engineer.

August 19: Supplied C. J. Reich data on Project Water Allocation, Transit Loss study reports, Maps of SECWCED boundaries information on rainfall-runoff reports and ground water reports.

Sept. 3: Supplied C. J. Reich with data I was able to locate on his request list of 8/5/86.

Sept. 11: With Bill Steele of Boyle Engineering Corporation met with Joe Mahaney of CF&I Steel, Bill Mullen of Bessemer Irrigating Company and Eddie Taylor and Gary Wallace of Holbrook Mutual Irrigation Company.

Sept 17: With Bill Steel of Boyle Engineering Corporation met with Frank Milenski and Wayne Whittaker of Catlin Canal Company, George Watson of Rocky Ford Ditch Company, and Donald R. Halffield and Albert McCracken of Las Animas Consolidated and Consolidated Extension Canals.

Sept. 18: With Steele met with Leo Idler of Fort Bent Ditch Company, Ernie Hofmeister of Lamar Canal and Irrigating Company, Jake Broyles of Kessie Ditch, William C. Thraillkill of the City of Lamar and Jim Rogers of the Hyde Ditch.

Sept. 19: With Steele met with Lewis Davis of Amity Canal, Harry Bates, of Buffalo Mutual Irrigation Company, Clyde B. Kennedy of Manvel Canal and



Sept. 22: With Steele met with Melvin Rich of the Excelsior Ditch Co., Bob Hamilton and Allen Ringle of Colorado Canal Co., Lake Meredith Reservoir Co., Lake Henry Reservoir Co. and Foxley & Co. and with Lee Hancock, Olan Jones and Hugh Pickrel of the High Line Canal Co.

Sept. 29: With Charles J. Reich of Boyle Engineering Corporation, met with Bob Rounph of the Pueblo office of the U. S. Army Corps. of Engineers, then attended Winter Water meeting in La Junta.

Oct. 6 and 7: Arranged a series of meetings where a team consisting of Dennis Montgomery of Hill and Robbins, Dan Boyd of Boyle Engineering Corporation and Bill Attwooll of Dames and Moore, who reported progress of lawsuit to water users in the valley. Meetings were held in Granada, Lamar, Las Animas and Rocky Ford. The team, joined by David Robbins also gave the same presentation in Pueblo.

Oct. 9: With Reich met with Carmel Garlutz and Pat Hines of the Purgatoire River Water Conservancy District and later toured the irrigation area of that district with Danny Marques, W. D. 19 Commissioner. Also met with Monk Jowell and Tom Tefertilles of Oxley, who farm under the Model Ditch.

Oct. 16: Supplied C. J. Reich with information on Pueblo and Trinidad Reservoir evaporation charges.

Oct. 20: Supplied C. J. Reich data on monthly evaporation, John Martin Reservoir.

Oct. 23: Supplied Bill Steele with information on Pueblo Winter Water.

COLORADO/KANSAS LAWSUIT continued

Other activities by the Division office included a field check of the 1985 irrigated acreage survey. This required a tour of the basin from Canon City to the Kansas line and the irrigated area downstream from Trinidad Dam. A bibliography of consultant engineering reports was compiled, which listed case filings in the Division 2 Water Court for use in the bibliography compiled by Boyle Engineering Corporation. There is currently work on an analysis of water rights sales and transfers that would be reflected in valley diversion records, and a preliminary tabulation of native flow of the Arkansas River at Canon City (1925-75).

The Honorable Wade H. McCree, Jr., presently with the University of Michigan Law School, has been appointed Special Master to hear State of Kansas vs. State of Colorado, No. 105, Original. On August 20, 1986, a conference was held with Special Master McCree, attended by Attorney General Robert Stephan, Richard Simms, John Campbell, Lee Rolf and David Pope for Kansas; and Duane Woodward, Bill McDonald, Jeris Danielson, Dennis Montgomery and David Robbins for Colorado. An attorney for the U. S. Department of Justice was also present. It was agreed during this meeting that case preparation would occur over the following eighteen months, that discovery could be undertaken during that period, and that an additional period of four months would be provided for additional discovery after the engineering studies had been completed. It was also decided that another status conference would be held in about six months from the August date, no time was set.

Boyle Engineering has delivered a preliminary data report to the Water Resources Division of the State Engineer's office and to the Special Attorney's office. A copy has not been received in the Division 2 office.

## PERSONNEL

There have been numerous personnel changes in Division 2 during the 1986 Irrigation Year.

In December, 1985, Esther Gonzales laterally transferred to the Department of Rehabilitation. Elinor Meiskey assumed Esther's duties in 1986. Tom Simpson's option of hydrography was changed to administration for his Engineering Technician I position. This change of duties was necessary because of the extended sick leave of Jim Kasic. Mary Ann Ridenour started work in April, doing data entry on a part time basis. Her work has continued through the Irrigation Year. The Deputy Water Commissioner position in Water District 13, formerly held by Bob Kattnig, was vacated in May and has remained vacant throughout Irrigation Year 1986.

P. O. Abbott was hired under contract from April through October, 1986, to aid in collection and interpretation of data for the Colorado-Kansas lawsuit. This contract position became permanent in October as a Water Resource Engineer C position. On July 5, Jim Kasic passed away after a lingering illness. His absence was felt both because of the loss of his work product and also because he was a respected comrade. Mike Fairbanks transferred to Denver in August to fill a well inspector's position. Craig Lis was employed in September in the Water Resource Engineer A position.

Public contacts include office walk-ins, telephone calls and person-to-person contacts. Non-irrigation season public contacts average 788 per month, while, the irrigation season averaged nearly 1,960 per month with a high in July of 2,223. Overall, Division 2 personnel, including office personnel and Water Commissioners, made over 18,000 public contacts in I. Y. 1986.

The Division Engineer performed 232 consultations with the Referee. Personnel within the office made 234 court appearances.

## ARKANSAS COMPACT OPERATIONS, EXECUTIVE OVERVIEW

The Arkansas River Compact, again in the year of '86, consumed a tremendous amount of the Division Engineer's time and staff time. We had only the one meeting in December. The engineering consultants have been appointed and are in the process of collecting data for the proposed suit. The Division office has been allocated one FTE for the liaison between the engineering committee. The Compact meeting in December of '86 was comparatively uneventful for Compact meetings. There have been no conclusions on any of the engineering, there has been no further action except the appointing of the Master. The suit appears to be going to go on for at least two more years. I don't see the Division office being any less involved and have had very good cooperation, to date anyway, from all parties, including the water users. There is a sense of urgency on all sides in how we're going to conclude this case. We do talk about the Compact and its administration in other paragraphs in the Division report and won't go into any numbers in this paragraph.

## AUGMENTATION WATER

There are two organizations whose principal business is to provide augmentation water to non-exempt tributary wells. These are the Colorado Water Development and Protective Association, 568 member wells, and the Lower Arkansas Water Management Association, 410 member wells. The Lower Arkansas Water Management Association decree (82CW09) was signed by Judge Tracey on August 5, 1986, and it decrees eight wells as alternate points of diversion to the Buffalo Ditch to irrigate approximately 3,000 acres. CWDPA has not, as of this date, yet applied to Water Court to decree a Plan of Augmentation to cover its work.

As of January 1, 1987, there are 96 decreed Plans of Augmentation varying in size from one well to 250 wells. 81 of these plans are in operation.

There were 6 new Plans of Augmentation decrees in 1986.

In 1986, 37.25 shares of Twin Lakes water was released for 15 Plans of Augmentation that use Twin Lakes water.

The administration of Plans of Augmentation will change in 1987 I. Y. to a management mode. This will be accomplished by putting all augmentation plans on a D-base III system, which will provide monthly accounting of Plans of Augmentation as well as monitor required reporting, identify all diversion points, identify and quantify augmentation sources and finalize accounting at the end of the Irrigation Year. This approach will allow the Division Engineer to have a plans of augmentation review-at-a-glance. All salient features of the active plans of augmentation will be included and will be retrievable by Water District so that specific directions with regard to administration of plans of augmentation may be forwarded to each Water Commissioner monthly. Each plan of augmentation will have an actual monthly accounting of plans of augmentation activity, which may be forwarded to users for verification and information.

1985-1986

WINTER WATER STORAGE SUMMARY

(PUEBLO RESERVOIR)

| <u>CANAL</u>               | <u>ACTUAL STORAGE A.F.</u>   |
|----------------------------|------------------------------|
| BESSEMER                   | 6945.00                      |
| HIGHLINE                   | 9327.00                      |
| OXFORD                     | 2250.00                      |
| CATLIN                     | 10257.00                     |
| RIVERSIDE-WEST PUEBLO      | 450.00*                      |
| OTERO                      | 771.00*                      |
| CONSOLIDATED (JOHN MARTIN) | 5025.00                      |
|                            | <u>DIRECT DIVERSION A.F.</u> |
| BESSEMER                   | 275.31                       |
| HIGHLINE                   | 3661.78                      |
| OXFORD                     | 817.50                       |
| CATLIN                     | 2579.03                      |

\* RELEASED TO RIVER

(OFF CHANNEL STORAGE)

|                      | <u>ACTUAL STORAGE A.F.:</u> |
|----------------------|-----------------------------|
| FORT LYON            | 82,204.90                   |
| HOLBROOK             | 11,414.05                   |
| COLORADO             | 13,945.20                   |
| AMITY (GREAT PLAINS) | 23,686.96                   |
| AMITY (JOHN MARTIN)  | 17,325.00                   |

The first release of Winter Water from Pueblo Reservoir began before the program ended when the Bessemer Ditch called for water on March 1, 1986. The other ditches with water in Pueblo Reservoir began calling for water during the month of March. All of the Winter Water was released by May 28, 1986, with the exception of 253.86 A.F. of Bessemer Winter Water, which was released to the river June 18, 1986, when Pueblo Reservoir entered the flood pool.

TRANSMOUNTAIN DIVERSIONS SUMMARY

| W.D.  | RECIPIENT           | PREVIOUS YR |      | YR OF RECORD |      | W.D. | SOURCE              |
|-------|---------------------|-------------|------|--------------|------|------|---------------------|
|       |                     | A.F.        | DAYS | A.F.         | DAYS |      |                     |
| 14    | CITY OF PUEBLO      | 1360        | 149  | 1070         | 78   | 11   | EWING DITCH         |
| 14    | CITY OF PUEBLO      | 3830        | 150  | 3860         | 116  | 11   | MURTZ DITCH         |
| 14    | CITY OF PUEBLO      | 1920        | 158  | 1920         | 110  | 11   | COLUMBINE DITCH     |
| 17    | CATLIN CANAL        | 329         | 113  | 220          | 86   | 11   | LARKSPUR DITCH      |
| 11    | TURQUoise RES.      | 71800       | 167  | 31750        | 88   | 11   | BOUSTEAD TUNNEL     |
| ----- |                     |             |      |              |      |      |                     |
| 14    | CITY OF PUEBLO      | 6270        | 173  | 5510         | 177  | 11   | BUSK-IVANHOE TUNNEL |
| 14    | HIGHLINE CANAL      |             |      |              |      |      |                     |
| ----- |                     |             |      |              |      |      |                     |
| 14    | CITY OF PUEBLO      |             |      |              |      |      |                     |
| 10    | CITY OF COLO. SPGS. | 10180       | 128  | 16930        | 89   | 11   | HOMESTAKE TUNNEL    |
| 2     | CITY OF AURORA      |             |      |              |      |      |                     |
| ----- |                     |             |      |              |      |      |                     |
| 14    | CITY OF PUEBLO      | 8016        | 365  | 50600        | 298  | 11   | TWIN LAKES TUNNEL   |
| 10    | CITY OF COLO. SPGS. |             |      |              |      |      |                     |

RESERVOIR STORAGE SUMMARY

| W.D. | RESERVOIR NAME   | STREAM SOURCE        | PREVIOUS YR     |        |                          | YR OF RECORD    |         |                          |                |        |         |
|------|------------------|----------------------|-----------------|--------|--------------------------|-----------------|---------|--------------------------|----------------|--------|---------|
|      |                  |                      | BEG. YR<br>A.F. | %      | BEG. IRR. SEASON<br>A.F. | BEG. YR<br>A.F. | %       | BEG. IRR. SEASON<br>A.F. | END YR<br>A.F. |        |         |
| 11   | TURQUOISE RES.   | LAKE FORK CREEK      | 127934          | -34.32 | 84021                    | 48.84           | 125057  | -4.3                     | 119904         | 6.39   | 127560  |
| 11   | TWIN LAKES RES.  | LAKE CREEK           | 80454           | 62.71  | 130906                   | 7.06            | 140153  | -0.25                    | 139798         | -2.62  | 136223  |
| 11   | CLEAR CREEK RES. | CLEAR CREEK          | 2063            | 140.76 | 4967                     | 77.13           | 8798    | 17                       | 10294          | -7.2   | 9603    |
| 14   | PUEBLO RES.      | ARKANSAS RIVER       | 240714          | 19.61  | 287913                   | -17.14          | 245791  | 10.6                     | 271856         | -8.46  | 250646  |
| 19   | TRINIDAD RES.    | PURGATORIE RIVER     | 25200           | 27.36  | 32095                    | -95.49          | 16418   | 33.65                    | 21943          | -51.41 | 14492   |
| 67   | JOHN MARTIN RES. | ARKANSAS RIVER       | 204907          | 67.55  | 343323                   | -22.2           | 280952  | 13.66                    | 319346         | -41.11 | 226300  |
|      | TOTAL OTHERS     | ARKANSAS RIVER BASIN | 188154          | 80.49  | 339608                   | -30.42          | 260400  | 20.81                    | 314600         | -17.56 | 267600  |
|      | TOTALS           | ARKANSAS RIVER BASIN | 869426          | 40.64  | 1222833                  | -13.48          | 1077569 | 11.15                    | 1197741        | -16.01 | 1032424 |



WATER DIVERSION SUMMARIES BY DISTRICT

| W.D.  | OBSERVED RECORDINGS | TOTAL DIVERSIONS TO STORAGE |        | NUMBER OF ACRES IRRIGATED | AVERAGE A.F. PER ACRE | TOTAL DIVERSIONS NON-IRRIGATION |
|-------|---------------------|-----------------------------|--------|---------------------------|-----------------------|---------------------------------|
|       |                     | A.F.                        | A.F.   |                           |                       |                                 |
| 10    | 4099                | 62841                       | 0      | 11612                     | 3.45                  | 32051                           |
| 11    | 2198                | 130603                      | 111422 | 18852                     | 6.28                  | 137955                          |
| 12    | 4200                | 254690                      | 1184   | 12580                     | 16.94                 | NA                              |
| 13    | 698                 | 52889                       | 0      | 28033                     | 1.89                  | 0                               |
| 14    | 3594                | 320917                      | 31224  | 30992                     | 10.35                 | 52407                           |
| 15    | 1231                | 30427                       | 2212   | 4600                      | 5.58                  | 0                               |
| 16    | 2054                | 23366                       | 0      | 4700                      | 4.97                  | 0                               |
| 17    | 2887                | 924556                      | 405265 | 140000                    | 4.55                  | 405265                          |
| 18    | 693                 | 13598                       | 0      | 7700                      | 1.77                  | 0                               |
| 19    | 3523                | 83750                       | 56215  | 30000                     | 2.59                  | 5963                            |
| 66+67 | 300                 | 204557                      | 0      | 76837                     | 2.73                  | NA                              |
| 79    | 1436                | 18925                       | 0      | 5000                      | 3.79                  | 0                               |

26,913

WATER COURT ACTIVITIES

|  |           |
|--|-----------|
| No. Application for Decrees                | 123 Cases |
| No. Consultations with Referee             | 135 Cases |
| No. Decrees Issued (Includes 9 U.S. Cases) | 147 Cases |

TYPES OF RULINGS

|   |    |
|---|----|
| Findings of Diligence on Conditional Rights | 42 |
| Cancelled Conditional Rights                | 12 |
| Conditional Rights Made Absolute            | 12 |
| Cases Dismissed                             | 21 |
| Augmentation Plans Approved                 | 7  |
| Cases Awarding New Wells                    | 28 |
| Cases Awarding New Springs                  | 9  |
| Cases Awarding New Hydro-Electric Plants    | 1  |
| Cases Awarding New Reservoirs               | 28 |
| Cases Awarding Change of Location           | 5  |
| Cases Awarding Change of Use                | 2  |
| Rulings on Protest to 1984 Abandonment List | 1  |
| Cases Appealed to Colorado Supreme Court    | 2  |

NEW STRUCTURES IN DECREE

|            |    |
|------------|----|
| Ditches    | 4  |
| Reservoirs | 22 |
| Wells      | 30 |
| Springs    | 15 |
| Other      | 1  |

WATER DIVISION NO. 2

ACTIVITY SUMMARY

| ACTIVITY  | MONTHLY TOTAL | FISCAL YEAR TO DATE |
|---|---------------|---------------------|
| Number of professional and technical staff  |               | 7                   |
| Number of clerical staff  |               | 2                   |
| Number of Water Commissioner FTE assigned (full and part-time)  |               | 18                  |
| Number of decreed surface rights  |               | *8,000              |
| Number of surface rights administered   |               | 8,000               |
| Number of wells   |               | ***23,170           |
| Number of plans for augmentation  |               | 55                  |
| Number of consultations with Referee  | 27            | 126                 |
| Number of Water Court appearances   | 27            | 137                 |
| Number of meetings with water users   | 516           | 7424                |
| Number of meetings to resolve water related disputes  |               |                     |
| Number of contacts to give public assistance on water matters (including telephone inquiries and an estimated number of contacts made by water commissioners) | 701           | 10308               |
| <hr/> <p>* Estimate from Tabulation.</p> <p>** All meetings were to resolve water problems.</p> <p>*** Includes Domestic.</p>                                 |               |                     |

RIVER CALL

| <u>DATE</u> | <u>CALL</u>  | <u>ENTITY</u>     | <u>DISTRICT OR DISTRICTS</u>   |
|-------------|--------------|-------------------|--------------------------------|
| 3/15/86     | 3/1/1887     | Fort Lyon #2      | 10, 11, 12, 13, 14, 15, 17     |
| 3/26/86     | 2/26/1887    | Oxford #2         | 10, 11, 12, 13, 14, 15, 17     |
| 3/27/86     | 12/3/1884    | Catlin            | 10, 11, 12, 13, 14, 15, 17     |
| 4/4/86      | 3/1/1887     | Fort Lyon #2      | 10, 11, 12, 13, 14, 15, 17     |
| 4/18/86     | 12/3/1884    | Catlin            | 10, 11, 12, 13, 14, 15, 17     |
| 5/7/86      | 3/11/1886    | Highline #3       | 10, 11, 12, 13, 14, 15, 17     |
| 5/8/86      | 3/1/1887     | Fort Lyon #2      | 10, 11, 12, 13, 14, 15, 17     |
| 5/11/86     | 3/11/1886    | Highline          | 10, 11, 12, 13, 14, 15, 17     |
| 5/14/86     | 12/3/1884    | Catlin            | 10, 11, 12, 13, 14, 15, 17     |
| 5/19/86     | 3/1/1887     | Fort Lyon #2      | 10, 11, 12, 13, 14, 15, 17     |
| 5/20/86     | 2/21/1887    | Amity             | 10, 11, 12, 13, 14, 15, 17, 67 |
| 5/27/86     | 3/1/1887     | Fort Lyon #2      | 10, 11, 12, 13, 14, 15, 17     |
| 5/28/86     | 5/1/1887     | Bessemer          | 10, 11, 12, 13, 14, 15, 17     |
| 5/29/86     | 1/6/1890     | Highline          | 10, 11, 12, 13, 14, 15, 17     |
| 5/30/86     | 9/25/1889    | Holbrook          | 10, 11, 12, 13, 14, 15, 17     |
| 6/1/86      | 6/20/1890    | Colorado          | 10, 11, 12, 13, 14, 15, 17     |
| 6/2/86      | 3/2/1892     | Holbrook Res.     | 10, 11, 12, 13, 14, 15, 17     |
| 6/4/86      | 1/25/1906    | Fort Lyon Stor.   | 10, 11, 12, 13, 14, 15, 17     |
| 6/10/86     | 1948         | John Martin       | 10, 11, 12, 13, 14, 15, 17     |
| 7/2/86      | 1/25/1906    | Ft. Lyon Storage  | 10, 11, 12, 13, 14, 15, 17     |
| 7/9/86      | 8/1/1896     | Kicking Bird      | 10, 11, 12, 13, 14, 15, 17     |
| 7/14/86     | 8/31/1893    | Fort Lyon #3      | 10, 11, 12, 13, 14, 15, 17     |
| 7/15/86     | 6/20/1890    | Colorado Canal    | 10, 11, 12, 13, 14, 15, 17     |
| 7/16/86     | 3/3/1890     | Otero             | 10, 11, 12, 13, 14, 15, 17     |
| 7/17/86     | 1/6/1890     | Highline          | 10, 11, 12, 13, 14, 15, 17     |
| 7/19/86     | 9/25/1889    | Holbrook          | 10, 11, 12, 13, 14, 15, 17     |
| 7/20/86     | 1948         | John Martin       | 10, 11, 12, 13, 14, 15, 17     |
| 7/23/86     | 3/9/1898     | Lake Meredith     | 10, 11, 12, 13, 14, 15, 17     |
| 7/26/86     | 6/9/1890     | Colorado Canal    | 10, 11, 12, 13, 14, 15, 17     |
| 7/27/86     | 1/6/1890     | Highline          | 10, 11, 12, 13, 14, 15, 17     |
| 7/28/86     | 9/25/1889    | Holbrook          | 10, 11, 12, 13, 14, 15, 17     |
| 7/31/86     | 3/1/1887     | Fort Lyon #2      | 10, 11, 12, 13, 14, 15, 17     |
| 8/4/86      | 8/31/1893    | Ft Lyon #3        | 10, 11, 12, 13, 14, 15, 17     |
| 8/5/86      | 1/6/1890     | Highline          | 10, 11, 12, 13, 14, 15, 17     |
| 8/6/86      | 3/1/1887     | Ft. Lyon #2       | 10, 11, 12, 13, 14, 15, 17     |
| 8/18/86     | 2/26/1887    | Oxford #2         | 10, 11, 12, 13, 14, 15, 17     |
| 8/23/86     | 9/25/1889 am | Holbrook          | 10, 11, 12, 13, 14, 15, 17     |
| 8/23/86     | 3/3/1890 pm  | Highline          | 10, 11, 12, 13, 14, 15, 17     |
| 8/24/86     | 8/31/93      | Fort Lyon #3      | 10, 11, 12, 13, 14, 15, 17     |
| 8/27/86     | 6/9/1890     | Colorado Canal    | 10, 11, 12, 13, 14, 15, 17     |
| 8/29/86     | 1/6/1890     | Highline          | 10, 11, 12, 13, 14, 15, 17     |
| 9/1/86      | 9/25/1889    | Highline          | 10, 11, 12, 13, 14, 15, 17     |
| 9/2/86      | 8/31/1893    | Fort Lyon #3      | 10, 11, 12, 13, 14, 15, 17     |
| 9/2/86      | 8/1/1896     | Great Plains      | 10, 11, 12, 13, 14, 15, 17     |
| 9/21/86     | 1/6/1890     | Highline          | 10, 11, 12, 13, 14, 15, 17     |
| 9/23/86     | 3/1/1887     | Ft. Lyon #2       | 10, 11, 12, 13, 14, 15, 17     |
| 10/12/86    | 9/25/1889    | Holbrook          | 10, 11, 12, 13, 14, 15, 17     |
| 10/18/86    | 8/1/1896     | Great Plains      | 10, 11, 12, 13, 14, 15, 17     |
| 10/31/86    | 3/9/1898     | Lake Meredith     | 10, 11, 12, 13, 14, 15, 17     |
| 11/7/86     | 4/3/1906     | Brush Hollow Res. | 10, 11, 12, 13, 14, 15, 17     |

RIVER CALL

| <u>DATE</u>                | <u>CALL</u> |                      | <u>DISTRICT OR DISTRICTS</u>   |
|----------------------------|-------------|----------------------|--------------------------------|
| 9-11-84                    | 8-31-1893   | Fort Lyon #3         | 10, 11, 12, 13, 14, 15, 17     |
| 9-12-84                    | 1-6-1890    | Highline #2          | 10, 11, 12, 13, 14, 15, 17, 67 |
| 9-15-84                    | 2-21-1887   | Amity                | 10, 11, 12, 13, 14, 15, 17, 67 |
| 9-16-84                    | 3-1-1887    | Fort Lyon #2         | 10, 11, 12, 13, 14, 15, 17,    |
| 9-30-84                    | 6-9-1890    | Colorado             | 10, 11, 12, 13, 14, 15, 17     |
| 10-2-84                    | 9-25-1889   | Holbrook             | 10, 11, 12, 13, 14, 15, 17     |
| 10-6-84                    | 8-1-1896    | Great Plains         | 10, 11, 12, 13, 14, 15, 17     |
| 10-15-84                   | 3-9-1898    | Lake Meredith        | 10, 11, 12, 13, 14, 15, 17     |
| 10-16-84                   | 1948        | John Martin          | 10, 11, 12, 13, 14, 15, 17, 19 |
| 11-15-84                   | 10-15-1907  | Mt. Pisgah           | 10, 11, 12, 13, 14, 15, 17     |
| 3-16-85                    | 8-1-1896    | Great Plains         | 10, 11, 12, 13, 14, 15, 17     |
| 4-10-85                    | 8-31-1893   | Fort Lyon #3         | 10, 11, 12, 13, 14, 15, 17     |
| 4-11-85                    | 3-3-1890    | Otero                | 10, 11, 12, 13, 14, 15, 17     |
| 4-15-85                    | 5-1-1887    | Bessemer #2          | 10, 11, 12, 13, 14, 15, 17     |
| 4-17-85                    | 3-1-1887    | Fort Lyon #2         | 10, 11, 12, 13, 14, 15, 17     |
| 4-20-85                    | 3-3-1890    | Otero                | 10, 11, 12, 13, 14, 15, 17     |
| 4-24-85                    | 9-25-1889   | Holbrook             | 10, 11, 12, 13, 14, 15, 17     |
| 4-29-85                    | 8-1-1896    | Great Plains         | 10, 11, 12, 13, 14, 15, 17     |
| 5-1-85                     | 1-25-1906   | Fort Lyon Storage    | 10, 11, 12, 13, 14, 15, 17     |
| 5-8-85                     | 1948        | John Martin          | 10, 11, 12, 13, 14, 15, 17     |
| 5-23-85                    | 1948        | John Martin          | 10, 11, 12, 13, 14, 15, 17     |
| 5-26-85                    | 1948        | John Martin Spilling | 10, 11, 12, 13, 14, 15, 17     |
| 6-29-85                    | 8-31-1893   | Fort Lyon #3         | 10, 11, 12, 13, 14, 15, 17     |
| 6-30-85                    | 8-3-1893    | Holbrook #2          | 10, 11, 12, 13, 14, 15, 17     |
| 7-2-85                     | 6-9-1890    | Colorado Canal       | 10, 11, 12, 13, 14, 15, 17     |
| 7-12-85                    | 1-6-1890    | Highline #2          | 10, 11, 12, 13, 14, 15, 17     |
| 7-21-85                    | 1948        | John Martin          | 10, 11, 12, 13, 14, 15, 17     |
| 8-7-85                     | 8-31-1893   | Ft. Lyon #3          | 10, 11, 12, 13, 14, 15, 17     |
| 8-8-85                     | 6-9-1890    | Colorado Canal       | 10, 11, 12, 13, 14, 15, 17     |
| 8-11-85                    | 3-1-1887    | Ft. Lyon #2          | 10, 11, 12, 13, 14, 15, 17     |
| 8-15-85                    | 5-1-1887    | Bessemer             | 10, 11, 12, 13, 14, 15, 17     |
| 8-16-85                    | 9-25-1889   | Holbrook             | 10, 11, 12, 13, 14, 15, 17     |
| 8-18-85                    | 5-1-1887    | Bessemer             | 10, 11, 12, 13, 14, 15, 17     |
| 8-19-85                    | 3-1-1887    | Ft. Lyon #2          | 10, 11, 12, 13, 14, 15, 17     |
| 8-20-85                    | 12-3-1884   | Catlin               | 10, 11, 12, 13, 14, 15, 17     |
| 8-26-85                    | 2-26-1887   | Oxford #2            | 10, 11, 12, 13, 14, 15, 17     |
| <del>8-20-85</del> 8-29-85 | 3-11-1886   | Highline             | 10, 11, 12, 13, 14, 15, 17     |
| 8-30-85                    | 12-3-1884   | Catlin               | 10, 11, 12, 13, 14, 15, 17     |
| 9-12-85                    | 2-26-1887   | Oxford #2            | 10, 11, 12, 13, 14, 15, 17     |
| 9-13-85                    | 9-25-1889   | Holbrook             | 10, 11, 12, 13, 14, 15, 17     |
| 9-23-85                    | 3-1-1887    | Ft. Lyon #2          | 10, 11, 12, 13, 14, 15, 17     |
| 10-8-85                    | 9-25-1889   | Holbrook             | 10, 11, 12, 13, 14, 15, 17     |
| 10-9-85                    | 1-6-1890    | Highline #2          | 10, 11, 12, 13, 14, 15, 17     |
| 10-12-85                   | 8-1-1896    | Great Plains         | 10, 11, 12, 13, 14, 15, 17     |
| 11-15-85                   | 10-15-1907  | Mt. Pisgah           | 10, 11, 12, 13, 14, 15, 17     |

RIVER CALL

| <u>DATE</u> | <u>CALL</u>                 | <u>DISTRICT OR DISTRICTS</u>   |
|-------------|-----------------------------|--------------------------------|
| 3-15-84     | 3-11-1886 Highline          | 10, 11, 12, 13, 14, 15, 17     |
| 3-16-84     | 3-1-1887 Fort Lyon #2       | 10, 11, 12, 13, 14, 15, 17     |
| 3-17-84     | 8-1-1896 Kicking Bird       | 10, 11, 12, 13, 14, 15, 17     |
| 4-9-84      | 6-9-1890 Colorado           | 10, 11, 12, 14, 15, 16, 17     |
| 4-11-84     | 8-1-1896 Kicking Bird       | 10, 11, 12, 13, 14, 14, 15, 17 |
| 4-12-84     | 1948 John Martin            | 10, 11, 12, 13, 14, 15, 17     |
| 4-15-84     | 8-1-1896 Kicking Bird       | 10, 11, 12, 13, 14, 15, 17     |
| 4-17-84     | 6-9-1890 Colorado           | 10, 11, 12, 13, 14, 15, 17     |
| 4-18-84     | 3-1-1887 Fort Lyon #2       | 10, 11, 12, 13, 14, 15, 17     |
| 4-21-84     | 8-1-1896 Kicking Bird       | 10, 11, 12, 13, 14, 15, 17     |
| 4-25-84     | 3-1-1887 Fort Lyon #2       | 10, 11, 12, 13, 14, 15, 17     |
| 4-26-84     | 9-25-1889 Holbrook          | 10, 11, 12, 13, 14, 15, 17     |
| 4-30-84     | 3- 3-1890 Otero             | 10, 11, 12, 13, 14, 15, 17     |
| 5-1-84      | 6-9-1890 Colorado           | 10, 11, 12, 13, 14, 15, 17     |
| 5-2-84      | 8-1-1896 Kicking Bird       | 10, 11, 12, 13, 14, 15, 17     |
| 5-3-84      | 10-15-1907 Mt. Pisgah       | 10, 11, 12, 13, 14, 15, 17     |
| 5-4-84      | 1948 John Martin            | 10, 11, 12, 13, 14, 15, 17, 19 |
| 5-7-84      | 8-1-1896 Kicking Bird       | 10, 11, 12, 13, 14, 15, 17     |
| 5-10-84     | 3-1-1887 Fort Lyon #2       | 10, 11, 12, 13, 14, 15, 17,    |
| 5-14-84     | 8-1-1896 Kicking Bird       | 10, 11, 12, 13, 14, 15, 17     |
| 5-21-84     | 1-25-1906 Fort Lyon Storage | 10, 11, 12, 13, 14, 15, 17     |
| 5-23-84     | 8-1-1896 Kicking Bird       | 10, 11, 12, 13, 14, 15, 17     |
| 5-24-84     | 1-25-1906 Fort Lyon Storage | 10, 11, 12, 13, 14, 15, 17     |
| 5-26-84     | 1948 John Martin            | 10, 11, 12, 13, 14, 15, 17     |
| 7-9-84      | 8-1-1896 Kicking Bird       | 10, 11, 12, 13, 14, 15, 17     |
| 7-12-84     | 1948 John Martin            | 10, 11, 12, 13, 14, 15, 17     |
| 7-18-84     | 8-1-1896 Kicking Bird       | 10, 11, 12, 13, 14, 15, 17     |
| 7-21-84     | 1-6-1890 Highline #2        | 10, 11, 12, 13, 14, 15, 17, 67 |
| 7-23-84     | 8-1-1896 Kicking Bird       | 10, 11, 12, 13, 14, 15, 17, 67 |
| 7-25-84     | 1-6-1890 Highline #2        | 10, 11, 12, 13, 14, 15, 17, 67 |
| 7-27-84     | 8-1-1896 Kicking Bird       | 10, 11, 12, 13, 14, 15, 17, 67 |
| 7-29-84     | 1-6-1890 Highline #2        | 10, 11, 12, 13, 14, 15, 17, 67 |
| 7-30-84     | 8-31-1893 Fort Lyon #3      | 10, 11, 12, 13, 14, 15, 17, 67 |
| 7-31-84     | 8-1-1896 Kicking Bird       | 10, 11, 12, 13, 14, 15, 17, 67 |
| 8-7-84      | 8-31-1893 Fort Lyon #3      | 10, 11, 12, 13, 14, 15, 17, 67 |
| 8-8-84      | 1-6-1890 Highline           | 10, 11, 12, 13, 14, 15, 17, 67 |
| 8-10-84     | 6-9-1890 Colorado           | 10, 11, 12, 13, 14, 15, 17,    |
| 8-11-84     | 8-31-1893 Fort Lyon #3      | 10, 11, 12, 13, 14, 15, 17, 67 |
| 8-12-84     | 1-6-1890 Highline #2        | 10, 11, 12, 13, 14, 15, 17, 67 |
| 8-14-84     | 3-1-1887 Fort Lyon #2       | 10, 11, 12, 13, 14, 15, 17     |
| 8-17-84     | 1-6-1890 Highline #2        | 10, 11, 12, 13, 14, 15, 17, 67 |
| 8-19-84     | 8-1-1896 Kicking Bird       | 10, 11, 12, 13, 14, 15, 17     |
| 8-20-84     | 1-25-1906 Fort Lyon Storage | 10, 11, 12, 13, 14, 15, 17     |
| 8-22-84     | 1948 John Martin            | 10, 11, 12, 13, 14, 15, 17     |
| 8-2-84      | 8-1-1896 Kicking Bird       | 10, 11, 12, 13, 14, 15, 17     |
| 8-5-84      | 8-31-1893 Fort Lyon #3      | 10, 11, 12, 13, 14, 15, 17     |
| 8-9-84      | 8-1-1896 Kicking Bird       | 10, 11, 12, 13, 14, 15, 17     |

COMPACT RELEASES AND DELIVERIES

Releases to the State of Kansas:

Release #1 to Kansas began at 1200 hours, March 21, at a rate of 400.0 cfs. An additional 200 cfs was released on top of the already flowing 400 cfs, commencing at 1000 hours, March 27. On April 11 at 0900 hours, the release to Kansas was reduced from 600 cfs to 400 cfs. Release #1 was ended at 0900 hours.

Release #2 to Kansas began on May 12, at 1400 hours, and was initiated at 400 cfs.

On May 21 at 0900 hours, an additional 200 cfs was imposed on the 400 cfs of May 12. On May 23 at 0600 hours, releases to Kansas were reduced from 600 cfs to 400 cfs.

On May 28, at 1400 hours the 400 cfs release to Kansas ended, subsequently ending release #2.

Release #3 to Kansas was begun at 1100 hours on June 19, 1986, at a rate of 400 cfs. An additional 200 cfs was superposed on the existing 400 cfs at 1130 hours on July 15, 1986. This release was subsequently reduced back to 400 cfs at 1000 hours on July 20, 1986. Release #3 ended on July 22, 1986 @ 0400 hours when the existing 400 cfs release ceased.

Release #4 to Kansas was begun at 1030 hours on July 29, 1986, at a rate of 600 cfs. Release #4 ended on August 4, 1986, at 0830 hours.

Deliveries:

| Beg. Rel. | End Rel. | Frontier<br>Ditch | Ark @<br>Coolidge | Ditch &<br>River Del. | Credited<br>Delivery | +Over<br>-Under |
|-----------|----------|-------------------|-------------------|-----------------------|----------------------|-----------------|
| 3/21/86   | 4/25/86  | 697.00            | 41,217.00         | 41,914.00             | 35,319.00            | +1,682.15       |
| 5/12/86   | 5/28/86  | 1,127.00          | 17,504.00         | 18,631.00             | 14,336.00            | + 682.90        |
| 6/19/86   | 7/22/86  | 2,215.00          | 37,476.00         | 39,691.00             | 29,103.00            | +1,515.81       |
| 7/29/86   | 8/4/86   | 214.00            | 19,581.00         | 19,795.00             | 11,338.00            | +8,080.64       |
| TOTAL     |          | 4253.00           | 115,778.00        | 120,031.00            | 90,096.00            | +8,080.64       |

The above table reflects only times when actual releases were being made from John Martin Reservoir plus a 7-day rundown period. "Credited delivery" refers to the limitation that credit cannot be taken for more than 105% of Kansas demand.

COMPACT RELEASES AND DELIVERIES

| Release Date        | Kansas Agreement Account A.F. | Transit Loss A.F. | Total Release to Kansas A.F. |
|---------------------|-------------------------------|-------------------|------------------------------|
| Mar. 21 to April 25 | 33669.02                      | 338.43            | 34007.45                     |
| May 12 to May 28    | 13868.72                      | 272.73            | 14141.45                     |
| June 19 to July 22  | 28868.80                      | 789.26            | 29658.06                     |
| July 29 to August 4 | 7066.12                       | 0                 | 7066.12                      |
| TOTALS              | 83476.66                      | 1400.42           | 83472.66                     |



SUMMARY OF HYDROGRAPHIC RECORDS 1986 IRRIGATION YEAR

STATION TOTAL DISCHARGE A.F. Maximum Discharge C.F.S. Minimum Discharge C.F.S.

|  |         |       |      |
|--|---------|-------|------|
| Lake Fork Creek Above Sugar Loaf Reservoir   | 12,660  | 427   | 3.0  |
| Lake Fork Creek below Sugar Loaf Reservoir   | 15,580  | 390   | 2.6  |
| Lake Creek above Twin Lakes Reservoir        | 127,900 | 2,750 | 9.5  |
| Lake Creek below Twin Lakes Reservoir        | 201,000 | 1,490 | 1.2  |
| Arkansas River @ Granite                     | 367,700 | 2,460 | 79   |
| Clear Creek above Clear Creek Reservoir      | 70,300  | 870   | 12   |
| Clear Creek below Clear Creek Reservoir      | NA      |       |      |
| Cottonwood Creek @ Buena Vista               | 41,200  | 373   | 0.51 |
| Chalk Creek @ Nathrop                        | 49,700  | 571   | 2.70 |
| Arkansas River @ Salida                      | 596,100 | 3,910 | 205  |
| Arkansas River near Wellsville               | 662,700 | 4,220 | 258  |
| Grape Creek near Westcliffe                  | 39,500  | 640   | 16.0 |
| Arkansas River @ Canon City                  | 743,500 | 5,210 | 307  |
| Arkansas River @ Portland                    | 743,150 | 4,950 | 256  |
| Arkansas River above Pueblo                  | 679,900 | 4,770 | 86   |
| Arkansas River near Nepesta                  | 673,823 | 6,260 | 214  |
| Arkansas River near Fowler (Bel. Catlin Dam) | 672,100 | 5,670 | 204  |
| Huerfano River near Redwing                  | 190,080 | 167   | 6.0  |
| Cucharas River @ Boyd Ranch near La Veta     | 15,340  | 285   | 2.8  |
| Purgatoire River @ Trinidad                  | 66,596  | 398   | 0.7  |
| Luning Arroyo near Model                     | 451     | 155   | 0    |
| Van Bremer Arroyo near Model                 | NA      |       |      |
| Purgatoire River near Thatcher               | NA      |       |      |
| Arkansas River @ La Junta                    | 117,740 | 3,320 | 17   |
| Arkansas River @ Las Animas                  | 140,600 | 1,930 | 32   |
| Purgatoire River @ Las Animas                | 42,720  | 1,460 | 2.9  |
| Purgatoire River @ Nine Mile Dam             | 41,430  | 3,270 | 0    |
| Muddy Creek @ Muddy Creek Reservoir          | 765     | 120   | 0    |
| Rule Creek off Highway 101                   | 2,042   | 495   | 0    |