



**1997 Annual Report**

# STATE OF COLORADO

## DIVISION OF WATER RESOURCES WATER DIVISION FIVE

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March 10, 1998

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Dear Hal:

On behalf of the staff of Division 5, I submit the Annual Report for 1997.

I want to express special thanks to all Division 5 personnel and to you and your staff for aid and support in fulfilling the various responsibilities of water administration in Division 5.

Respectfully submitted,

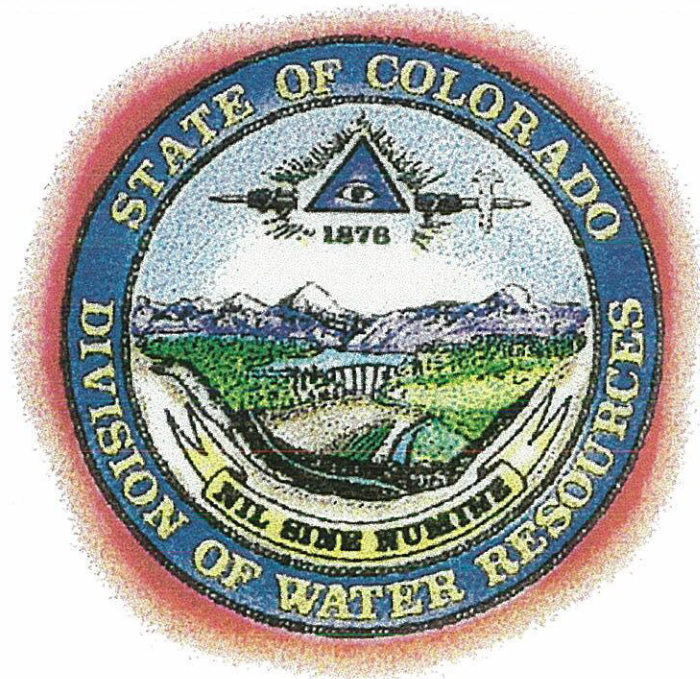
Orlyn J. Bell  
Division Engineer

1997

ANNUAL REPORT

DIVISION 5

DIVISION OF WATER RESOURCES



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## WATER ADMINISTRATION

### I.A. 1997 WATER YEAR

If we look at precipitation, 1997 was a better-than-average year. However, the agricultural community did not fare so well. The snowpack was above normal at 142% basinwide for the May 1 reading. Spring runoff was above average without flooding, providing a long even supply for diversion, but late untimely frosts failed the fruit crops. The early summer was relatively dry and those haying early had excellent results but by mid-July and on through fall, rains hampered everyone's ability to harvest. The result was an abundant amount of pasture feed and/or lots of poor-quality hay and minimal fruit.

#### 1. ACCOMPLISHMENTS

##### a. Water Administration

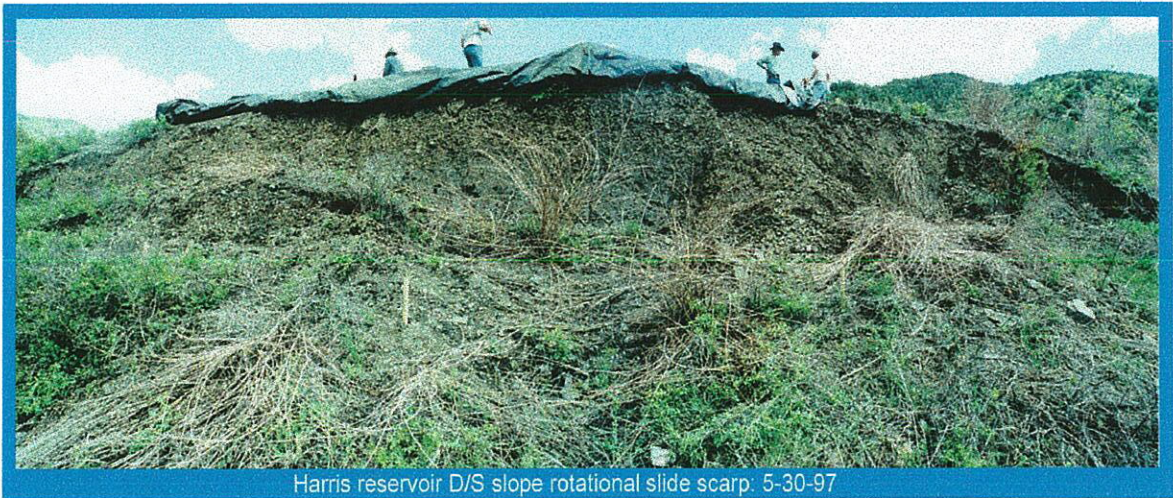
A high, long runoff very similar to the previous year occurred. Calls on heavily administered side tributaries came later than normal and were more junior longer, allowing for a lot of irrigation to occur. For some areas no calls occurred because the late summer and fall rains replenished the flows on the mainstem. A call was never placed by Grand Valley and was placed by Shoshone only briefly during November and December 1996. This was a light administrative year.

##### b. Dam Safety

Another wet year kept the dam safety engineer, the "A" team<sup>1</sup> and some of the water commissioners busy with several potential dam safety problems. The most pertinent incident involved the Harris Reservoir on West Rifle Creek in District 39. A major slide occurred on the downstream slope of this dam in late May after a heavy rainstorm during the Memorial Day weekend (see photo next page). If it hadn't been for the "heads up" reaction of the dam caretaker and owner's consulting engineer, this dam could have easily failed, causing extensive damage to the dam owner's property, and possibly loss of life to his employees living near the stream channel below. The dam safety engineer was actively involved in monitoring the slide over the following two months and determined the safe operating level. A temporary bypass ditch was constructed to help drain the reservoir during the incident and the spillway was lowered to the restricted level during the fall. This last action significantly reduced the risk and consequences of a failure for future runoff events.

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<sup>1</sup> The 3 newly funded and hired employees were used to some extent within the Dam Safety program.



Another noteworthy incident was the development of excessive seepage in August below the newly constructed Alsbury Dam in District 45. This seepage was not viewed as a threat to the safety of the dam, but was a concern. It required large amounts of monitoring time by the water commissioner, "A" team, and dam safety engineer. A potential seepage path was hypothesized and a repair was constructed under the purview of the owner's engineer. Future monitoring will be needed to assess the performance of the repair.

The outlet pipe for the McMahon #2 Dam in District 50 was lined using the *Ultraliner* procedure after significant erosion damage had occurred. In taking an active role in the procedure, the dam safety engineer showed a more cooperative approach and less of a regulatory approach. This allowed for the work to be done in a timely manner. The work significantly reduces the chance for a serious dam safety problem next spring (see photo below).



The Upper Highline Rehabilitation Project in District 72 was completed, and the storage restriction temporarily lifted to test the rehabilitation. A verdict on the success of this work has not been reached. This is pending the results of the past year's monitoring and the submittal of these results.

The utilization of two of the new FTE's, (the "A" team), for dam safety work helped tremendously to alleviate the dam safety engineer's workload. They were actively involved in the inspection of Class 3 dams and the processing of nonjurisdictional dam applications. In past years the outlet inspection program has fallen behind due to workload problems. With the assistance of the "A" team, the backlog of these inspections was significantly reduced. Water commissioners were used ① to assist in the outlet inspections; ② to informally check dams with problems during critical times in which the dam safety engineer could not, and ③ to perform "off-year" follow-up inspections of satisfactory Class 2 dams. This latter activity was generally successful, but some of these inspections were not accomplished until late fall.

The total number of inspections performed by Division 5 personnel = 184, which consisted of the following:

109 Inspections performed by the Dam Safety Engineer:

- 0 Class 4 regular inspections
- 25 Class 1 regular inspections
- 25 Class 2 regular inspections
- 5 Class 3 regular inspections
- 7 Construction inspections
- 32 Follow-up inspections
- 15 Outlet inspections

8 Inspections by other division 5 staff engineers:

- 3 Class 1
- 4 Class 2
- 1 Class 3

24 Class 3 inspections by the "A" team

43 Inspections performed by Water Commissioners:

- 9 "Off-year" Class 2
- 34 Follow-up

Additionally the hydrologic expertise of the dam safety engineer was used by local emergency managers as a guide for identifying potential flooding problems due to a heavy snowmelt. Because of the heavy emphasis on regular and follow-up inspections, resolving

legitimate dam safety problems, and performing outlet inspections, only two hazard evaluations were performed in 1997.

**c. Ground Water and Well Permitting**

Throughout 1997 strong rural development continued, creating an increased workload in the areas of research and public assistance regarding water well permits. Division 5 came online in the process of decentralized well permitting. Starting in March of 1997 certain types of exempt permits were issued at the division level, with the intent of streamlining the permitting process and reducing the turn around time for permit evaluation and issuance, while providing greater accessibility to the general public. In November of 1997 we were fortunate to host an education seminar sponsored by the Colorado Water Well Contractors Association (CWWCA). 92 people attended this informational seminar on groundwater and well permitting. They evaluated it to be very informative, both in the material presented and in the voluminous hand-out packet.

During calendar year 1997 a total of 940 permits were approved for Division 5 -- a decrease of 10% from 1996. The number of Monitoring Hole Notices (MH) received by the division increased by 17% from 344 in 1996 to 411 in 1997.

A breakdown of permits processed includes:

- 567 Exempt Permits
- 213 Non- Exempt Permits (129 Aug wells & 84 per water conservancy district)
- 78 Monitoring Wells
- 32 Exempt Replacements
- 6 Non - Exempt Replacements
- 44 Late Registrations

With the decentralized well permitting process in place a total of 205 permits were issued at the Division level. These included (185) 34% of the Exempt Well Permits, (15) 47% of the Replacement Permits and (5) 10% of the Late Registered Wells. Since the implementation of this process was not advertised to the general public, we look for these numbers to increase in 1998. In addition, 143 permits were preprocessed and forwarded to the Denver office.

There was no major legislation during 1997 regarding ground water and well permitting. However, we continue to monitor the effects that HB 1364 (Cluster Development Bill) will have on rural land use.



**d. Hydrographic Program**

The Division is responsible for: ❶ Measuring and recording streamflows above Ruedi Reservoir associated with transmountain diversions of the Fryingpan-Arkansas Project - there are 6 manual and 2 satellite stations; ❷ Measuring diversions for water commissioners and administration; including the operation of 10 satellite stations; ❸ Maintaining 4 Colo. Water Conservation Board's (CWCB) minimum streamflow satellite stations, 2 of which are measured and published; ❹ Measuring and recording streamflow for Aspen Consolidated Sanitation District for permit compliance; ❺ Maintaining 26 satellite stations used for administrative purposes.

The Division 5 hydrographer made 49 river measurements and 20 ditch measurements this year. Other key players who collect streamflow data in Division 5 include the U.S. Geological Survey (Lakewood and Grand Junction offices), the National Weather Service (also from Lakewood and Grand Junction offices), the U.S. Bureau of Reclamation, Northern Water Conservancy District, Denver Water, and the City of Colorado Springs.

Through cooperation with Divisions 1, 2, and 4, records were developed for 18 transmountain diversions. In addition, 15 satellite sites in Division 5 were used for diversion records. Ten hydrographic records were published in the Colorado Division of Water Resources publication. These ten will continue to be published on a yearly basis. No construction or maintenance for gaging stations was undertaken this year.

**e. Water Records and Information**

The quality of records collected continues to be refined, improving consistency from year to year. Additional record was collected on structures with coding of "No Information Available" previously as well as on new structures. However, construction of new structures continues to outpace these additions to the record. As a result, the overall percentage of structures with record versus active structures has declined. The increasing number of small augmentation plans and small surface structures irrigating minor acreages present the biggest challenges.

As part of our effort, the following activities occurred:

**Inventory of Fee Wells and Augmentation Plan Administration**

- Successfully used the WELLBROW GIS database to conduct a macro inventory of all active wells in Districts 36, 50, 51, 52 and 53 including a breakdown of well types, (fee wells vs. exempt wells), to locate the wells on District maps. In addition, the well GIS layer was linked with county assessor/parcel data for District 36,

allowing location and ownership verification for individual wells. (See Page 23 for more details.)

- Developed accounting forms or spreadsheets and conducted detailed analyses of several large subdivision augmentation plans, including decree research, water user communication, and investigating well permit compliance.
- Investigated Summit County Exchange agreements between Denver Water, Summit County water users, and the CWCB in order to provide better understanding of where and when exchanges occur in District 36 and to assist with augmentation plan administration.
- Improved record-keeping and administration for numerous small augmentation plans in most water districts in Division 5.

#### **Diversion Records**

- Spreadsheets were developed in 1996 and 1997 in Microsoft EXCEL to assist in diversion record accounting for large water systems and reservoirs.

#### **Technology**

- RAS system was installed and operated successfully, allowing remote water commissioners to access electronic mail and other network services.
- All Division 5 computers were upgraded to OFFICE 97.

#### **f. Substitute Supply Plans**

Fifteen substitute supply plans (SSP) were approved for the '97 Irrigation Year for domestic, commercial, industrial and municipal purposes. Two water conservancy districts - Basalt and West Divide - have approved plans for over 420 contractees combined.

#### **g. Special Projects**

- CWOA Annual Meeting - Division 5 successfully planned, organized and presented the Colorado Water Officials Association annual meeting on October 3<sup>rd</sup> and 4<sup>th</sup> 1997. Presentations were made by many knowledgeable speakers. The meeting included many interesting technical exhibits. The theme was "Waste and Salvage Issues in Water Administration." One highlight was the water commissioner exhibits developed for

each water district, depicting historic and current water use characteristics. The Grand Valley Water Management Water Study was specifically showcased.

This annual meeting was a large undertaking for the Division. It involved a lot of donated time and effort but was quite a learning experience. It helped to bring personnel closer together. In short, it was a rewarding undertaking, but one which the Division would not want to host every year.

- CRDSS (Colorado River Decision Support System) - The Division 5 Staff completed a cooperative project with the U S Bureau of Reclamation to identify, map, and field verify all irrigated acreage within the Division. The project has taken almost four years to complete and will provide a valuable source of information for the Colorado River Decision Support System. It will allow for increased accuracy in calculating crop consumptive use data needed for the administration of the Colorado River and in water right change cases. The project relied upon infrared aerial photos provided by the USBR to initially identify irrigated acres. These photos were taken to the field by Division 5 staff to verify irrigated acreage boundaries, crop types, and the diversion facilities used to irrigate each parcel. The resulting data has been entered into the State's GIS data bank and will be accessible using PC ARCVIEW.

- SWAT - Members of the Division 5 staff continued to participate in the "SWAT" team discussions involving Colorado River administration. The team consists of city, county, state and federal officials, and was originally formed as a discussion group to resolve administration of Green Mountain Reservoir. It has evolved into a group that has also tackled accounting problems associated with the Dillon and Green Mountain refill cases and the Clinton Gulch Reservoir agreement.

This year monthly meetings involved such questions as: ① payment for power interference administration (also attended by the State Engineer), ② advisory work with the engineering firm putting together the water rights administration component for CRDSS, and ③ the targeting and successful running of the first bypass flows within the frame-work established for the Coordinated Reservoirs Operations Study (CROS). Individual reports are available for CROS and the Grand Valley Water Management Study (GVWMS) which is currently undergoing an Environmental Assessment process prior to implementation. The refill cases were stipulated to by all parties except Grand Junction. They have challenged, all the way to the State Supreme Court, the State's right to adjudicate refill water for Denver and Green Mountain (see Case No. 87CW376).

- CROS (Coordinated Reservoir Operations Study) - 1997 marked the first year in which reservoir releases in the Colorado River Basin were coordinated in a manner designed to enhance the habitat of several endangered fish species residing in the lower Colorado River.

The 15-Mile Reach of the Colorado River between Palisade, Colorado, and the confluence of the Colorado and Gunnison Rivers at Grand Junction is important habitat for the endangered Colorado River Squawfish and Razorback Sucker. Recovery of these fish in the upper Colorado River is expected to require improvement of existing habitat conditions. Research has indicated that enhancement of peak flows in the Reach improves the spawning habitat for the endangered fishes.

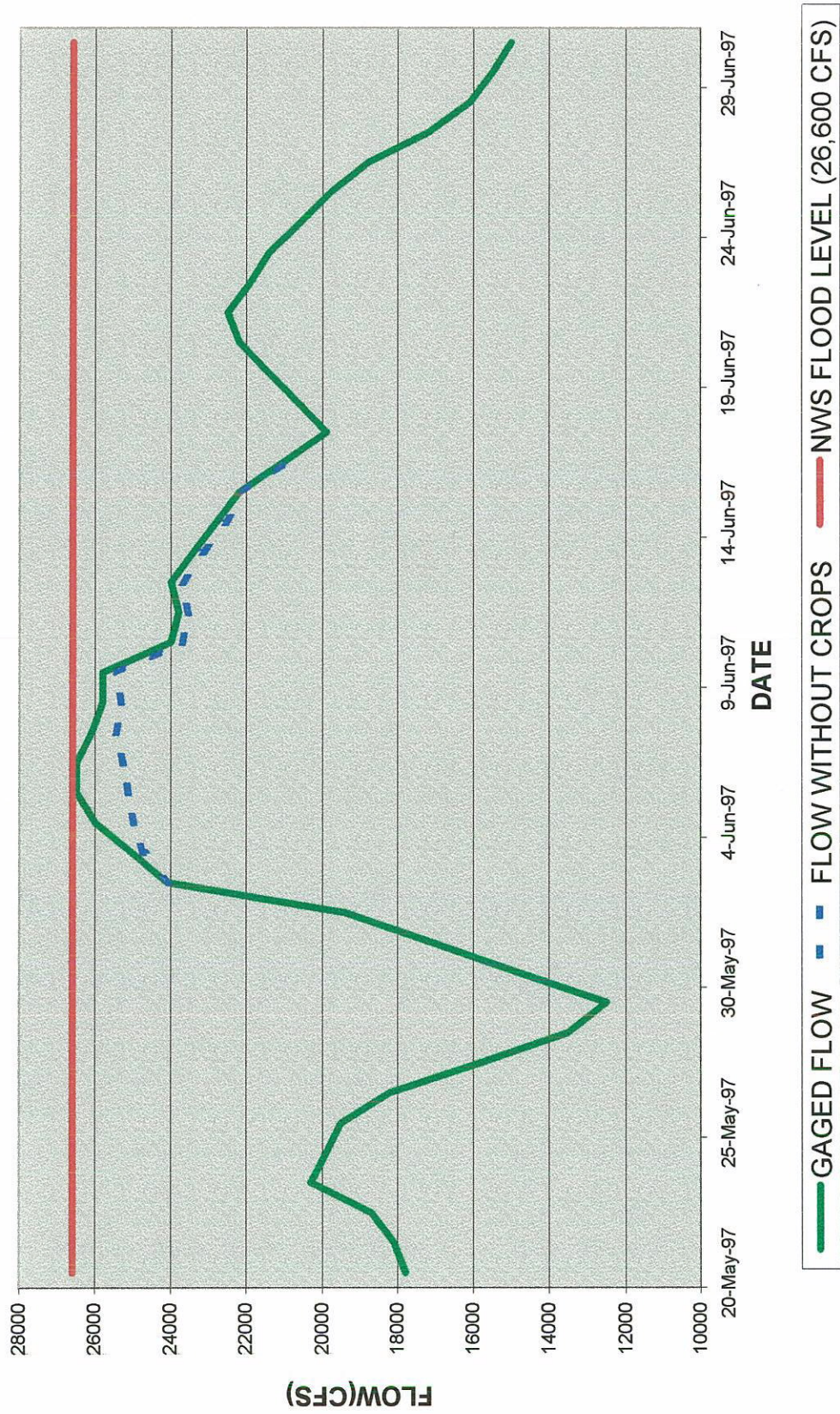
A study was conducted under RIPRAP item I.A.3.c.(3)(c) indicating that the coordinated operation of reservoirs located upstream from the 15-Mile Reach may result in enhancement of spring peak flows in the 15-Mile Reach for the benefit of the endangered fish in some years. An end product of that study was to produce a process to coordinate operations of participating reservoirs on an annual basis to achieve this peak flow enhancement.

In a combined effort to contribute to the recovery program, a Coordinated Reservoir Operations team, which included the Division of Water Resources as well as major reservoir owners/operators and other water management entities, was formed to develop a program to enhance peak river flows. Coordinated reservoir releases were made from Ruedi, Williams Fork, Green Mountain, and Wolford Mountain Reservoirs this year beginning on May 30<sup>th</sup> and continuing through June 16<sup>th</sup>. The chart on the next page shows graphically the effect of these combined reservoir releases on the flows of the Colorado River at the Cameo gage. The goal was to increase the spring flows as much as possible without exceeding the National Weather Service flood level of 26,600 cfs, and this goal was successfully accomplished. The US Fish and Wildlife Service and the Division 5 Engineer were charged with the responsibility to determine when it was appropriate to begin and end the releases, determine the amount of the releases, and to notify participants accordingly. The Division 5 Engineer was required to conduct an accounting of releases and provide a record of releases during the specified time period.

Coordinated Reservoir Operations are expected to continue annually until the endangered fish are fully recovered.

# COLORADO RIVER NEAR CAMEO (1997)

## DEPICTING IMPACT OF COORDINATED RESERVOIR OPERATIONS



- GVWMS (Grand Valley Water Management Study) - The US Bureau of Reclamation issued its draft environmental assessment for the Grand Valley Water Management Study in December of 1997. The project, when constructed, will conserve Grand Valley Project water by improving efficiency of Government Highline Canal operations without interfering with delivery of irrigation water. The project is also intended to help recover endangered fish by delivering surplus water in Green Mountain Reservoir to the Grand Valley Power Plant then into the 15-Mile Reach of the Colorado below the Grand Valley Canal diversion, as authorized by the Orchard Mesa check settlement.

During each irrigation season, demands for water from the 55-mile long Highline Canal change daily based on crop needs, irrigators' schedules, and weather. Water in the canal that is not delivered to customers is "administratively spilled" into numerous natural washes in the valley, which carry the water back to the Colorado River. Studies based on past years showed that the amount of water spilled in August, September, and October averaged 31,400 AF. The goal of the project is to significantly reduce these late summer spills while at the same time maintaining the ability to deliver a reliable supply of irrigation water.

#### **h. Water Court**

A total of 308 water right applications were filed in Division 5 Water Court during 1997 (300 for the Colorado River administered by Div. 5 and 8 for the White River administered by Div. 6). Of those 300 applications, 32 were applications involving new augmentation plans and 6 were to amend existing aug plans. The State and Division Engineers formally objected in 19 cases and entered 6 protests to referee rulings.

The State Engineer held a meeting December 16<sup>th</sup> in Denver where much discussion took place on standards for Div. 5 staff's involvement in water cases. A document entitled *Summary of Discussions* came out of that meeting. Its purpose was to provide consistency on a statewide basis regarding positions to take in water court. The summary includes the items considered, the State Engineer's decisions, and guidelines to be used in applying these decisions.

#### **i. Tabulation**

The primary focus for 1997 regarding the Water Rights Tabulation was QA/QC'ing the databases and preparing the data for posting into the new *Hydrobase* system. This project was completed by July 1, 1997.

Tabulation of new and outstanding water court decrees was not a priority for 1997 and, therefore, we lost ground in all water districts except Districts 36 and 38. In these

districts the process of bringing old augmentation plans up to current standards and the elimination of the huge backlog was begun. We trained two new staff members in tabulation concepts, coding and keypunching. In addition, we began to whittle away at the tabulation backlog for Districts 36 and 38 with over 900 records added or updated, including several newly-tabulated augmentation plan decrees.

**j. Mainstem Colorado River Calls**

During the 1997 water year, the Shoshone Power Plant put a call on the River for its decreed 1250 cfs on Nov. 6, 1996 and took it off Dec. 30, 1996. This call affected those junior water rights in Water Districts 36, 37, 50, 51, 52 and 53. There was no call governing diversions above Cameo or below Shoshone Power Plant.

**2. MILESTONES IN WATER ISSUES**

The main issues that have occurred this year are not external but internal. These include:

**a. Principle-Centered Leadership**

Staff introduction to and training in Stephen R. Covey's *The 7 Habits of Highly Effective People* and *First Things First* along with changes in our Mission Statement and the Division of Water Resources culture are positioning us to take on the legislatively mandated challenge of "pay for performance" and yet stay focused on water issues.

**b. Local Issuing of Exempt Well Permits**

Decentralized issuing of exempt well permits through the Division 5 office is a big step toward better serving the water-using public.

**c. Centralization of Rule 12: Dam Safety**

A couple of serious dam safety problems in Div. 5 were resolved in a timely manner in the spirit of cooperation with the dam owner. This instigated a policy that reduces the dam safety engineer's decision-making capability for recommending repairs by allowing the Denver Office to "have more control over the engineer's work." This policy could make it harder for a dam owner to perform relatively minor repairs that significantly reduces the risk to the public safety in a timely manner. It may even cause a dam owner to not do any minor repairs at all, and could reduce the trust and faith that has been developed over the years between the dam safety engineer and dam owner. This policy seems to conflict with several aspects of the new Mission Statement and tends to send a message that the Denver Office does not trust the Dam Safety Engineer's judgment, expertise, and decision-making capability. This policy helps confirm what an unknown respondent to the recent public survey stated is true:

"Dam safety must improve and adopt more of a cooperative approach and less of a regulatory approach. Frequently the approach taken is one of what the regs say even if actual safety/hazard is not an issue. At times program is insensitive to the "Real World." "

**d. "The Colorado Division of Water Resources 1997 External Customer Survey Results" and the Proposed Water Act 1998**

Many survey comments and the proposed legislation both suggest water users want a more pro-active and less bureaucratic or regulatory approach to DWR activities. How our agency makes decisions is important. "One size fits all" in regard to lagged effects of well pumping or standard engineering required to identify and mitigate all injury issues seems quite bureaucratic. The process was centralized this year, leaving Div. 5 personnel in a conundrum. Are we to help solve problems, be pro-active and take a few risks, or are we to only regulate?

**3. INVOLVEMENT IN THE WATER USER COMMUNITY**

There seem to be several roles that the Division of Water Resources fills in the community. The first involves the statutory duties of the State Engineer in water administration and dam safety. Another role is as collector of records and data and as keeper of the depository for these. A third would be to act as knowledgeable professionals in planning processes concerning both water supply and legal matters. Finally, our role in public education concerning water is always of utmost importance. Sometimes we take leadership roles and sometimes supporting roles. In the area of water applications, this approach seems to be breaking down, as the authority on not only litigated cases but also all applications and rulings has shifted to the engineering section in Denver. Still, some examples of success are:

① The Division office continues to facilitate usage of our records and data by the public. More accurate tabulation, decree books with indexes, updated structure lists, well permit information, organized diversion data, combined with a concerted effort to assist anyone with questions have all added in this facilitation. The office provides a convenient place for them to work.

② Specific meetings were held with: Mesa County planning association, Big Creek water users, Pitkin County and Aspen planners and attorneys, realtor groups, Colorado Water Well Contractors Association, Northwest Colorado Council of Governments, Colorado River Water Conservation District, U. S. Bureau of Reclamation, Denver Water, Colorado Water Conservation Board, Northern Colorado



Water Conservancy District, West Divide Water Conservancy District, Collbran Water Conservancy District, Basalt Water Conservancy District, the Silt Conservancy District, and numerous ditch companies.

③ Bench-Bar Committee involvement and water SWAT team meetings are water-user community efforts at solving water issues. Efforts to identify and address water conservation (salvage) in the Grand Junction area are under way with a Memorandum of Agreement (MOA) and frequent meetings with the US Bureau of Reclamation, Colorado Water Conservation Board, Colorado River Water Conservation District and the State Engineer's Office personnel.

#### **4. WATER ISSUES NOT ADDRESSED**

Change is the current driving force in the Colorado River Basin water use scramble. Land in many areas is rapidly being converted from traditional agricultural use to those uses associated with growth, recreation and the environment. The latest crop to be rooting and thriving in the soil of Division 5 is condominiums and second/trophy homes. This means a multiplicity of water right owners and rights now exists. Historically there were large working ranches with single owners of several rights. Add to this the increased need for water to satisfy environmental concerns and it is easy to see that, as these trends continue, the need for cooperation is imperative. Sharing education and information between all residents of the area and the employees of the Division of Water Resources must occur.

Let's take a look at two examples -- the first elucidates growth, the second, environmental concerns:

① In Summit County, the area above Dillon Reservoir is now home to approximately 1500 wells, most of them in-house use only permits. Twenty years ago this same area contained less than 100 wells. Three hundred sixty-five water rights, mostly for irrigation and mining, existed in 1970. Today, there are 1136, including 43 minimum streamflow rights, with nearly all the mining rights abandoned and the irrigation rights converted to other uses. It is interesting that the total diversion is less now than previously.

② The pressure to provide additional water flow for endangered fish has resulted in proposed adjustments in Grand Valley irrigation users' techniques. Eight million dollars in check structures to be installed in one of the irrigation canals can conserve up to 30,000 AF of water annually. This water may then be available for release out of Green Mountain Reservoir when needed for the fish.

The Blue, Fraser, Eagle, and Roaring Fork Valleys are transitioning from ranches to small tracts on wells. The next step will be housing densities that displace wells with central water systems. Are the mechanisms we have in place prepared to handle this change? Will they best define and protect the resource, ownership traditions, and water use?

Change is not made without inconvenience but it seems to be the way of our future and we at the Division office plan to continue to keep pace with it. As Isaac Asimov said, "It is change, continuing change, inevitable change that is the dominant factor in society today. No sensible decision can be made any longer without taking into account not only the world as it is but the world as it will be."

5. EFFECTS OF WORKLOAD CHANGES AND/OR ADMINISTRATIVE LIMITS ON OPERATIONS

a. Staffing Concerns

We are coming up to the year anniversary of hiring three new full-time employees. Two techs were devoted to dam safety, augmentation plans and tabulation backlogs; and one FTE split out to provide additional water commissioner coverage in the field and to help with the decentralization of the well permitting process. These FTE's are what we have been asking for for years. This "A-team" has begun in earnest to clean up problem areas backlogged because of lack of manpower.

We filled the permanent part-time administrative assistant position in June. This person has enabled us to bring our water court case files through the decree stage up to date. She has also reorganized the filing systems and work spaces to promote greater efficiency in the Division office.

We did not have enough FTE's to put Water Commissioners in each water district. Additionally, 10 of the 20 water commissioners were part-time employees and the seasonal nature of their employment severely hampered the updating of structure lists, administrative lists, tabulations, maps, or any other non-direct water administration activity. Another problem was that as the jobs are becoming more complex, adequate training is harder to achieve. The pressure for part-timers to seek full-time employment elsewhere is a problem. One-half of the water commissioner work force is still in this situation.

b. Impact of the Budgets on Operations

Operating funds were precariously low. We had only enough to provide minimal supplies. Inflationary replacement costs were the biggest budget busters, with telephone and copy machines taking an increasingly larger bite. In travel, we curtailed on a

percentage basis from previous years' expenditures. It is in this area that it's easiest to make up deficiencies. As we traveled less, we had to rely on other avenues for information. We opted to use more user-supplied data.

Expenditures matched the budget; however, mileage was adjusted to provide all the other needed operating items. This is a very undesirable situation. We must add money for mileage so the water commissioners can do their jobs. The amount of capital available to bring three new FTE's on board was terribly inadequate. We really scrounged to outfit them with needed supplies, especially capital items. The figure was \$660 each, which didn't go very far toward desks, chairs, file cabinets and computers.

**c.. Operational Concerns**

Based on what happened in 1997, I believe that toeing the line on expenditures will be more difficult without decreasing service. Training needs of the new employees will be critical and will take time, energy, and training funds.

Field inspections regarding abandonments, water right applications and well replacements will also be costly, time consuming, and necessary.

Quality control and data handling capability with systems designed for user-supplied data is becoming increasingly important and will receive attention.

Funds allocated for travel have been cut, cut, and cut. This trend must be reversed. However, when employees driving their own vehicles have been told not to drive so many miles they have not complained too much because any miles they drive cost them money and, in effect, subsidize the State.

## I.B. 1998 WATER YEAR

The Colorado Division of Water Resources strives to be a leader in the water community of Colorado and the western United States. This is accomplished by focusing on the following areas: *people, water and stewardship*. *People*, because we recognize that the business of water involves our employees and the public. *Water*, because the administration, safety and use of the State of Colorado's water resources is something we are committed to and care deeply about. *Stewardship*, because we understand and accept our obligation to the taxpayers and ourselves in using and protecting the resources in the most effective manner possible.

### 1. KEY OBJECTIVES

Our **mission** is:

- To provide competent and dependable distribution of water in accordance with statutes, decrees and interstate compacts.
- To ensure public safety through safe dams and properly permitted and constructed water wells.
- To maintain and provide accurate and timely information concerning water.
- To promote stewardship of all human, fiscal and natural resources.
- To serve the public through the generation of creative solutions to problems.
- To help the public understand complex water issues.
- To promote stability in the use of the state's limited water resources.
- To apply modern technology to its greatest advantage.

The following "**principle**" statements will guide our actions:

- Treating each other and the public with dignity, respect, honesty and fairness.
- Assuming personal responsibility for individual and organizational actions.
- Fostering continuous improvement, innovative thought, learning and shared leadership.
- Promoting an open and honest communication environment that builds trust, respect and loyalty among us and the diverse community in which we live and work.
- Recognizing our employees and the water community for the professional, competent services they provide.

**a. Projected Work Items for 1998**

The everyday operations of Division 5 Water Resources will continue to include:

Administration of water rights,  
Collecting and recording diversion data,  
Performing well inspections,  
Inspecting dams and reservoirs,  
Reviewing water rights applications, and  
Providing PACE evaluations for each employee.

The special work items will consist of:

• **Decentralized Well Permitting**

In 1998 our focus in the area of water well permitting will be to continue to minimize the turnaround time on permit application evaluation with the hopes of decreasing the number of MH- notices received, and to provide greater accessibility to the general public and increased education in the permitting process. Efforts still continue to track and sort wells using the counties' parcel identification numbers (PIN).

• **Fee Wells--Inventory, Permit Compliance, and Record-keeping**

A two-pronged approach will continue in 1998: ① “macro” analysis of fee wells, as well as exempt wells, for each district, and ② “micro” fee well inventory tasks associated with administration of critical augmentation plans for subdivisions or municipalities.

① Continue to develop macro analyses of all active wells within water districts, as already developed for Districts 36, 50, 51, 52, & 53. These analyses will rely on WELLBROW GIS database inquiries which will produce district well maps showing all active wells identified by well type, e.g., domestic exempt, household use exempt, household use non-exempt, and other fee wells, and accompanying tables of active well numbers. These maps will aid water commissioners in understanding groundwater and well permit compliance issues within their districts. In counties where the data is available, GIS or tabular parcel/assessor data will be obtained and used to help verify well locations and ownership.

② Continue to investigate critical augmentation plans, many of which include fee wells, for administration and record-keeping purposes. These “micro” investigations include an inventory of all fee wells and analysis of groundwater use accounting. Groundwater diversion accounting templates will be developed for typical water user categories, e.g., small subdivisions, operated with a homeowner's association. This year, if operating funds are available, tagging of these fee wells will be initiated and

locations will be quickly verified or adjusted with GPS field investigations. The new augmentation plan database will include data fields that provide fee well information including valid permit numbers and permit requirements. Also, data sharing options with the Dept. of Environmental Health will be explored to assist with groundwater user data gathering.

In addition, field investigations for statement of beneficial use confirmation and well permit compliance tasks will continue to be performed, where staff time is available.

- **Tabulation**

- ① Use of more personnel, including newly-trained personnel, to help reduce the tabulation backlog.
- ② All water districts except 36, 37 and 38 will be up to date for the June 1 publishing deadline; this will include revisions of some augmentation plan tabulations.
- ③ Tabulation of Districts 36 and 38 will be substantially up to date by the end of the 1998 water year. District 37 will be up-to-date by the end of the 1998 water year.
- ④ Division 5 tabulation will be published in draft form on June 1, and revised for public use by July 1.

The program mentioned above is part of our expectation to have a complete tabulation - eliminating all backlogs and bringing all existing line items up to current standards -- prior to the July 1, 2000 publication.

- **Large User Accounting**

Many large water users provide diversion and reservoir information in formats or based on assumptions that require major adjustments before diversion/reservoir records are finalized. In a continuing effort, water user meetings will be scheduled so that required data attributes and formats can be established, with negotiations required in some cases. CRDSS and *Hydrobase* are both somewhat dependent on this happening.

- **Augmentation Plans**

Division 5 will:

- ① Continue to investigate critical augmentation plans for administration and record-keeping purposes including at least ten major augmentation plans throughout the Division. These investigations will include decree research, water user communications/meetings, a review of measuring device requirements, well permit compliance checks, and developing individual accounting forms/spreadsheets necessary

for administration and record-keeping. Division augmentation plan coordinator staff and water commissioners will use a team approach for these projects.

② Further develop accounting templates, tabular forms or spreadsheets for typical augmentation plan scenarios. These templates will be used to facilitate water user development of proper accounting systems, with DWR support where needed. In addition, standard correspondence will be developed for instances where it is necessary to make written requests for accounting compliance.

③ Begin to develop an augmentation plan database that will eventually provide information on owner contacts, operational status, special data requirements, orders and requests issued, latest data received, etc.

④ Continue to expand record-keeping and administration of large exchange pools such as Green Mountain Reservoir historic user and contract pools and conservancy district augmentation plans, e.g., West Divide Conservancy District augmentation plans.

• **Abandonment Lists**

The next abandonment list must be completed and a copy mailed to owners of water rights included on the abandonment list by July 31, 2000. Division 5 staff will begin to compile a tabulation of those water rights thought to be abandoned and the supporting documentation this year.

• **Effects of Workload Changes:**

① Water commissioner toolkits, RAS capability, and Windows95 upgrades have increased the man-hours needed for computer support within the Division Office. With more in-house computer expertise, there has been less reliance on Denver computer support staff.

② Beta testing for *Hydrobase* administration tool kits and developing new coding strategies and diversion diagrams for tabulation and record-keeping will require much staff time, pre-empting other tasks.

**b. Problems, Concerns, Limitations To Overcome**

Non-reliance on CRS §37-83-105 by the Division Engineer and Water Commissioners to solve minor local problems

Unrealistic time frame within permitting process for SBU's wherein build-out cannot occur for many years. This consistently brings controversy between DWR and water users.

Pendulum swinging too far in beneficial use claims without required responsibilities to stream systems, i.e., aesthetics, wildlife, and acoustical claims for huge amounts of diversion. (I personally am uncomfortable administering water into a trophy home's aesthetic feature while drying up a natural stream.)

## **2. CHANGES THAT WILL IMPACT THE DIVISION**

The next several pages describe Division 5's current approach and some examples of where we used GIS and ARCVIEW this year along with some projections for the future. We are excited about the prospects of using technology - some that we have and some we are proposing to get to help us attain our objectives and help fulfill our mission.

**a. Geographic Information Systems** - Division 5 is committed to the utilization of Geographic Information Systems (GIS) for mapping of structures, wells, water rights and irrigated acres in order to assist in decision making related to the administration of water. To accomplish this, the following capabilities are being developed:

- Use of USGS 7.5' QUAD coverage as background to State coverage
- Use of GPS as a tool for locating structures and water features
- Use of County Parcels and Assessors information where available
  - Digitizing of plotted structure locations from the main USGS hardcopy topos (digitizer table)
  - Digitizing of sub-basin areas according to stream reaches and topography (manual or modeled)
- Large 36" color plots (HP DesignJet Plotter)

For each district, State coverage will be developed and refined. Well coverage will be subdivided into Active, Household Only, Household Only Augmented, and Commercial Use categories. Individual district lakes and hydrology layers will be created from Division-wide coverage. Key calling structures will be generated from Structure coverage with the help of local water commissioners. GPS will be available for water commissioners to help locate these structures and an ongoing process of quality control of structures, rights, and irrigated acres databases should be possible. In order to accomplish these goals, there are several tasks which will need to be addressed:

- Realization of GPS and digitizer obtained locations in DBASE or *Hydrobase*.
- Conversion of new Wells, Rights, Structure, and Irrigated Acres records to GIS coverage in a timely manner



- Properly locating existing point coverage (Wells, Structures, Rights) to an accuracy of greater than 40 acres (by distances from section lines, UTM, or Latitude/Longitude).

**b. Summit County Well Augmentation GIS Study** - One subject of ongoing statewide debate concerns administration of wells and augmentation plans. One issue is the importance of the impact of outdoor use of water pumped from wells that are permitted for in-house use only (out-of-compliance exempt wells). Division 5 has been involved in helping the Middle Park Water Conservancy District (MPWCD) and Summit County understand the potential magnitude of out-of-compliance wells in their jurisdictions. Using State GIS capabilities, key calling structure locations and elevation contour data, Division 5 staff generated Well Augmentation Sub-basins for Grand and Summit Counties. Alan Martellaro met with Water Commissioners Jim Daxton, Bill Thompson, and Scott Hummer to identify structures having the potential for making key calls within the MPWCD.

Fifteen areas were created in ARCVIEW such that any wells accurately defined by permit locations within the areas may be considered tributary to the associated reaches. Resulting areas were queried against the Division's Well Permits' GIS coverage to obtain for each sub-basin:

- Number of Active Wells
- Number of Household Use Exempt Wells
- Number of Household Use Augmented Wells
- Number of Domestic Wells

The active Wells data resulted from queries for Yield greater than zero. Other categories are subsets of the Active Wells data set and are based on queries for permitted Use Codes.

At the request of Bishop-Brogden Associates (consultants retained by MPWCD to investigate the need for well augmentation water), Division 5 staff further developed the Summit County wells database by tabulating the number of well permits for the four categories described above which are associated with each of the 35 reaches defined in the Blue River Agreements between Summit County and the Colorado Water Conservation Board (CWCB). A table summarizing the results is shown on Page 23.

A map generated in ARCVIEW on the page following (see page 24) shows the sub-basins, hydrology, lakes, and wells.

In exchange for the State GIS well permit coverage and development, Summit County agreed to share with Division 5 the County's GIS parcel coverage and assessor's information. This coverage will assist our Well Commissioners in issuing well permits and aid in any decision-making process where Summit County parcels and assessor information is of value. Shown on Page 24 is an example of the use of one of the new

USGS 7.5 minute quads and the Summit County Parcels coverage. The map on Page 25 shows the confluence of the Blue and Swan Rivers just above Dillon Reservoir along with county parcels and State wells and gage station coverage.

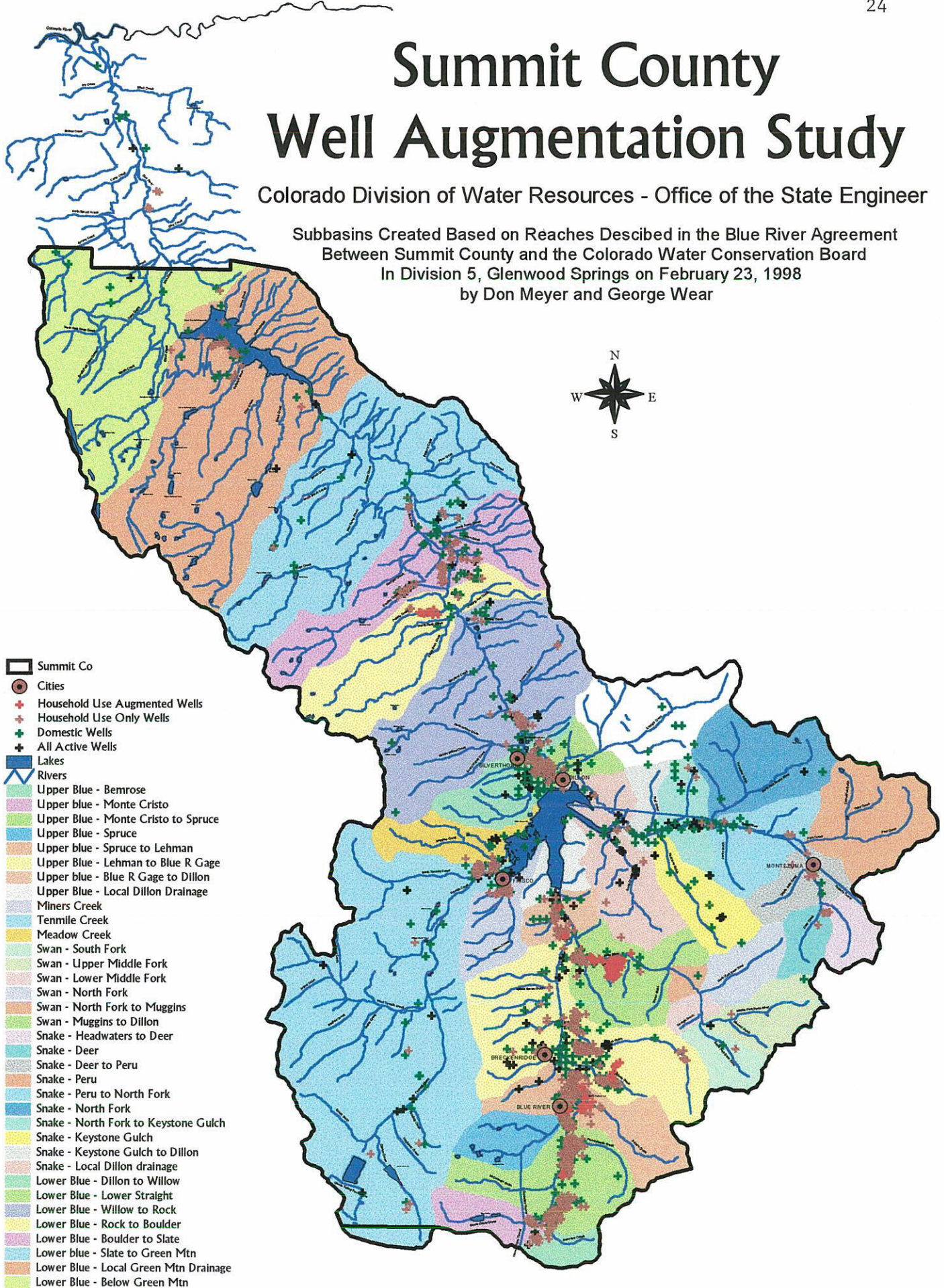
Summit County GIS Augmentation Study Well Inventory					
Area	Area Title	Active Wells *	Household Use Exempt **	Household Use Augmented **	Domestic Wells ***
BU-A	Upper Blue-Bemrose	29	27		1
BU-B	Upper Blue-Monte Cristo	31	21		7
BU-C	Upper Blue-Monte Cristo to Spruce	334	204	7	115
BU-D	Upper Blue-Spruce	16	7		9
BU-E	Upper Blue-Spruce to Lehman	153	92	19	36
BU-F	Upper Blue-Lehman to Blue R Gage	301	158	8	99
BU-G	Upper Blue-Blue R Gage to Dillon	79	37	3	28
BU-DILLON	Upper Blue-Local Dillon Drainage	6	1		4
MINERS	Miners Creek	59	35		19
TENMILE	Tenmile Creek	121	44		55
MEADOW	Meadow Creek	22	7		10
SW-A	Swan-South Fork	2	1		1
SW-B	Swan-Upper Middle Fork	3	1		1
SW-C	Swan-Lower Middle Fork				
SW-D	Swan-North Fork	1			1
SW-E	Swan-North Fork to Muggins	2			2
SW-F	Swan-Muggins to Dillon	110	29	46	24
SN-A	Snake-Headwaters to Deer	2	2		
SN-B	Snake-Deer	3	3		
SN-C	Snake-Deer to Peru	27	21		5
SN-D	Snake-Peru				
SN-E	Snake-Peru to North Fork	24	5		18
SN-F	Snake-North Fork	5			2
SN-G	Snake-North Fork to Keystone Gulch	43	3		22
SN-H	Snake-Keystone Gulch	16			11
SN-I	Snake-Keystone Gulch to Dillon	18	2		16
SN-DILLON	Snake-Local Dillon Drainage	39	7		13
BL-A	Lower Blue-Dillon to Willow	186	56		117
BL-1	Lower Blue-Lower Straight	72	38		29
BL-B	Lower Blue-Willow to Rock	83	40		33
BL-C	Lower Blue-Rock to Boulder	28	7	8	12
BL-D	Lower Blue-Boulder to Slate	73	44		23
BL-E	Lower Blue-Slate to Green Mtn	27	7		19
BL-F	Lower Blue-Local Green Mtn Drainage	36	20		15
BL-G	Lower Blue-Below Green Mtn	9	1		7
	Above Dillon	1446	707	83	499
	Below Dillon +	514	213	8	255
TOTAL	SUMMIT COUNTY +	1960	920	91	754

- \* All active wells (includes other 3 categories plus other uses)
- \*\* May be out of compliance if outdoor/commercial/multi-family use
- \*\*\* May be out of compliance if multi-family housing (e.g., caretaker units)
- + Does not include undefined area just below and east of Dillon Reservoir

# Summit County Well Augmentation Study

Colorado Division of Water Resources - Office of the State Engineer

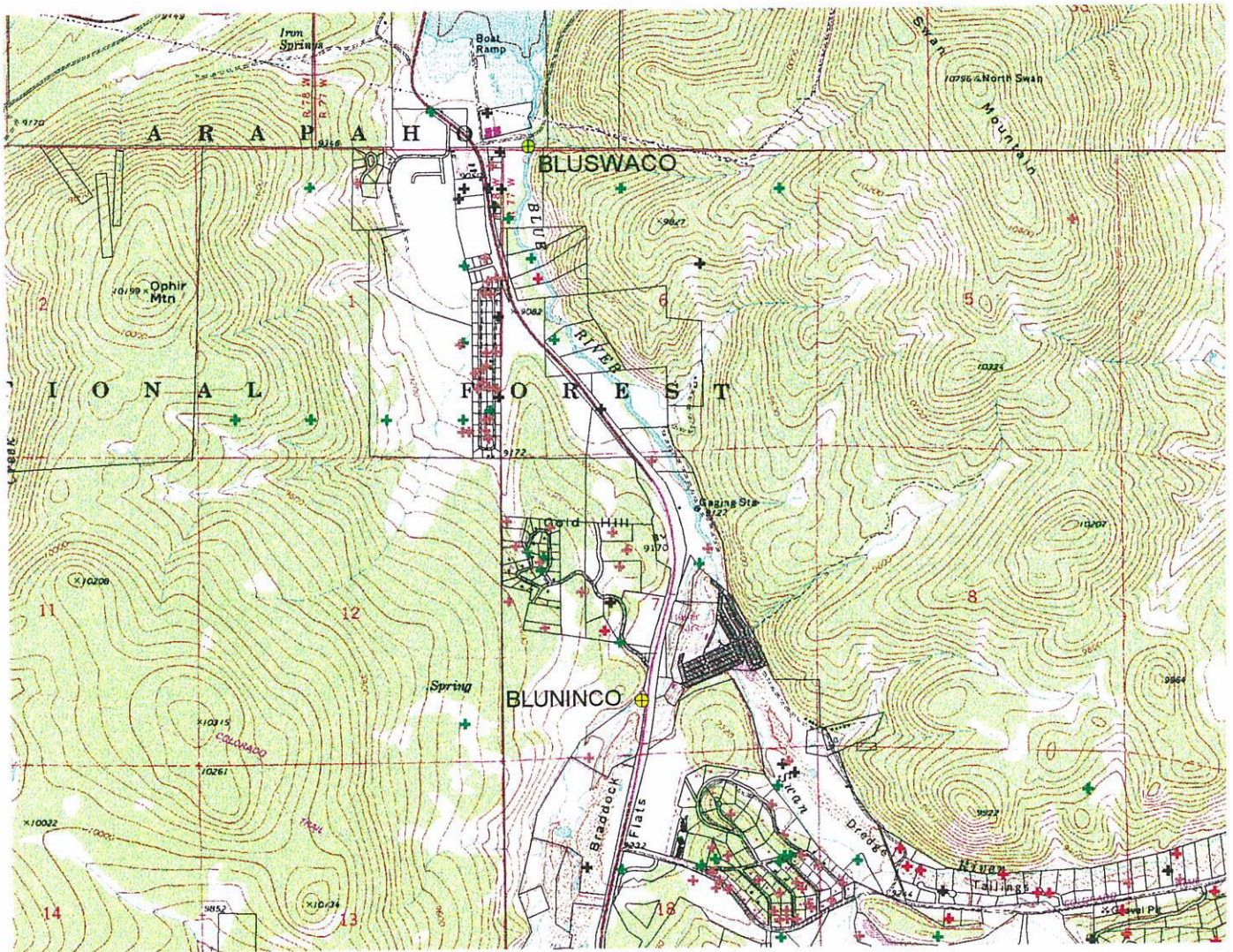
Subbasins Created Based on Reaches Described in the Blue River Agreement  
Between Summit County and the Colorado Water Conservation Board  
In Division 5, Glenwood Springs on February 23, 1998  
by Don Meyer and George Wear



- Summit Co
- Cities
- Household Use Augmented Wells
- Household Use Only Wells
- Domestic Wells
- All Active Wells
- Lakes
- Rivers
- Upper Blue - Bemrose
- Upper blue - Monte Cristo
- Upper Blue - Monte Cristo to Spruce
- Upper Blue - Spruce
- Upper blue - Spruce to Lehman
- Upper Blue - Lehman to Blue R Gage
- Upper blue - Blue R Gage to Dillon
- Upper Blue - Local Dillon Drainage
- Miners Creek
- Tenmile Creek
- Meadow Creek
- Swan - South Fork
- Swan - Upper Middle Fork
- Swan - Lower Middle Fork
- Swan - North Fork
- Swan - North Fork to Muggins
- Swan - Muggins to Dillon
- Snake - Headwaters to Deer
- Snake - Deer
- Snake - Deer to Peru
- Snake - Peru
- Snake - Peru to North Fork
- Snake - North Fork
- Snake - North Fork to Keystone Gulch
- Snake - Keystone Gulch
- Snake - Keystone Gulch to Dillon
- Snake - Local Dillon drainage
- Lower Blue - Dillon to Willow
- Lower Blue - Lower Straight
- Lower Blue - Willow to Rock
- Lower Blue - Rock to Boulder
- Lower Blue - Boulder to Slate
- Lower blue - Slate to Green Mtn
- Lower Blue - Local Green Mtn Drainage
- Lower Blue - Below Green Mtn

# Upper Blue River Gage Stations

- ⊕ Gage Stations
- + Household Use Only Wells
- + Household Use Only Augmented Wells
- + Domestic Wells
- + All Other Active Wells
- ▭ Parcels



II.A. TRANSMOUNTAIN DIVERSIONS

II.A.1. Inflows - see page 27

II.A.2. Outflows - see page 28

1997 TRANSMOUNTAIN DIVERSIONS - INFLOWS

RECIPIENT			SOURCE							
W D	ID	Name	Stream	10-Year Avg		Current YR		WD	ID	Stream
				AF	Days	AF	Days			
36	4677	ARKANSAS WELL	TENMILE CREEK	72.6	85.2	324	365	11		ARKANSAS RIVER
38	4682	ROARING FORK BYPASS	ROARING FORK	1699.7	325.2	1918	365	11		TWIN LAKES
45	4657	DIVIDE-HIGHLINE FEEDER	DIVIDE CREEK	1099.5	47.1	691	47	40		CLEAR FORK MUDDY
50	4600	SARVIS CREEK DITCH	RED DIRT CREEK	1054.8	169.4	553	25	58		SARVIS CREEK
53	4716	HOME CREEK DITCH	EGERIA CREEK	221	55.1	124	57	58		BEAR CREEK
53	4715	STILLWATER DITCH	EGERIA CREEK	1979.4	110.4	2320	94	58		BEAR CREEK
72	4713	REDLANDS POWER CANAL	COLORADO RIVER	539585.3	353.6	557143	351	42		GUNNISON RIVER
72	4711	GRAND JUNCTION	COLORADO RIVER	6169.8	364.8	4281	364	42		KANNAH CREEK
72	4712	FRUITA WATER WORKS	COLORADO RIVER	0	0	0	0	73		LITTLE DOLORES RIVER
				TOTAL:		567354				

1997 TRANSMOUNTAIN DIVERSIONS - OUTFLOWS

RECIPIENT										SOURCE			
WD ID	Name	Stream	10-Year Avg			Current YR			W D	ID	Stream		
			AF	Days	AF	Days	AF	Days					
7 4658	STRAIGHT CREEK TUNNEL	CLEAR CREEK	461.9	365.2	237	365	36			STRAIGHT CREEK			
7 4626	VIDLER TUNNEL	CLEAR CREEK	741.7	85.5	420	49	36			SNAKE RIVER			
23 4685	BOREAS PASS DITCH	TARRYALL CREEK	116.2	43.8	276	77	36			BLUE RIVER			
23 4699	HOOSIER TUNNEL	MAIN FORK OF SO. PLATTE	9601.4	147	8751	160	36			BLUE RIVER			
80 4684	ROBERTS TUNNEL	MAIN FORK OF SO. PLATTE	63065	271.3	53482	219	36			BLUE RIVER			
11 4641	COLUMBINE DITCH	TENNESSEE CREEK	1773.1	98.8	1727	111	37			SO. FORK OF EAGLE			
11 4642	EWING DITCH	TENNESSEE CREEK	1112.4	140.2	1350	126	37			SO. FORK OF EAGLE			
11 4614	HOMESTAKE TUNNEL	SO. PLATTE VIA ARKANSAS	27576.7	109	37547	99	37			HOMESTAKE CREEK			
11 4648	WURTZ DITCH	TENNESSEE CREEK	2714.6	104.3	4180	120	37			SO. FORK OF EAGLE			
11 4625	BOUSTEAD TUNNEL	LAKE FORK CREEK	56945.4	285.8	79438	363	38			FRYING PAN RIVER			
11 4613	BUSK-IVANHOE TUNNEL	LAKE FORK CREEK	4602.7	203.8	4540	336	38			FRYING PAN RIVER			
11 4617	TWIN LAKES TUNNEL	LAKE FORK CREEK	40615.6	364.9	35437	365	38			ROARING FORK RIVER			
3 4601	GRAND RIVER DITCH	CACHE LA POUFRE RIVER	17997.3	118.2	17936	103	51			NO. FORK COLORADO			
4 4602	EUREKA DITCH	CACHE LA POUFRE RIVER	42.1	33.3	0	0	51			NO. FORK COLORADO			
4 4634	ALVA B ADAMS TUNNEL	BIG THOMPSON RIVER	196159.9	356.8	229011	357	51			NO. FORK COLORADO			
6 4655	MOFFAT TUNNEL	BOULDER CREEK	53156	344.3	51513	352	51			FRASER RIVER			
7 4625	BERTHOUD PASS DITCH	CLEAR CREEK	848.8	83.9	2614	119	51			FRASER RIVER			
6 505	AUGUST P GUMBLICK	BOULDER CREEK VIA FRASER	INCLUSIVE IN MOFFAT TUNNEL				51			WILLIAMS FORK RIVER			
6 4603	VASQUEZ PIPELINE	BOULDER CREEK VIA FRASER	INCLUSIVE IN MOFFAT TUNNEL				51			WILLIAMS FORK RIVER			
40 758	LEON TUNNEL CANAL	SURFACE CREEK	1663.2	86.5	1380	54				LEON CREEK			
									TTL:	529839			



II.B. STORAGE WATER

Reservoir Storage Summaries by District  
On pages following (pp. 30-43)



RESERVOIR STORAGE SUMMARIES BY DISTRICT

1997	RESERVOIR NAME		SOURCE STREAM		AMOUNT IN STORAGE (AF)					
	ID				Minimum		Maximum		End Of Year	
					AF	Date	AF	Date		
36	3533	BLACK LAKE	BLACK CREEK	1,997.2	11/01/96	1,997.2	11/01/96	1,997.2	11/01/96	1,997.2
	3535	BUFFEHR ENLG RESERVOIR	TENMILE CREEK	56.6	05/01/97	111.4	11/01/96	111.4	11/01/96	73.1
	3538	CATARACT LAKE	CATARACT CREEK	1,652.8	11/01/96	1,652.8	11/01/96	1,652.8	11/01/96	1,652.8
	3575	CLINTON GULCH RESERVOIR	TENMILE CREEK	2,613.0	06/03/97	4,360.0	08/01/97	4,360.0	08/01/97	4,360.0
	4512	DILLON RESERVOIR BRDP	BLUE RIVER	205,321.0	04/30/97	255,797.4	07/31/97	255,797.4	07/31/97	250,527.2
	3542	GOOSE PASTURE TARN	BLUE RIVER	922.0	11/01/96	922.0	11/01/96	922.0	11/01/96	922.0
	3543	GREEN MOUNTAIN RES	BLUE RIVER	64,260.0	05/01/97	152,201.0	08/01/97	152,201.0	08/01/97	135,306.0
	3548	HOAGLAND RESERVOIR NO 1	ELLIOTT CREEK	50.0	11/01/96	110.0	05/20/97	110.0	05/20/97	86.0
	3643	KEYSTONE POND	SNAKE RIVER	100.0	11/01/96	100.0	11/01/96	100.0	11/01/96	100.0
	3606	OFFICER GULCH POND	TENMILE CREEK	100.0	11/01/96	100.0	11/01/96	100.0	11/01/96	100.0
	3565	REYNOLDS RESERVOIR	SODA CREEK	NO INFO	AVAILABLE		NO INFO		NO INFO	AVAILABLE
	3569	UPPER BLACK CREEK RES	BLACK CREEK	273.0	11/01/96	273.0	11/01/96	273.0	11/01/96	273.0
	3570	UPPER BLUE LAKE RES	BLUE RIVER	0.0	11/01/96	2,119.3	07/31/97	2,119.3	07/31/97	0.0
	3571	WAY RESERVOIR	BEAVER CREEK	65.0	07/17/97	93.0	06/10/97	93.0	06/10/97	66.0
36		Total of All Others < 50 AF		196.8		266.2		266.2		197.8
36		Total For District 36		277,607.4		420,103.3		420,103.3		395,661.1

RESERVOIR STORAGE SUMMARIES BY DISTRICT

1997 WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)						
				Minimum		Maximum		End Of Year		
				AF	Date	AF	Date	AF	Date	
37	3600	BENCHMARK LAKE	EAGLE RIVER	125.0	11/01/96	125.0	11/01/96	125.0	11/01/96	125.0
	3608	BLACK LAKE	GORE CREEK	140.0	02/01/97	362.0	11/01/96	362.0	11/01/96	362.0
	3510	BLACK LAKE NO 2	GORE CREEK	24.0	03/21/97	90.0	11/01/96	90.0	11/01/96	90.0
	3698	BOLTS LAKE	CROSS CREEK	34.0	11/01/96	34.0	11/01/96	34.0	11/01/96	34.0
	3513	CHALK MOUNTAIN RESERVOIR	EAGLE RIVER	236.1	11/01/96	236.1	11/01/96	236.1	11/01/96	236.1
	3699	CLIMAX MOLY NO 4 RES	EAGLE RIVER	0.0	11/01/96	1,338.0	10/31/97	1,338.0	10/31/97	1,338.0
	4516	HOMESTAKE RESERVOIR	HOMESTAKE CREEK	16,071.4	04/30/97	42,814.3	07/31/97	42,814.3	07/31/97	42,471.4
	3520	L E D E RESERVOIR	GYP SUM CREEK	310.0	11/01/96	344.0	06/12/97	310.0	06/12/97	310.0
	3522	NOECKER RESERVOIR	EBY CREEK	0.0	11/01/96	130.0	06/03/97	46.0	06/03/97	46.0
	3524	O Z LAKE (aka Sylvan Lake)	BRUSH CREEK	452.0	11/01/96	452.0	11/01/96	452.0	11/01/96	452.0
	3527	ROBINSON RESERVOIR	EAGLE RIVER	817.0	06/30/97	2,054.4	11/30/96	755.5	11/30/96	755.5
	3530	WELSH RESERVOIR	ALKALI CREEK	80.0	11/01/96	105.0	06/27/97	80.0	06/27/97	80.0
37		Total of All Others < 50 AF		76.3		83.3		76.3		76.3
37		Total for District 37		18,365.8		48,168.1		46,376.3		46,376.3

RESERVOIR STORAGE SUMMARIES BY DISTRICT

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)					
				Minimum		Maximum		End Of	
				AF	Date	AF	Date		
38	3711	ALICIA LAKE RESERVOIR	LIME CREEK	673.0	11/01/96	673.0	11/01/96	673.0	
	4000	BEAVER LAKE	CRYSTAL RIVER	72.5	11/01/96	72.5	11/01/96	72.5	
	3722	CONSOLIDATED RESERVOIR	WEST COULTER CREEK	10.0	11/01/96	866.0	04/25/97	260.8	
	3774	CRAWFORD DAM NO 1	BLUE CREEK	160.0	11/01/96	160.0	11/01/96	160.0	
	3773	CRAWFORD DAM NO 2	BLUE CREEK	56.0	11/01/96	56.0	11/01/96	56.0	
	3721	CROOKED CREEK RES	LIME CREEK	NO INFO	AVAIL		NO INFO	AVAIL	
	4087	CRYSTAL SPRING LAKE	CRYSTAL SPRING	80.0	11/01/96	80.0	11/01/96	80.0	
	4095	FLANNERY RESERVOIR	THREE MILE CREEK	57.0	11/01/96	57.0	11/01/96	57.0	
	3779	GRIZZLY RESERVOIR	LINCOLN CREEK	NO INFO	AVAIL		NO INFO	AVAIL	
	3727	HIMMELAND LAKE	FRYING PAN RIVER	92.0	11/01/96	92.0	11/01/96	92.0	
	3728	HOPKINS RESERVOIR	LANDIS CREEK	0.0	11/01/96	69.6	05/15/97	0.0	
	3729	HUGHES RESERVOIR	THREE MILE CREEK	66.5	11/01/96	88.0	08/01/97	88.0	
	3732	IVANHOE RESERVOIR	FRYING PAN RIVER	246.0	11/01/96	1,097.0	05/01/97	246.0	
	3832	JACOBSON LAKES & PONDS	ROARING FORK RIVER	225.0	11/01/96	225.0	11/01/96	225.0	
	4154	KODIAK LAKE & WETLANDS	ROARING FORK	60.0	11/01/96	60.0	11/01/96	60.0	
	3736	LAKE ANN RESERVOIR	SOPRIS CREEK	0.0	11/01/96	433.4	07/01/97	98.5	
		LAKE DEBORAH	SNOWMASS CREEK	57.0	11/01/96	57.0	11/01/96	57.0	
	3955	MCDULTY RESERVOIR #2	SHIPPEE RUN CREEK	30.0	10/01/97	72.0	06/01/97	30.0	
	3740	RALSTON RESERVOIR	COULTER CREEK	0.0	11/01/96	80.0	06/01/97	40.0	
	3713	RUEDI RESERVOIR	FRYING PAN RIVER	59,638.1	04/30/97	101,031.6	07/31/97	90,286.3	
	3744	SPRING PARK RESERVOIR	CATTLE CREEK	44.8	11/01/96	1,750.9	07/01/97	399.9	
	3747	THOMAS RESERVOIR	THOMAS CREEK	160.0	11/01/96	160.0	11/01/96	160.0	
	3753	UPPER CHAPMAN RES	FRYINGPAN RIVER	119.0	11/01/96	119.0	11/01/96	119.0	
	3750	VAN-CLEVE FISHER RES	MESA CREEK	0.0	11/01/96	553.0	04/14/97	0.0	
	3752	VON SPRINGS RESERVOIR #2	COULTER CREEK	22.0	11/01/96	248.0	06/15/97	30.0	
	3759	WILDCAT RESERVOIR	SNOWMASS CREEK	1,100.0	11/01/96	1,100.0	11/01/96	1,100.0	
	3760	WOODS LAKE RESERVOIR	LIME CREEK	300.0	11/01/96	300.0	11/01/96	300.0	
38		Total of All Others < 50 AF		590.6		817.6		764.1	
38		Total for District 38		63,859.5		110,318.6		95,455.1	

RESERVOIR STORAGE SUMMARIES BY DISTRICT

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)					
				Minimum		Maximum		End Of Year	
				AF	Date	AF	Date	AF	Date
39	3999	CHAMBERS POND NO 1	COLORADO RIVER	100.0	11/01/96	137.0	06/01/97	100.0	
	4000	CHAMBERS POND NO 2	COLORADO RIVER	200.0	11/01/96	239.0	06/01/97	200.0	
	4002	CHAMBERS POND NO 4	COLORADO RIVER	170.0	11/01/96	180.0	06/01/97	170.0	
39	3927	CITY OF RIFLE POND NO 1	COLORADO RIVER	0.0	07/01/97	112.0	06/01/97	0.0	
	3505	GRASS VALLEY RESERVOIR	RIFLE CREEK	3,158.0	09/01/97	5,800.0	05/01/97	3,330.0	
	3506	HARRIS RESERVOIR	WEST RIFLE CREEK	50.0	07/01/97	200.0	01/01/97	50.0	
	3940	MEADOW CREEK RESERVOIR	ELK CREEK	885.6	11/01/97	984.0	06/01/97	885.6	
	3941	MIDDLE FORK RESERVOIR	PARACHUTE CREEK	85.0	11/01/96	100.0	06/01/97	85.0	
	3507	PARK RESERVOIR	WEST ELK CREEK	0.0	09/30/97	140.0	11/01/96	0.0	
	3508	RIFLE GAP RESERVOIR	RIFLE CREEK	4,471.0	11/01/96	12,312.0	04/01/97	10,121.0	
39		Total of All Others < 50 AF		36.4		74.3		35.9	
39		TOTAL FOR DISTRICT 39		9,156.0		20,278.3		14,977.5	

RESERVOIR STORAGE SUMMARIES BY DISTRICT

1997		AMOUNT IN STORAGE (AF)						
WD	ID	RESERVOIR NAME	SOURCE STREAM	Minimum		Maximum		End Of Year
				AF	Date	AF	Date	
45	3603	PORTER RESERVOIR	EAST AKALI CREEK	47.0	10/03/97	206.0	05/10/97	47.0
45	3695	ALSBURY RESERVOIR	EAST DIVIDE CREEK	50.0	10/31/97	250.0	11/01/96	50.0
45		Total of All Others < 50 AF		63.8		288.3		64.3
45		TOTAL FOR DISTRICT 45		160.8		744.3		161.3

RESERVOIR STORAGE SUMMARIES BY DISTRICT

1997		AMOUNT IN STORAGE (AF)									
WD	ID	RESERVOIR NAME	SOURCE STREAM	Minimum		Maximum		End Of Year			
				AF	Date	AF	Date		AF	Date	
50	3644	ALBERT RESERVOIR	ALBERT CREEK	0.0	11/01/96	126.0	06/12/97	0.0			0.0
	3606	ANTELOPE RESERVOIR	ANTELOPE CREEK	100.0	07/24/97	346.0	05/27/97	190.0			190.0
	3651	BASIN RESERVOIR	MUDDY CREEK	20.0	11/01/96	118.0	06/12/97	45.0			45.0
	3645	BINCO RESERVOIR	ALBERT CREEK	0.0	11/01/96	517.0	06/12/97	0.0			0.0
	3618	HINMAN RESERVOIR	PASS CREEK	420.0	07/08/97	611.0	06/06/97	520.0			520.0
	3623	LAKE AGNES	MUDDY CREEK	400.0	11/01/96	431.0	06/06/97	400.0			400.0
	3646	MARTIN RESERVOIR	COLBURN CREEK	80.0	06/27/97	180.0	11/01/96	150.0			150.0
	3625	MATHESON RESERVOIR	TROUBLESOME CREEK	400.0	06/23/97	1,073.0	05/27/97	600.0			600.0
	3627	MC ELROY RESERVOIR	PASS CREEK	0.0	11/01/96	240.0	06/06/97	0.0			0.0
	3629	MC MAHON RESERVOIR NO 2	RED DIRT CREEK	0.0	11/01/96	3,500.0	06/12/97	25.0			25.0
	3655	MILK CREEK RESERVOIR	MILK CREEK	0.0	11/01/96	100.0	06/12/97	0.0			0.0
	3656	NORTH MEADOW RESERVOIR	MUDDY CREEK	0.0	11/01/96	150.0	06/12/97	0.0			0.0
	3631	OAKS RESERVOIR	MILK CREEK	13.0	08/06/97	53.0	06/06/97	14.0			14.0
	3632	PARSONS RESERVOIR	CARTER CREEK	20.0	11/01/96	107.0	05/30/97	20.0			20.0
	3642	WHITELEY PEAK RESERVOIR	DIAMOND CREEK	500.0	08/11/97	773.0	06/06/97	525.0			525.0
	3657	WOLFORD MOUNTAIN RESERVOIR	MUDDY CREEK	43,915.2	04/30/97	67,196.2	05/31/97	51,636.5			51,636.5
	3643	WOODS RESERVOIR	DUNNING CREEK	19.0	11/01/96	67.0	05/27/97	40.0			40.0
	3666	DUMONT LAKE	MUDDY CREEK	NO INFO	AVAILABLE		NO INFO	AVAILABLE			AVAILABLE
50		Total of All Others < 50 AF		135.9		346.6		156.4			156.4
50		TOTAL FOR DISTRICT 50		46,023.1		75,934.8		54,321.9			54,321.9



RESERVOIR STORAGE SUMMARIES BY DISTRICT

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)									
				Minimum		Maximum		End Of					
				AF	Date	AF	Date	AF	Date				
1997													
51	4006	BULL RUN CREEK RESERVOIR	BULL RUN CREEK	90.0	11/01/96	125.0	05/21/97	120.0					
	4055	CBT GRANBY RESERVOIR	COLORADO RIVER	418,773.0	04/30/97	536,214.0	07/31/97	529,507.0					
	3695	CBT SHADOW MOUNTAIN GRAND LAKE	NO. FORK OF COLO RIVER	17,337.0	05/31/97	18,002.0	10/31/97	18,002.0					
	3710	CBT WILLOW CREEK RESERVOIR	WILLOW CREEK	7,310.0	03/31/97	10,121.0	07/31/97	8,450.0					
	4012	COTTONWOOD RESERVOIR	GARDINER CREEK	20.0	07/01/97	129.0	05/22/97	112.0					
	3715	EAST BRANCH RESERVOIR	UTE CREEK	1,250.0	04/15/97	2,000.0	07/09/97	1,700.0					
	3660	F W LINKE NO 2 RESERVOIR	TEN MILE CREEK	15.2	10/31/97	61.2	05/01/97	15.2					
	3665	HANKINSON RESERVOIR	FRASER RIVER	116.0	11/01/96	116.0	11/01/97	116.0					
	4009	JACK ORR RESERVOIR	COLORADO RIVER	NO INFO	AVAILABLE	NO INFO	NO INFO	NO INFO					
	3752	KINGS RESERVOIR	BUFFALO CREEK	320.0	11/01/96	659.6	05/28/97	339.3					
	3679	LANGHOLEN RESERVOIR	BATTLE CREEK	8.0	11/01/97	65.0	05/21/97	15.0					
	3686	MEADOW CREEK RESERVOIR	MEADOW CREEK	1,606.0	11/30/96	5,501.0	06/30/97	3,594.0					
	3687	MOORE RESERVOIR	WILLIAMS FORK RIVER	40.0	11/01/96	138.0	06/10/97	80.0					
	3688	MUSGRAVE RESERVOIR	ROCK CREEK	0.0	11/01/96	350.0	06/10/97	0.0					
	3693	ROCK CREEK RESERVOIR	ROCK CREEK	0.0	11/01/96	0.0		0.0					
	3694	SCHOLL RESERVOIR	CORRAL CREEK	0.0	11/01/96	321.0	06/11/97	0.0					
	3734	SNOW MOUNTAIN RESERVOIR NO 1	POLE CREEK	92.2	07/01/97	173.7	11/01/96	150.0					
	4051	SUN VALLEY RESERVOIR	NO. FORK OF COLO RIVER	72.0	11/01/96	72.0	11/01/96	72.0					
	3701	SYLVAN RESERVOIR	LITTLE MUDDY CREEK	0.0	11/01/96	400.0	06/12/97	0.0					
	3738	UTE CREEK RESERVOIR	UTE CREEK	70.0	11/01/96	100.0	06/09/97	75.0					
	3709	WILLIAMS FORK RES	WILLIAMS FORK RIVER	61,044.0	04/30/97	96,076.0	06/30/97	87,737.0					
51		Total of All Other Reservoirs Less Than 50 AF		230.9		421.2		244.6					
51		TOTAL FOR DISTRICT 51		508,394.3		671,045.7		650,329.1					

RESERVOIR STORAGE SUMMARIES BY DISTRICT

1997				AMOUNT IN STORAGE (AF)				
WD	ID	RESERVOIR NAME	SOURCE STREAM	Minimum		Maximum		End Of Year
				AF	Date	AF	Date	
52	3940	JONES RESERVOIR	HENRY CREEK	37.9	11/01/96	69.2	04/24/97	42.5
	3982	MARMA LAKE	PINEY RIVER	63.0	11/01/96	63.0	11/01/96	63.0
	3946	OXFORD RESERVOIR	COLORADO RIVER	0.0	06/12/97	59.0	10/31/97	59.0
	3949	ROCK GAP DAM	HARTMAN GULCH	38.6	11/01/96	51.0	10/31/97	51.0
52		Total of All Others < 50 AF		134.4		197.4		137.4
52		TOTAL FOR DISTRICT 52		273.9		439.6		352.9

RESERVOIR STORAGE SUMMARIES BY DISTRICT

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)					
				Minimum		Maximum		End Of Year	
				AF	Date	AF	Date		
53	3959	CLYDE RESERVOIR	EGERIA CREEK	0.0	11/01/96	66.0	05/19/97	0.0	
	3960	CRESENT LAKE RESERVOIR	DERBY CREEK	56.0	10/31/97	237.0	06/13/97	56.0	
	3961	ED W HARPER RESERVOIR	EGERIA CREEK	40.0	11/01/96	194.0	05/19/97	93.0	
	3962	EGERIA RESERVOIR	EGERIA CREEK	0.0	11/01/96	80.0	05/19/97	0.0	
	3966	GRIMES BROOKS RESERVOIR	RED DIRT CREEK	116.0	11/01/96	408.0	05/29/97	233.0	
	3968	HADLEY RESERVOIR	EGERIA CREEK	0.0		0.0		0.0	
	3971	HEART LAKE RESERVOIR	DEEP CREEK	2,443.0	11/01/96	3,100.0	08/25/97	2,443.0	
	3972	HIDDEN SPRINGS RESERVOIR	HORSE CREEK	50.0	11/01/96	50.0	11/01/96	50.0	
	3974	JONES NO 1 RESERVOIR	SHEEP CREEK NO 2	0.0	11/01/96	240.0	05/18/97	0.0	
	3975	JONES NO 2 RESERVOIR	SHEEP CREEK NO 2	260.0	11/01/96	400.0	05/18/97	300.0	
	3978	KELLY RESERVOIR	EGERIA CREEK	59.0	10/31/97	183.0	05/19/97	59.0	
	3982	LUARK RESERVOIR	SPRING CREEK	42.0	11/01/96	90.0	10/31/97	50.0	
	4020	MACKINAW LAKE RES NO 2	DERBY CREEK	40.0	10/31/97	138.0	06/13/97	40.0	
	3986	MORRIS RESERVOIR	TOPONAS CREEK	0.0		0.0		0.0	
	3988	NEWTON GULCH RES	KING CREEK	0.0	11/01/96	114.0	06/05/97	58.0	
	3992	REID NO 3 RESERVOIR	EGERIA CREEK	0.0	11/01/96	60.0	06/20/97	15.0	
	3995	STERNER RESERVOIR	EGERIA CREEK	0.0	11/01/96	195.0	05/19/97	0.0	
	3997	SWEETWATER RESERVOIR	SWEETWATER CREEK	490.0	11/01/96	490.0	11/01/96	490.0	
	3999	TONIER GULCH RES	TOPONAS CREEK	10.0	11/01/96	60.0	06/05/97	10.0	
	4001	TOPONAS ROCK NO 2 RES	TOPONAS CREEK	137.0	11/01/96	196.0	06/05/97	142.0	
	4004	WOHLER RESERVOIR	ELK CREEK	70.0	11/01/96	82.0	06/12/97	82.0	
53		Total of All Others < 50 AF		215.9		382.7		260.7	
53		TOTAL FOR DISTRICT 53		4,028.9		6,765.7		4,381.7	

RESERVOIR STORAGE SUMMARIES BY DISTRICT

1997		RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)				
WD	ID			Minimum		Maximum		End Of Year
				AF	Date	AF	Date	
70								
70		Total of All Others < 50 AF						
70		TOTAL FOR DISTRICT 70		0.0		0.0	0.0	

RESERVOIR STORAGE SUMMARIES BY DISTRICT

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)					
				Minimum		Maximum		End Of	
				AF	Date	AF	Date		
72	3833	ANDERSON BROS RES NO 1	LEON CREEK	0.0	11/01/96	216.0	05/22/97	6.0	
	3887	BIG BEAVER RESERVOIR	BULL CREEK	0.0	11/01/96	126.7	05/09/97	0.0	
	3904	BIG CREEK NO 1 RESERVOIR	BIG CREEK	0.0	11/01/96	701.5	05/15/97	701.5	
	3905	BIG CREEK NO 3 RESERVOIR	BIG CREEK	1,036.0	04/15/97	1,549.4	11/01/96	1,549.4	
	3906	BIG CREEK NO 4 RESERVOIR	BIG CREEK	0.0	12/12/96	188.4	06/12/97	188.4	
	3907	BIG CREEK NO 5 RESERVOIR	BIG CREEK	0.0	11/25/96	104.6	11/01/96	104.6	
	3909	BIG CREEK NO 7 RESERVOIR	BIG CREEK	620.6	05/05/97	1,222.6	05/19/97	868.7	
	3841	BOB MC KELVIE RESERVOIR	PLATEAU CREEK	0.0	11/01/96	291.0	07/17/96	291.0	
	3888	BULL BASIN NO 1 RES	BULL CREEK	70.0	11/01/96	124.2	03/22/97	124.2	
	3889	BULL BASIN NO 2 RES	BULL CREEK	0.0	11/01/96	92.3	07/17/97	0.4	
	3890	BULL CREEK NO 1 RES	BULL CREEK	0.0	11/01/96	60.0	03/22/97	60.0	
	3891	BULL CREEK NO 2 RES	BULL CREEK	0.0	11/01/96	62.2	03/22/97	62.2	
	3892	BULL CREEK NO 3 RES	BULL CREEK	0.0	11/01/96	59.2	03/22/97	0.0	
	3893	BULL CREEK NO 4 RES	BULL CREEK	0.0	11/01/96	202.5	03/22/97	0.0	
	3894	BULL CREEK NO 5 RES	BULL CREEK	42.4	11/01/96	244.7	03/22/97	194.0	
	3834	COLBY HORSE PARK RES	LEON CREEK	28.0	11/01/96	437.7	06/01/97	255.0	
	3883	COON CREEK NO 1 RES	COON CREEK	118.2	11/01/96	396.0	05/24/97	372.0	
	3884	COON CREEK NO 2 RES	COON CREEK	0.0	11/01/96	165.4	07/01/97	0.0	
	3885	COON CREEK NO 3 RES	COON CREEK	52.0	11/01/96	158.3	05/21/97	68.3	
	3923	COTTONWOOD LAKES RES NO 1	COTTONWOOD CREEK	774.6	03/26/97	1,939.6	10/14/97	1,939.6	
	3924	COTTONWOOD LAKES RES NO 2	COTTONWOOD CREEK	0.0	11/01/96	206.1	05/29/97	0.0	
	3925	COTTONWOOD LAKES RES NO 4	COTTONWOOD CREEK	135.2	11/01/96	303.0	05/27/97	303.0	
	3926	COTTONWOOD LAKES RES NO 5	COTTONWOOD CREEK	219.8	05/12/97	342.3	06/02/97	342.3	
	4065	CURRIER RESERVOIR NO 2	BUZZARD CREEK	144.0	11/01/96	190.0	05/20/97	182.0	
	3910	DAWSON RESERVOIR	BIG CREEK	0.0	11/05/96	213.4	05/22/97	213.4	
	3920	ECHO LAKE RESERVOIR	BIG SALT WASH	0.0	11/01/96	95.5	04/01/97	44.9	
	3914	GROVE CREEK RESERVOIR NO 1	GROVE CREEK	0.0	11/01/96	251.7	05/22/97	0.0	
	3915	GROVE CREEK RESERVOIR NO 2	GROVE CREEK	0.0	11/01/96	75.5	06/11/97	0.0	
72		Subtotal This Page		3,240.8		10,019.8		7,870.9	

RESERVOIR STORAGE SUMMARIES BY DISTRICT

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)					
				Minimum		Maximum		End Of	
				AF	Date	AF	Date		
72	3833	ANDERSON BROS RES NO 1	LEON CREEK	0.0	11/01/96	216.0	05/22/97	6.0	
	3887	BIG BEAVER RESERVOIR	BULL CREEK	0.0	11/01/96	126.7	05/09/97	0.0	
	3904	BIG CREEK NO 1 RESERVOIR	BIG CREEK	0.0	11/01/96	701.5	05/15/97	701.5	
	3905	BIG CREEK NO 3 RESERVOIR	BIG CREEK	1,036.0	04/15/97	1,549.4	11/01/96	1,549.4	
	3906	BIG CREEK NO 4 RESERVOIR	BIG CREEK	0.0	12/12/96	188.4	06/12/97	188.4	
	3907	BIG CREEK NO 5 RESERVOIR	BIG CREEK	0.0	11/25/96	104.6	11/01/96	104.6	
	3909	BIG CREEK NO 7 RESERVOIR	BIG CREEK	620.6	05/05/97	1,222.6	05/19/97	868.7	
	3841	BOB MC KELVIE RESERVOIR	PLATEAU CREEK	0.0	11/01/96	291.0	07/17/96	291.0	
	3888	BULL BASIN NO 1 RES	BULL CREEK	70.0	11/01/96	124.2	03/22/97	124.2	
	3889	BULL BASIN NO 2 RES	BULL CREEK	0.0	11/01/96	92.3	07/17/97	0.4	
	3890	BULL CREEK NO 1 RES	BULL CREEK	0.0	11/01/96	60.0	03/22/97	60.0	
	3891	BULL CREEK NO 2 RES	BULL CREEK	0.0	11/01/96	62.2	03/22/97	62.2	
	3892	BULL CREEK NO 3 RES	BULL CREEK	0.0	11/01/96	59.2	03/22/97	0.0	
	3893	BULL CREEK NO 4 RES	BULL CREEK	0.0	11/01/96	202.5	03/22/97	0.0	
	3894	BULL CREEK NO 5 RES	BULL CREEK	42.4	11/01/96	244.7	03/22/97	194.0	
	3834	COLBY HORSE PARK RES	LEON CREEK	28.0	11/01/96	437.7	06/01/97	255.0	
	3883	COON CREEK NO 1 RES	COON CREEK	118.2	11/01/96	396.0	05/24/97	372.0	
	3884	COON CREEK NO 2 RES	COON CREEK	0.0	11/01/96	165.4	07/01/97	0.0	
	3885	COON CREEK NO 3 RES	COON CREEK	52.0	11/01/96	158.3	05/21/97	68.3	
	3923	COTTONWOOD LAKES RES NO 1	COTTONWOOD CREEK	774.6	03/26/97	1,939.6	10/14/97	1,939.6	
	3924	COTTONWOOD LAKES RES NO 2	COTTONWOOD CREEK	0.0	11/01/96	206.1	05/29/97	0.0	
	3925	COTTONWOOD LAKES RES NO 4	COTTONWOOD CREEK	135.2	11/01/96	303.0	05/27/97	303.0	
	3926	COTTONWOOD LAKES RES NO 5	COTTONWOOD CREEK	219.8	05/12/97	342.3	06/02/97	342.3	
	4065	CURRIER RESERVOIR NO 2	BUZZARD CREEK	144.0	11/01/96	190.0	05/20/97	182.0	
	3910	DAWSON RESERVOIR	BIG CREEK	0.0	11/05/96	213.4	05/22/97	213.4	
	3920	ECHO LAKE RESERVOIR	BIG SALT WASH	0.0	11/01/96	95.5	04/01/97	44.9	
	3914	GROVE CREEK RESERVOIR NO 1	GROVE CREEK	0.0	11/01/96	251.7	05/22/97	0.0	
	3915	GROVE CREEK RESERVOIR NO 2	GROVE CREEK	0.0	11/01/96	75.5	06/11/97	0.0	
72		Subtotal This Page		3,240.8		10,019.8		7,870.9	

RESERVOIR STORAGE SUMMARIES BY DISTRICT

WD	ID	RESERVOIR NAME	SOURCE STREAM	AMOUNT IN STORAGE (AF)							
				Minimum			Maximum				
				AF	Date	AF	AF	Date	End Of Year		
1995											
72	3849	HAWXHURST RESERVOIR	HAWXHURST CREEK	0.0	11/01/96	206.8	07/01/97	0.0			
	3957	HIGHLINE RESERVOIR	COLORADO RIVER	2,627.0	04/15/97	3,352.0	04/29/97	3,352.0			3,352.0
	3929	JENSEN RESERVOIR	COTTONWOOD CREEK	51.9	11/01/96	90.7	07/25/97	90.7			90.7
	3961	JERRY CREEK RESERVOIR NO 1	PLATEAU CREEK	972.6	03/31/97	1,128.2	12/31/97	1,121.7			1,121.7
	3962	JERRY CREEK RESERVOIR NO 2	PLATEAU CREEK	6,186.8	01/31/97	6,320.9	11/30/97	6,320.9			6,320.9
	3837	KENDALL RESERVOIR	LEON CREEK	0.0	11/01/96	76.0	06/17/96	76.0			76.0
	3838	KIRKENDALL RESERVOIR	LEON CREEK	0.0	11/01/96	161.0	09/17/97	161.0			161.0
	3839	LEON LAKE RESERVOIR	LEON CREEK	147.5	11/01/96	2,164.1	07/28/97	1,226.1			1,226.1
	3895	LOST LAKE RESERVOIR	BULL CREEK	0.0	11/01/96	91.4	06/24/97	50.7			50.7
	4077	MACK MESA RESERVOIR	MACK WASH	125.6	04/17/97	131.0	11/01/96	131.0			131.0
	3871	MESA CREEK NO 1 RESERVOIR	MESA CREEK	179.1	11/01/96	280.2	05/22/97	200.2			200.2
	3872	MESA CREEK NO 2 RESERVOIR	MESA CREEK	48.8	11/01/96	48.8	11/01/96	48.8			48.8
	3873	MESA CREEK NO 3 RESERVOIR	MESA CREEK	0.0	11/01/96	238.9	06/17/97	134.4			134.4
	3874	MESA CREEK NO 4 RESERVOIR	MESA CREEK	0.0	03/22/97	424.1	06/10/97	66.7			66.7
	3842	MONUMENT NO 1 RESERVOIR	LEON CREEK	0.0	11/01/96	572.0	07/17/97	572.0			572.0
	3843	MONUMENT NO 2 RESERVOIR	LEON CREEK	0.0	11/01/96	168.0	07/17/97	168.0			168.0
	3854	PALISADE CABIN RESERVOIR	RAPID CREEK	785.3	04/08/97	1,021.9	06/16/97	983.3			983.3
	3932	PARKER BASIN RESERVOIR NO 1	COTTONWOOD CREEK	131.4	04/16/97	271.6	01/21/97	271.6			271.6
	3933	PARKER BASIN RESERVOIR NO 2	COTTONWOOD CREEK	0.0	11/04/96	60.0	05/19/97	54.9			54.9
	3934	PARKER BASIN RESERVOIR NO 3	COTTONWOOD CREEK	0.0	11/01/96	312.0	06/09/97	164.1			164.1
	3858	RAPID CREEK NO 1 RESERVOIR	RAPID CREEK	185.3	03/24/97	713.5	05/26/97	249.0			249.0
	3859	RAPID CREEK NO 2 RESERVOIR	RAPID CREEK	0.0	11/01/96	521.1	05/26/97	25.2			25.2
	3901	STUBB MCKINNEY CLARK RESERVOIR	SPRING CREEK	10.3	11/01/96	218.8	06/10/97	153.4			153.4
	3931	T E KITSON RESERVOIR	COTTONWOOD CREEK	91.2	04/08/97	184.3	06/09/97	184.3			184.3
	3902	TWIN BASIN RESERVOIR	BULL CREEK	0.0	07/22/97	118.6	05/28/97	4.9			4.9
	3844	VEGA RESERVOIR	PLATEAU CREEK	6,081.0	11/01/96	33,567.0	05/31/97	17,203.0			17,203.0
	3919	Y T RESERVOIR	GROVE CREEK	29.0	11/01/96	129.7	06/30/97	119.0			119.0
72		Subtotal This Page		9,838.3		11,174.6		10,961.3			10,961.3
72		Subtotal Previous Page(s)		3,240.8		10,019.8		7,870.9			7,870.9
72		Total of All Reservoirs Less Than 50 AF		80.1		314.2		191.5			191.5
72		TOTAL FOR DISTRICT 72		13,159.2		21,508.6		19,023.7			19,023.7

II.C. WATER DIVERSIONS

Pages 45-46



DIVISION 5 -- 1997  
WATER DIVERSION SUMMARIES

WD	STRUCTURES REPORTING			ALL OTHER STRUCTURES		ESTIMATED NUMBER OF VISITS TO STRUCTURE	TOTAL DIVERSIONS AF	TOTAL DIVERSIONS TO STORAGE AF	TO IRRIGATION		
	WITH RECORD (1)	NO WATER AVAILABLE (2)	NO WATER TAKEN (3)	NO INFO AVAILABLE (4)	NO RECORD (5)				TOTAL DIVERSIONS AF	NUMBER OF ACRES IRRIGATED	AVERAGE AF PER ACRE
36	238	1	108	135	171	10,141	847,288	163,236	90,241	12,547	7.19
37	257	0	259	125	370	4,634	199,587	31,998	103,323	14,636	7.06
38	1,340	8	200	734	320	5,327	680,055	50,428	295,371	33,829	8.73
39	508	1	166	154	195	525	173,348	11,094	125,344	22,040	5.69
45	615	21	99	7	114	3,055	162,975	474	145,365	25,842	5.63
50	185	0	23	5	23	1,355	154,400	58,300	89,797	21,980	4.09
51	344	0	166	176	209	25,269	806,419	204,759	160,397	25,386	6.32
52	118	0	85	11	67	314	29,964	229	27,635	5,451	5.07
53	259	0	97	30	86	960	969,467	2,789	92,008	17,635	5.22
70	209	20	46	2	102	645	52,769	89	51,538	6,640	7.76
72	538	3	127	340	335	28,803	1,927,139	52,381	865,676	112,315	7.71
TTL	4,611	54	1,376	1,719	1,992	81,028	6,003,411	575,777	2,046,695	298,301	6.41

Definitions:

- (1) Count of structures with CIU = A and NUC = blank.
- (2) Count of structures with CIU = A and NUC = B.
- (3) Count of structures with CIU = A and NUC = {A,C,d} + CIU = I.
- (4) Count of structures with CIU = A and NUC = {E,F}.
- (5) Count of structures with CIU = U.

DIVISION 5 -- 1997  
WATER DIVERSION SUMMARIES TO VARIOUS USES (AF)

WD	TRANSMOUNTAIN OUTFLOW	TRANSBASIN OUTFLOW	MUNICIPAL	COMMERCIAL	INDUSTRIAL	RECREATION	FISHERY	DOMESTIC & HOUSEHOLD	STOCK
36	63,166	0	6,932	43	1,363	3,344	747	434	12
37	44,803	0	12,102	1	2,516	0	506	78	1,070
38	119,415	722	8,040	32	817	72	56,233	1,931	6,302
39	0	1,415	2,252	6	25	0	27,662	566	2,240
45	0	0	1,359	3	18	0	0	1,408	14,031
50	0	0	436	48	0	0	120	17	200
51	301,073	1,961	2,336	67	759	473	1,464	255	1,706
52	0	0	0	1	4	0	724	47	1,209
53	0	0	2,590	0	0	6	382	303	456
70	0	0	262	0	0	0	0	313	479
72	1,380	494	18,507	0	617	0	7,863	269	17,166
<b>TOTAL</b>	<b>529,837</b>	<b>4,592</b>	<b>54,816</b>	<b>201</b>	<b>6,119</b>	<b>3,895</b>	<b>95,701</b>	<b>5,621</b>	<b>44,871</b>

WD	AUGMENTATION	EVAPORATION	GEOTHERMAL	SNOWMAKING	MINIMUM STREAMFLOW	POWER GENERATION	WILDLIFE	RECHARGES	OTHER
36	2,108	12,833	0	796	0	502,032	0	0	1
37	1,002	626	0	114	0	1,448	0	0	0
38	23	3,152	53	161	1,918	131,905	1,078	0	2,402
39	1,228	1,353	0	0	0	163	0	0	0
45	0	272	0	0	0	45	0	0	0
50	0	5,482	0	0	0	0	0	0	0
51	794	25,631	0	174	0	104,570	0	0	0
52	0	91	0	0	0	0	24	0	0
53	0	1,025	0	0	0	869,699	209	0	0
70	0	88	0	0	0	0	0	0	0
72	687	2,662	0	0	0	959,370	67	0	0
<b>TOTAL</b>	<b>5,842</b>	<b>53,215</b>	<b>53</b>	<b>1,245</b>	<b>1,918</b>	<b>2,569,232</b>	<b>1,378</b>	<b>0</b>	<b>2,403</b>

II.D. **WATER COURT ACTIVITIES**

**Calendar Year 1997**

Applications Made to Water Court.....	308
Div 5 DWR - Colorado River.....	300
Div 6 DWR - White River.....	8
No. of Consultations With Referee.....	386
No. of Complaints.....	0
No. of Withdrawn Cases.....	7
No. of Dismissals.....	31
No. of Denials.....	6
No. of Deletions From 1990 Abandonment List....	1

No. of Cases Decreed by Water Court                      356 (see breakdown below)

TYPE OF DECREE	# Cases (including combinations)	# Structures
Findings of Diligence on Conditional Rights	107	340
Cancellations of Conditional Rights	11	93
Conditional Rights Made Absolute	35	58
Surface Water Rights Adjudicated	88	151
Underground Water Rights Adjudicated	27	68
Water Storage Rights Adjudicated	37	102
Plans for Augmentation Adjudicated	37	419
Changes of Water Right (location) Adjudicated	40	137
Changes of Water Right (use) Adjudicated	5	12
Instream Flow Rights Adjudicated	22	N/a
Amend Augmentation Plans	5	39
Total:		1419

II.E. RIVER CALLS

**SUMMARY OF COLORADO RIVER CALLS**

**1997 WATER YEAR**

COLORADO RIVER MAINSTEM GOVERNING CALL ABOVE  
SHOSHONE POWER PLANT  
(Districts 36, 37, 50, 51, 52, 53)

<u>Date On</u>	<u>Date Off</u>	<u>Calling Water Right</u>	<u>Decreed Amount</u>	<u>Administrative Number</u>
11/6/1996	12/30/1996	Shoshone Power Plant	1250 cfs	20427.18999

COLORADO RIVER MAINSTEM GOVERNING CALL ABOVE  
CAMEO DIVERSIONS AND BELOWSHOSHONE POWER PLANT  
(Districts 38, 39, 45, 70, 72)

NO CALLS

**III. OFFICE ADMINISTRATION AND WORKLOAD MEASURES**

**III.A. PERSONNEL**

<u>NAME</u>	<u>POSITION/</u>	<u>DISTRICT</u>	<u>FY MONTHS</u>		<u>1997 MILEAGE</u>
			<u>BUDGETED</u>	<u>WORKED</u>	
<b><u>OFFICE STAFF</u></b>					
Orlyn J. Bell	Div. Engr, PE IV		12	12	0
Alan C. Martellaro	Asst Div Engr, PE III		12	12	515
Bob McCabe	Engineer, PE 1		12	12	1,114
John G. Blair	Dam Safety Engr, PE II		12	12	48
Judy T. Sappington	Hydrographer, PE I		12	12	0
Dwight M. Whitehead	Wells Comm, Eng Tech II		12	12	242
Steve Pope	Wells Comm, Eng Tech I	45	12	12	5,205
Don Meyer	Eng Tech I		12	12	324
George H. Wear	Eng Tech I		12	12	1,773
Nancy Hitchcock	Admin Asst III		12	12	0
Cindy Tucker	Admin Asst I		6.9	4.5	0
<b><u>FULL-TIME EMPLOYEES IN THE FIELD</u></b>					
Scott Hummer	Eng Tech II	36	12	12	1,155
Joe Bergquist	Eng Tech II	38	12	12	9,097
Bob Klenda	Eng Tech II	45	12	12	0
Bill Thompson	Eng Tech II	50	12	12	8,663
L. Wayne Wells	Eng Tech II	72	12	12	0
<b><u>PERMANENT PART-TIME EMPLOYEES IN THE FIELD</u></b>					
Bill McEwen	Eng Tech II	37	11	11	1,851
Larry Gepfert	Eng Tech I	38	12	12	9,222
Jim Lemon	Eng Tech I	39	9	9	2,981
Jim Daxton	Eng Tech I	51	8	8	8,164
Frank Schaffner	Eng Tech I	52, 53	8	8	10,065
Don Mackey	Eng Tech I	70, 45	8	8	11,178
Tom Brigham	Eng Tech I	72	10	10	11,362
Alan Comerer	Eng Asst I	72	6	6	6,057
Tom Cox	Eng Asst II	72	9	9	7,795
Ron Greene	Eng Asst I	72	6	6	6,909
<b>Total Worker Months:</b>			273.9	269.5	
<b>Total FTE:</b>			22.825	22.458	
<b>Total Reimbursable Miles Driven:</b>					103,720

**III.B. ACTIVITY SUMMARY**

**1997 CALENDAR YEAR**

ACTIVITY	TOTALS
Professional and Technical Staff (FTE)	9.5
Clerical Staff (FTE)	1.5
Water Commissioner FTE (Full/Part Time)	5.5 / 6.25
Decreed Surface Water Structures	151
Surface Rights Administered (Site Visits) (from time sheets)	13,243
Number of Decreed Wells	68
Consultations With Referee	386
Water Court Appearances (from time sheets)	0
Meetings With Water Users (Public Meetings) (from time sheets)	118
Meetings To Resolve Water Related Disputes	
Contacts to Give Public Assistance on Water Matters ** (from time sheets)	23,265 Total Contacts (7,403 personal contacts) (15,862 phone/letter/FAX)
Dams Visited (from time sheets)	2081
Wells Visited (from time sheets)	364
Surface Structures Administered by Phone (from time sheets)	8

\*\* Contacts - Excludes Office Professional Staff and 3 Office Tech I Positions

