ANNUAL REPORT

1982 - Water Year

Irrigation Division No. 4

RICHARD D. LAMM
Governor

JERIS A. DANIELSON
State Engineer

DIVISION OF WATER RESOURCES
WATER DIVISION IV

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January 17, 1983

Mr. Jeris A. Danielson, P.E.
State Engineer
Division of Water Resources
1313 Sherman Street, Room 818
Denver, CO 80203

Dear Mr. Danielson:

On behalf of the office and field personnel of Irrigation Division Four, I submit herewith the Annual Report for 1982.

Special attention is directed to the Division Four staff who have attended to the various responsibilities of water administration with a high degree of professionalism.

Respectfully submitted,

Ralph V. Kelling
Division Engineer

RVK:jdk

TABLE OF CONTENTS

1982 ANNUAL REPORT

IRRIGATION DIVISION NUMBER FOUR

MONTROSE, COLORADO

I. INTRODUCTORY STATEMENT

Division Four is located in West Central Colorado and its boundaries include the following drainage basins: Gunnison River and its tributaries, San Miguel River, Little Dolores River, Coates Creek and the Dolores River in Montrose and Mesa Counties. Larger communities in the division are Gunnison, Montrose and Delta; and the smaller communities include Ouray, Norwood, Nucla, Naturita, Cedaredge, Hotchkiss, Paonia, Uravan and Crawford. The northern boundary of Water District 42 includes part of Grand Junction, Colorado which is the largest city in western Colorado. The total population for the division is approximately 80,000 people. The Gunnison River basin encompasses the largest portion of Division Four with a drainage area of approximately 7,600 square miles. The San Miguel River basin is the second largest with a drainage area of approximately 1,600 square miles. Several other small drainage basins make up the additional 1,800 square miles. A total of approximately 11,000 square miles (7,040,000 acres) of area make up Division Four. In 1982 388,680 acres were irrigated within the division and agricultural crop patterns are similar to the past seasons.

Major crops are hay, corn, small grains, onions and various types of fruits (peaches, pears, plums, apricots, cherries and apples). Beef cattle, pork and sheep are the primary livestock products. Eleven water

districts are located in Division Four: 28, 40, 41, 42, 59, 60, 61, 62, 63, 68 and 73.

Elevations range from 4,500 feet to over 14,000 feet in the San Juan mountain range. The overall climate is semi-arid with annual precipitation varying from eight to fifteen inches in much of the agricultural area. In 1982 Division Four precipitation was above average. The winter snow season began with regular winter storms and by mid winter, it was evident that the mountain snow areas were in for more than adequate snow-pack. The fall and winter precipitation was average or better, and soil moisture was above average at the beginning of the winter snow-pack season. The report year, January, 1982 through December, 1982, recorded total precipitation at 8.19 inches which is .82 inches below normal for Montrose. The irrigation water supply for 1982 was such that above average moisture was available for all areas of agriculture and types of crops throughout the division. All Division Four reservoirs were near maximum storage and the stream flows, although not excessively high, remained well above normal levels throughout the entire irrigation season. The reservoir storage at the end of the 1982 season is well above average with Blue Mesa recording the maximum storage in late October of 1982.

In 1982 agriculture, stock production and tourism continue to be the main aspects of the Division Four economy. Some logging and lumber production remains, but this has been curtailed greatly because of drastic cutbacks in building throughout western Colorado and other adjacent areas. Some resort housing continues to be built, particularly in the Crested Butte and Telluride ski areas.

All major mining operations within the division with the exception of coal have come to a standstill. Uranium mining in the western part of Division Four is being done only on a skeleton basis necessary to meet Union Carbide's Uravan contracts. The Union Carbide plant at Uravan has been closed or operated under a maintenance force most of 1982. The other major mining areas, Telluride, Ouray area, Lake City, upper Gunnison area have closed all their various facilities to keep only a skeleton maintenance crew employed. Division Four in general could be considered a depressed area with unemployment in some locations well above the national average.

Mineral prospecting is being done on a small scale by individual or small companies; however, seismic exploration continues in search of oil and gas in various areas throughout the division and some drilling has been made for natural gas in various parts of Division Four.

Tourism continues to play a large roll in the division's economy, and 1982 was a good year for all aspects of this industry. The summer tourist business continues to increase each year and visitors from all over the United States pass through the division. The general national economy would not seem to have any effect on the number of visitors. The motels and restaurants were busy throughout the summer season and this continued until after the completion of hunting in early November. Last year's skiing season could be considered good to excellent. Two major ski areas, Telluride and Crested Butte, enjoyed good years with significant growth recorded in both locations. The Telluride ski area has changed ownership and is making plans for expanded development.

Crested Butte ski area has recently been authorized additional National Forest lands for ski runs and they anticipate doubling their facilities in the next few years. One factor that may have some impact on the tourist industry within Division Four will be the beginning of major jet airplane service in and out of Montrose. This began June 1st with Frontier Airlines making two flights daily. In addition to this, the commuter airline Trans Colorado flies several daily flights in and out of Montrose and Gunnison which allows the more popular tourist areas first class travel accommodations.

The following activities continue to effect the division's economy:

1. The production, processing and packaging of all types of agriculture products;

2. Tourist related activities throughout the year continue to grow with only brief periods of non-activity between various seasons;

3. The Bureau of Reclamation activities remain a part of Division Four's economy. The various projects and their operation and maintenance staff have significant impact on the general economy of the division. Contracts for the second phase of the Dallas Project have been awarded. The Granite Construction Company was the low bidder and they anticipate beginning their construction phase by spring of 1983. There appears still to be some uncertainty as to the funding aspect of this phase; however, plans are still being made to begin work this spring. (The total contract bid for the second phase of Dallas Dam was $44,817,430.00.)

4. Moderate population growth throughout most of the division and particularly in the major ski areas continue to expand all types of personal services with steady growth of economy in these areas;

5. Three major areas of employment in the Montrose area involve the Russell Stover Candies, Inc. which employs over 300 people, the Colorado-Ute Electric Association headquarters which employs over 1,000 people (several hundred of these employees are working in the Craig-Hayden area); and the Department of Energy Headquarters of the Upper Colorado River Storage Project which employs approximately 100 people.

These three employers have considerable impact on the entire division due to the various spin-off service needs. The high percentage of the employees of the Department of Energy and Colorado-Ute Electric Association are technical professional employees with a large number of engineers, accountants and attorneys on the various payrolls. The Russell Stover Candy company maintains year-round employment for a large staff and also many seasonal employees for various holiday production schedules. Employees for all three of these organizations travel as much as 50 or 60 miles one way daily in order to work in the Montrose area. The economic impact of these three organizations is a significant part of the economic conditions of Division Four.

6. THE FOLLOWING NEGATIVE FACTORS HAVE HAD SERIOUS IMPACT ON THE VARIOUS AREAS OF DIVISION FOUR'S ECONOMY AND IN MOST INSTANCES, THERE APPEARS TO BE NO TURN-AROUND PREDICTED IN THE NEAR FUTURE:

(a) All types of mining including the coal mining activities in the North Fork Valley, have been reduced or totally terminated. Several of the active coal mines in the Paonia area are operating at minimal levels and at least two of the major mines are in the process of closing up and offering for sale their properties. This perhaps effects 500 or 600 employees and will have significant impact throughout the entire division.

(b) The uranium mining and processing of uranium ore at Union Carbide's Uravan plant has been reduced to a minimal level and there appears to be a well founded rumor that the entire operation will be closed down by mid 1983.

(c) The Colorado-Ute Electric Association has been in a reduction phase for approximately six months with as many as 100 employees being layed off.

The economy is agriculturally dominated and because of this, the major water usage is for irrigation. Farms and ranches are oriented to the regional drainage systems and most water diversions are connected to the adjacent irrigable lands. Most of the large reservoirs are located on major rivers, and long canals and tunnels are required to transport water to the point of use. The Wayne N. Aspinall Storage Unit

reservoirs of the Colorado Storage Project used approximately 2,309,093 acre feet of water in production of electric power in 1982. The hydropower plants of the three reservoirs have a combined capacity of 208,000 kilowatts. These plants are Blue Mesa, Morrow Point and Crystal. The Wayne N. Aspinall Storage Unit of the Upper Colorado River Storage Project is now considered complete and the conditional decrees granted in 1960 have been made absolute through the normal adjudication procedure.

Operating water resource projects within Division Four are the Uncompahgre Project which includes Taylor Park Reservoir and the Gunnison Tunnel, Fruit Growers Reservoir, Fruitland Mesa Project, Paonia Project, Crawford Project and the Bostwick Park Project which includes Silverjack Reservoir.

Blue Mesa, Morrow Point and Crystal Reservoirs of the Wayne Aspinall Storage Unit are part of the Bureau of Reclamation's projects. Additional Bureau of Reclamation projects that are in various study phases are Fruitland Mesa, San Miguel, Upper Gunnison, Grand Mesa Project* and the Uncompahgre Extension. The Dallas Creek Project on the Uncompahgre River is now approximately 50 per cent complete.

A statement by the manager of the Uncompahgre Project is included later in this report (page 74).

*The Grand Mesa Project originally was under the Bureau's direction and is now being pursued by the Grand Mesa Conservancy District with planning funding from the State of Colorado Water Conservation Board.

Land use planning is a subject of continued concern throughout the division. The extent of Division Four's involvement in land use planning has been to act as consultant to the Division of Water Resources planning section. Areas of greatest activity remain similar to those of last year's annual report. Subdivision development in Water Districts 59, 60, 62, 40 and 41 contain the bulk of land development activities. Development continues in the Gunnison-Crested Butte area. The Telluride area and along the San Miguel River are also active development areas. In all locations there is contact between local planning commissions, the Denver planning office and staff members of Irrigation Division Four.

In spite of the depressed coal mining economy of the North Fork of the Gunnison, the North Fork Valley from Cedaredge to Paonia continues to experience land development growth. This is an attractive retirement area with many families moving in. Housing still remains at a premium, and most of the communities along this valley are still in the process of developing and acquiring better water supplies. The general economy of the area has slowed all of these activities somewhat, but planning continues in many locations for better days.

SPECIAL NOTE - At the beginning of 1982, there were seven active large coal mines in the North Fork of the Gunnison. This year they will produce less than two million tons of coal. The majority of this coal is being used in power production or steel production at the U. S. Steel plant in Geneva, Utah. One major mining operation began this year with the mining of coal by ARCO. This company produced about 110,000 tons of coal which is approximately ten per cent of their capacity at this time.

Coal production does not require great quantities of water; however, they have a need for a continuous supply and, for the most part, these comapnies have marginal water rights. Two companies now have a reservoir augmentation supply plan and other applications are pending before the Division Four Water Court. The coal companies are purchasing ranches, orchards and some separate water rights in their expanding operations.

Land ownership by county is as follows:

*OWNERSHIP IN ACRES

County	Private	Federal	State	County & Municipal
Delta	759,647	863,995	3,800	2,737
Montrose	508,865	1,241,684	170,345	2,822
Mesa	553,934	1,561,735	414	4,237
Ouray	154,453	167,485	3,315	147
San Miguel	330,399	474,882	16,479	600
Gunnison	420,035	1,637,026	13,388	1,268
Hinsdale	28,999	645,178	9,377	765
Saguache	581,650	1,320,622	109,708	180

*Information derived from Forest Service, B.L.M., County Assessor, and Extension Service.

NOTE: Not all of this land is located within the boundaries of Irrigation Division Four.

II. PERSONNEL

During 1982 personnel actions in Division Four did not involve any changes. All the staff with one exception that began the irrigation season completed their assigned responsibilities.

Division Four was saddened by the unexpected death of James Carr, Water Commissioner B serving in Water District 40 and in the general Hotchkiss, Colorado area. Commissioner Carr had been employed by the Division of Water Resources Division Four for twenty years and was considered a friend of all in his area of responsibility. Jamie will be missed by all his friends and co-workers.

At the writing of this report, an examination has been held relative to the replacement of Jamie's position; however, no appointment has been made.

In this annual report it is important ot recognize the outstanding staff of Division Four. Without their varied abilities, the responsibilities of Irrigation Division Four would not be so ably attended. The following is a list of personnel in the Division for the year 1982. This list also includes a breakdown of each individual position, responsible district, months actually worked and months budgeted, plus the total mileage driven.

PERSONNEL

Name	Position	District	Months Worked/ Budgeted Budgeted	Worked	Mileage	
Richard L. Belden	WCC	42, 63, 73	Annual		15,591	
Willard N. Bull	WCA	40	6½ mos.	7¼ mos.	4,352	
Lyman D. Campbell	WCC	60	11 mos.	11 mos.	9,501	
*James E. Carr	WCA	40	7 mos.	4 mos.	2,214	
Lloyd E. Connell	WCA	40	6 mos.	6 3/4 mos.	6,690	
Charles G. David	Hydro	Staff	Annual		11,379	(State Vehicle)
Richard L. Drexel	SRWC	40	Annual		6,087	
Robert E. Drexel	WCB	59	6½ mos.	6½ mos.	6,183	
L. Jean Kurtz	S	Staff	Annual		--	
John S. Garber	WCB	28	7½ mos.	7 3/4 mos.	7,892	
Mack A. Gorrod	WCB	40	7 mos.	7¼ mos.	3,894	
James T. Hanrahan	WCA	40	6 mos.	6¼ mos.	3,625	
Edwin S. Hofmann	WCB	59,62	Annual		5,494	
C. Crandall Howard	WCB	41	9 mos.	10 mos.	8,856	
Ralph V. Kelling	SWRE	Staff	Annual		4,395	
Thomas A. Kelly	SRWRE	Staff	Annual		10,894	
Dwayne C. Mansker	WCB	1042	Annual		1,825	
John L. McHugh	WCB	40	7 mos.	8 mos.	6,679	
James A. Miller	WCA	40	6¼ mos.	8 mos.	7,418	
H. Roger Noble	WCB	68	Annual		4,788	
Clinton L. Oliver	WCB	61	7½ mos.	7 mos.	3,973	
Logan Gregg Scott	WCA	40	6 mos.	6¼ mos.	3,201	

*James E. Carr, deceased, July 19, 1982.

PERSONNEL

Name	Position	District	Months Worked/ Budgeted Budgeted	Worked	Mileage
Robert H. Starr	WCC	40	Annual		7,992
Charles E. Stein	WCA	40	6 mos.	5 3/4 mos.	5,024
Stephen Tuck	WCB	40	7 mos.	7¼ mos.	6,882
Lester E. Whiting	WCB	42	7½ mos.	7 mos.	7,770
Wayne Wiseman	WCA	40	6 mos.	6 3/4 mos.	3,425
Charley Woolley	WCB	40	7 mos.	7¼ mos.	5,244
David E. Woolley	WCA	40	7 mos.	6¼ mos.	6,131
TOTAL					166,020

State Vehicle Mileage (#5457) 7,689

State Vehicle Mileage (#5764) 11,379

State Vehicle Mileage (#6193) 4,766

This report is for the period January 1, 1982 through December 31, 1982.

WATER COMMISSIONERS' ANNUAL MILEAGE REVIEW

Year	Total Annual Mileage
1974	189,865
1975	194,997
1976	181,374
1977	209,517
1978	207,437
1979	193,271
1980	176,762
1981	169,684
1982	150,731

Note: Due to serious budget restraints, Division Four's annual mileage has been considerably reduced and continues to be eroded from peak mileage of the 1977-78-79 years. This should not be construed as a trend and need for less mileage, but an indication of insufficient funding in order that the field commissioner properly visits all of his assigned locations.

III. WATER SUPPLY

A. Snow-Pack

Water supply forecasts for the Gunnison and San Miguel watersheds were reported to be average or above. As of May first, the Gunnison River Basin contained approximately 130 per cent of average snow-pack. Precipitation for the entire season was above average. Reservoir storage was above average at the beginning of the irrigation season and because of above average precipitation throughout the 1981 irrigation season, reservoir storage levels remained average or considerably above average throughout the season. Peak storage was near the average long term levels, and sufficient storage water was available for all irrigation uses throughout the irrigation season. High water was not forecast for the 1982 runoff season and there were no locations of flooding due to high water during the runoff season. Stream flows generally were above average and continued well above average throughout the entire irrigation season.

There were no weather modification programs or activities during the 1981-82 winter snow season. It is not expected that weather modification programs will be a part of the weather water supply program for some time, perhaps until further development is made in this type of activity. All snow course readings in Division Four indicated above average snow-packs for the 1981-82 snow season. Copies of the May, 1982 Snow Survey are found at the end of this report.

*SUMMARY OF SNOW MEASUREMENT - May 1, 1982

Basin or Watershed	Number of Courses Averaged	This year's snow water as per cent of: Last Year	Average
Gunnison	13	562	754
Surface Creek	3	287	133
Uncompahgre	3	285	124

*STREAMFLOW FORECASTS (1000 A.F. - Apr-Sep):

Forecast Point	Forecast	% of Avg.	1963-77 Average
Gunnison River inflow to Blue Mesa	1,020	135	754
Gunnison River near Grand Junction	1,500	130	1,150
Surface Creek near Cedaredge	20	132	15.2
Uncompahgre River at Colona	170	132	129
North Fork of the Gunnison	330	126	262

Soil Moisture - May 1, 1982

Rated as Good-excellent

*U.S.D.A. - Water Supply Outlook

B. Precipitation - Summer

The 1982 irrigation season began with much above average precipitation throughout all of Division Four. The mountain snow ranges experienced as much as 135 per cent of average and the lower valleys in Division Four recorded above or better precipitation. During the summer months, there were many summer rains throughout the entire division which helped to keep all the major streams and tributaries running above normal and helped to reduce the demands for reservoir storage water. Reservoir storage water in some instances continued to increase throughout the entire irrigation season, particularly the Blue Mesa Reservoir which is not considered an irrigation reservoir. However, its peak storage was recorded in late October. The summer precipitation was very helpful to high mountain ranges and the range grass lands were the best in the memory of most stockmen. The summer precipitation also was very helpful to most all types of agriculture and produced a record high crop throughout the entire division. This welcome summer moisture did have some negative effects. Harvesting of haylands in the higher elevations was drawn out. In some cases they delayed and carried on for as much as six weeks beyond the normal time for cutting and stacking.

Reservoir storage carry-over for Division Four in 1983 is much above average in all locations. Many reservoirs are at all-time high elevations and will require some additional winter monitoring in order to assure safe storage levels during this winter season. Some of the Bureau of Reclamation reservoirs, Silverjack Reservoir was required to release a near full reservoir of storage water in late October in order to have sufficient storage capacity for next year's anticipated runoff season. The 1982-83

winter season has begun with several good general snow storms. It has been reported that as much as ten feet of snow has fallen on Grand Mesa with similar type of storms in many of the locations throughout Division Four. Average or below average precipitation for the remainder of the 1982-83 snow-pack season should insure a favorable water supply for the 1983 irrigation season.

There was no hail suppression work activities in Division Four during the 1982 season.

*CLIMATOLOGICAL DATA 1981-82

County	Avg. Annual Temp., F°	Depar-ture	Total Precip-itation, In.	Depar-ture
Delta	53.8	3.2	7.47	- .42
Mesa	55.2	2.5	17.70	1.43
Montrose	51.7	2.6	9.26	.25
Ouray	45.3	-	26.96	1.99
San Miguel	42.7	2.9	26.28	2.87
Gunnison	42.0	4.3	11.60	.36
Hinsdale	41.6	-	17.96	-
Saguache	42.3	.5	9.06	.57

*Climatological Data Annual Summary - 1982

C. Floods

Flows in all areas of Division Four were expected to be normal or above and only minor flooding was anticipated throughout the division. Most areas of Division Four experienced moderate to high flows, but there was no flooding due to the spring runoff. Again, this was due in part to the weather patterns with several days of warm weather and then several days of fairly cool, if not cold, weather throughout the majority of the spring runoff time. Some locations experienced local flooding conditions during late summer due to local thunder storms. Most of the damage occurred again in Ouray and this was due to flash thunder storms which filled the drainage system in the town of Ouray with debris and rock and gravel. A number of the bridges were again destroyed and considerable damage was reported throughout the city of Ouray. This seems to be a nearly annual occurrence and some planning is now being made as to steps to alleviate this particular serious problem. Heavy rains did cause several massive earth slides in Water District 40. One slide near Hotchkiss moved a complete section of the Denver & Rio Grande Railroad siding tracks and repairs of this particular damage have not been made at this time. Another location where damage occurred due to the movement of large mass of land was a portion of the land above the Morton Ditch on Dry Creek. This is east and slightly south of Cedaredge. Extensive damage was caused to the diversion structure and the ditch for several hundred yards. In places the ditch was displaced as much as eleven feet in elevation. The Soil Conservation Service is in the process of assisting the ditch owners in repairs.

The following are selected peak flows from various gaging stations located in Irrigation Division Four:

Stream	Amount cfs	Date	Amount cfs	Date
Anthracite Ck. nr Somerset	1,090	5/3/81	1,260	5/5/82
N.F. Gunnison R. nr Somerset	2,110	5/3/81	No Record	
Gunnison R. nr Gunnison	1,680	6/8/81	2,900	6/18/82
Gunnison R. at Delta	3,260	5/3/81	5,820	5/5/82
Gunnison R. nr Grd. Jct.	4,140	5/4/81	8,460	5/5/82
Uncompahgre R. at Colona	1,140	6/11/81	2,300	8/24/82
San Miguel R. at Naturita	1,130	6/10/81	2,310	5/5/82

D. Water Budget

Average annual flow on the Gunnison River at Grand Junction is 1,825,000 acre feet. Throughout Division Four all types of direct flow diversions total 4,910,963 acre feet with approximately 3,934 acre feet being diverted and used in other drainages. The beneficial use of the water resources in Division Four would exceed more than three times the total supply. The two major uses and reuses are for agriculture and power production. The Gunnison River contributes approximately 44.5 per cent of the total Colorado River discharges into Utah.

All available Division Four full-time water officials are involved in an irrigation acreage mapping program to begin to develop the necessary data so that a meaningful water budget and consumptive use study can be calculated. It is anticipated that this mapping and preliminary work will take several winter seasons. At the writing of this report, the budget limitations have considerable influence on when this program might be completed. It is estimated at this particular point that perhaps 25 per cent of the total mapping is complete. The first year's experience was

well received by the employees involved and the progress made was better than anticipated for such a large undertaking. Chuck David, Water Resource Engineer C is overseeing the day-by-day details of this work.

E. Underground Water

There is limited information relative to the underground water supply in Division Four. Ground water studies and literature are limited to a minimum number of bulletins and reports. A few deep water wells exist; however, the bulk of the ground water activity is concerned with domestic and household-use-only wells. Potentially, all formations may prove productive with the shale section having minimal water content and sands, especially of the Dakota and Entrada formations, capable of containing large volumes of water. A number of water wells in the Grand Junction area produce from the Morrison sands. During 1979, the U.S.G.S. conducted studies of potential water bearing formations in areas of Grand Mesa. Limited testings were said to indicate considerable amounts of water for municipal use during times of shortage, and with the possibility of the use of this water, lower valley water users have expressed concern on how such pumping would effect their surface and storage water rights. This office is unaware of an official report concerning these activities.

Registered wells in Division Four are estimated to be from the best information available, as follows:

*Type of Wells	Number of Wells
0 - Household Only	357
1 - Domestic	2,681
2 - Livestock	140
3 - Domestic & Stock	168
4 - Commercial	123
5 - Industrial	16
6 - Irrigation	85
7 - Stock & Irrigation	7
8 - Municipal	33
9 - Other	10
Total Registered Wells	3,620

*Tabulated print-out of October 28, 1982

F. Transmountain and Transbasin Diversions - 1982

Transmountain Diversions:

Name	Source	Recipient and/ or Claimant	Amount A.F.
Red Mountain Ditch	Mineral Creek	Ouray Ditch Co. Montrose, Colorado	No Diversion
Carbon Lake Ditch	Mineral Creek	Pinon Ditch Co. Colona, Colorado	414.
St. John Ditch	E. Fk. Animas River	Charles, Gunn & Worley % W. Worley Olathe, Colorado	No Diversion Structure Not Usable
Mineral Pt. Ditch	Burrows Creek, tr. N. Fk. Animas River	W. Gibbs Ouray, Colorado	No Diversion Structure Not Usable
Larkspur Ditch	Tr. Tomichi Creek Marshall Creek	Catlin Canal Co.	183.
Tabor	Tr. Cebolla Cr.	Colo. Div. of Wildlife Monte Vista, Colorado	782.
Tarbell	Cochetopa	Cochetopa Land & Wtr.Co Saguache, Colorado	361.
Divide Cr. Highline Feeder Ditch	Clear Fk. Muddy Cr.	F. M. Starbuck, Mgr. Silt, Colorado	2,608.
Leon Lake	Leon Creek	Floyd McPherson Cedaredge, Colorado	1,604.

Transbasin Diversions:

Leopard Cr. Ditch	Leopard Creek	Harry McClure (irr.) Ridgway, Colorado	1,373.
N. Fk. of Paxton D.	Cottonwood and Horsefly Creeks	William Hofmann Montrose, Colorado	No Diversion
Cimarron Feeder of the Garnet Ditch	W. Fk. of Cimarron	Unc. Valley Water Users Association Montrose, Colorado	3,070.
Gunnison Tunnel	Gunnison River	Montrose, Colorado	267,925.

Transbasin Diversions - continued

Name	Source	Recipient and/ or Claimant	Amount A.F.
Head & Ferrier	Currecanti Creek	H. Head & Ferrier	168.
Lake Brennan	Anthracite, a/k/a Lake Irwin	Town of Crested Butte, Colorado	180.
Meek Tunnel	Crystal Creek	Carton Meek Maher, Colorado	350.
Mesa Creek Ditch	Mesa Creek	Carton Meek Maher, Colorado	174.

G. Annual Diversion and Storage Records

The 1982 season completed the eighth year in which Division Four participated in the Computer Data Bank program in recording and summarizing annual diversion records. At this time, the computer diversion records for 1975 through 1981 are complete and have been signed and are on file at the State Engineer's office, the Division Four office and the various Water Commissioners' home residences. In general the quality of the records is very good.

The 1982 records were keypunched by the computer center at Valley Federal Savings and Loan Association in Grand Junction, Colorado. The cost again this year was 13.3 cents per card and this cost included keypunching, verifying and extensive editing and computation. This work greatly assisted in helping the field water commissioner in the compilation and processing of his field records. Monthly totals were computed, days used, visits made, acre feet diverted and an analysis of various types of water diverted was also included.

These various computer edits have been a great help in the preparation of the 1982 annual report and diversion records.

It is Division Four's feeling that the computerized diversion record-keeping is of great assistance to the field commissioner in the overall performance of his responsibilities. We feel that local control over the basic data is important and are very pleased to be able to have a local organization to work with in the generating of the punch cards for our Denver A.D.P. Section.

In most districts of Division Four the commissioner continues to use the field book for the recording of daily visits and diversion records. These field books are easily handled and afford an opportunity to have data to check in case of problems arising from diversion records. These field books are aslo helpful when special requests are made prior to the final computation of the yearly diversion records.

H. Reservoir Storage

Most all irrigation reservoirs in Irrigation Division Four contained average or above average carry-over storage for the beginning of the 1981-82 storage season (November 1, 1981). Blue Mesa Reservoir of the Bureau of Reclamation Wayne N. Aspinall Storage Project released heavy discharges during most of the winter season of 1981-82. These releases were to fill power demands and the reservoir was brought down to a storage level of approximately 212,730 acre feet. Storage in 1982 for Blue Mesa Reservoir continued to gain throughout the entire filling season and well on into the fall of 1982. On November 1, 1982 the storage level of Blue Mesa Reservoir was 723,600 acre feet. Power demands during the winter months continue to create great demands upon the stored water in the Blue Mesa, Crystal and Morrow Point Reservoirs of the Wayne N. Aspinall Storage Project.

Because of the adequate or above average snow-pack throughout Division Four, almost all reservoirs in the division were able to completely fill their storage rights. Calls were not posed upon the storage drainage systems and the reservoirs were able to fill to the maximum available runoff water. Not all available reservoir water was used during the irrigation season and in many instances, reservoirs were closed with the

highest carry-over storage level in many years, if not of record. These reservoirs are going into the winter months with high storage levels and extra inspections will be needed during the winter in order to monitor and insure the safety of these various structures. Few reservoirs experienced spilling conditions during the 1982 irrigation season; however, this was due to regulation through the outlet works and careful attention to the conditions in order that the excess water might be released through outlet systems rather than down spillway channels.

SPECIAL NOTE

The storage and diversion data presented in this report have been compiled from the water officials' field book notes, diaries and special edit listing of keypunch cards for 1982. It is important to point out that in order to have accurate data for the 1982 irrigation season Annual Report, it is necessary that various sources of data be utilized. Even with these sources, all of the diversion and storage records noted in this report should be considered preliminary and subject to correction.

Listed below is a tabulation of storage in the Division for 1982:

Water District	Name of Reservoir	Amt.,A.F. 11-1-81	Amt.,A.F. Start of Irr.Season	Amt.,A.F. 10-31-82
28	Hot Springs Reservoir	119.80	603.00	254.40
28	McDonough Reservoir #1	654.80	805.20	805.20
28	McDonough Reservoir #2	201.80	741.60	741.60
28	Needle Creek Reservoir	340.00	641.90	412.90
28	Upper Cochetopa Reservoir	243.30	312.84	395.20
28	Vouga Reservoir	.00	810.00	565.00
40	Alexander Lake Reservoir	73.00	145.00	133.00
40	Arch Slough Reservoir	.00	.00	.00
40	Ault Reservoir	.00	116.00	.00
40	Bailey Reservoir	168.00	423.00	110.00
40	Bald Mountain Reservoir	.00	88.80	.00
40	Barren Lake Reservoir	152.10	800.00	718.70
40	Basin #1 Reservoir	.00	103.60	.00
40	Basin #2 Reservoir	.00	24.00	.00
40	Battlement #1 Reservoir	79.50	79.50	79.50
40	Battlement #2 Reservoir	913.90	913.90	913.90
40	Baxter Reservoir	318.00	318.00	318.00
40	Beaver Dam Res. (Esclanate)	.00	396.50	.00
40	Beaver Res. (Minnesota Creek)	36.70	1,287.10	41.40
40	Bonita Reservoir	82.00	285.80	171.80
40	Bottle Stomp Reservoir	No information		
40	Boulder Lake #1 Reservoir	18.00	22.00	22.00

Division tabulation of storage - continued

Water District	Name of Reservoir	Amt.,A.F. 11-1-81	Amt., A.F. Start of Irr. Season	Amt.,A.F. 10-31-82
40	Brockman #1 Reservoir	.00	16.00	.00
40	Brockman #2 Reservoir	.00	41.00	.00
40	Bruce Park Reservoir	.00	700.00	.00
40	Bull Finch #1 Reservoir	2.00	72.00	21.60
40	Bull Finch #2 Reservoir	.00	40.00	1.75
40	Cabin Lake Reservoir	.00	36.60	17.90
40	Calumet Reservoir	.00	16.80	.00
40	Carbonate Camp Reservoir #3	.00	6.50	.00
40	Carbonate Camp Reservoir #6	1.70	112.70	95.70
40	Carbonate Camp Reservoir #7	1.70	107.60	64.90
40	Carl Smith Reservoir	776.00	838.00	569.00
40	Cedar Mesa Reservoir	257.80	925.80	479.50
40	Clark Reservoir	.00	39.00	39.00
40	Coalby Horse Park Reservoir	182.80	500.60	122.30
40	Cole #1 Reservoir	.00	26.70	.00
40	Cole #2 Reservoir	.00	52.40	.00
40	Cole #3 Reservoir (Cherry Lane)	.00	54.00	.00
40	Cole #4 Reservoir	.00	39.50	.00
40	Cole #5 Reservoir	.00	116.80	.00
40	Columbine #1 Res. (Reynolds)	.00	176.00	.00
40	Crawford Reservoir	2,506.00	13,972.00	8,271.00
40	Cyphers Reservoir	21.80	21.80	21.80

Division tabulation of storage - continued

Water District	Name of Reservoir	Amt.,A.F. 11-1-81	Amt., A.F. Start of Irr. Season	Amt.,A.F. 10-31-82
40	Daniels Sl. Res. (Reed)	54.90	228.00	180.30
40	Davenport Reservoir	20.00	20.00	.00
40	Deep Slough Reservoir	119.70	498.40	212.00
40	Deep Ward Reservoir	259.40	1,102.00	1,043.00
40	Delta City #1 Reservoir	14.00	14.00	14.00
40	Delta Control Reservoir	24.00	34.00	34.00
40	Deserted Park Reservoir	.00	35.90	11.10
40	Dog Fish Lake Reservoir	.00	243.00	.00
40	Don Meek #1 Reservoir	.00	45.00	.00
40	Donnelly Slough Reservoir	131.80	276.90	165.20
40	Doughty #1 Res. (Chipmunk)	.00	48.20	.00
40	Doughty #2 Res. (Sliderock)	.00	19.10	.00
40	Dowdy Reservoir	.00	264.00	.00
40	Dreyfus Reservoir	.00	44.00	20.10
40	Dugger Reservoir	.00	212.00	117.00
40	East Beckwith #1 Reservoir	.00	360.00	156.00
40	Eggleston Lake Reservoir	662.50	2,645.00	2,350.00
40	Elk Park Reservoir	96.80	96.80	96.80
40	Elk Wallows Reservoir	168.00	218.00	218.00
40	Ella Reservoir	.00	109.00	.00
40	Ellington & Cook Reservoir	.00	25.00	.00
40	Eureka Reservoir #2	.00	53.40	15.00

Division tabulation of storage - continued

Water District	Name of Reservoir	Amt.,A.F. 11-1-81	Amt., A.F. Start of Irr. Season	Amt.,A.F. 10-31-82
40	Fairmont Reservoir	.00	78.00	.00
40	Fairmount Park Reservoir	.00	30.00	30.00
40	Fish Lake Reservoir	.00	75.80	34.00
40	Fisher Reservoir	.00	10.00	.00
40	Forrest Res. (Finney)	.00	71.60	.00
40	Fruitgrowers Res.	1,249.80	4,312.40	3,503.90
40	G & M Volk Fish Pond #1	5.90	5.90	5.90
40	Goodenough Reservoir (Kiser)	73.90	148.80	89.70
40	Goodenough #2 Res. (Leroux)	116.00	684.00	684.00
40	Granby #6 Reservoir	.00	45.90	.00
40	Granby #7 Reservoir	51.20	76.10	76.10
40	Granby #8 Reservoir	.00	13.30	13.30
40	Granby #9 Reservoir	.00	71.90	71.90
40	Granby #11 Reservoir	39.20	703.00	578.90
40	Granby #12 Reservoir	212.00	566.00	498.90
40	Gray Reservoir	24.00	423.00	56.00
40	Green Mountain Dam Reservoir	9.00	9.00	9.00
40	Greenwood Reservoir	39.40	66.00	5.20
40	Gregg #1 Reservoir	.00	5.00	.00
40	Gregg #2 Reservoir	.00	45.00	.00
40	Hale Reservoir	.00	42.20	.00
40	Hanson #2 Reservoir	.00	225.00	.00
40	Holly Terror Reservoir	.00	146.00	.00
40	Hotel Lake Reservoir	177.40	548.00	435.50

Division tabulation of storage - continued

Water District	Name of Reservoir	Amt.,A.F. 11-1-81	Amt., A.F. Start of Irr. Season	Amt.,A.F. 10-31-82
40	Howard Lake Reservoir	4.60	61.40	27.00
40	Hunt Reservoir	No Information		
40	Island Lake Reservoir	380.70	1,677.90	1,250.80
40	Kehmeier Reservoir	51.20	319.50	177.30
40	Kiser Slough Reservoir	24.70	512.00	290.20
40	Knox Reservoir	88.50	241.20	137.70
40	Kennicott Slough Reservoir	10.90	526.00	272.30
40	Lake Brennard Reservoir	367.00	367.00	367.00
40	Leon Lake Reservoir	758.40	1,766.70	1,236.80
40	Leon Park Reservoir	.00	172.00	.00
40	Lilly Pad Res. (Young Cr.)	.00	39.30	2.20
40	Little Gem Reservoir	104.80	219.00	117.50
40	Little Giant #1 Reservoir	.00	31.20	1.50
40	Little Giant #2 Reservoir	.00	5.90	.00
40	Little Grouse Reservoir	23.50	52.50	35.10
40	Lone Cabin Reservoir	.00	150.00	.00
40	Lucky Find Reservoir	.00	66.00	.00
40	Marcott Park Reservoir	.00	500.00	.00
40	McKoon Reservoir (Blanchard)	1.90	148.00	120.70
40	Meek Reservoir	.00	30.00	.00
40	Military Reservoir	48.80	236.60	158.90

Division tabulation of storage - continued

Water District	Name of Reservoir	Amt.,A.F. 11-1-81	Amt., A.F. Start of Irr. Season	Amt.,A.F. 10-31-82
40	Miller Reservoir	.00	20.00	.00
40	Monument Reservoir	.00	442.00	.00
40	Morris #2 Reservoir	16.00	16.00	16.00
40	New Pond Reservoir	.00	2.20	.00
40	Onion Valley Reservoir	.00	4,416.00	430.00
40	Overland #1 Reservoir	.00	5,608.00	.00
40	Owens Reservoir	.00	92.00	.00
40	Paonia Reservoir	2,037.00	18,468.00	6,319.00
40	Park Reservoir	413.50	3,383.40	1,929.80
40	Patterson #1 Reservoir	.00	78.00	.00
40	Patterson #2 Reservoir	.00	151.00	.00
40	P.C. & G. #1 Res. (Muskrat)	.00	19.90	3.90
40	Pedro Reservoir	88.40	194.90	166.40
40	Pine Reservoir	.00	.00	.00
40	Pine Cone Reservoir	.00	37.00	.00
40	Pitcarin Reservoir	.00	100.00	10.00
40	Poison Springs Reservoir	Structure inoperable		
40	Porter #1 Reservoir	133.10	201.00	201.00
40	Porter #4 Reservoir	38.00	38.00	38.00
40	Prebble Reservoir	41.50	195.00	162.30
40	Rex Reservoir	.00	.00	.00

Division tabulation of storage - continued

Water District	Name of Reservoir	Amt.,A.F. 11-1-81	Amt., A.F. Start of Irr. Season	Amt.,A.F. 10-31-82
40	Reynolds Res. (Reynolds Cr.)	.00	100.00	.00
40	Rim Rock Lake Reservoir	64.00	107.00	37.00
40	Rockland Reservoir	.90	33.00	33.00
40	Rockwell Reservoir	.00	118.50	.00
40	Roeber #2 Reservoir	.00	44.00	.00
40	Round Lake Reservoir	.00	19.50	.00
40	Ryan Reservoir	11.20	43.00	15.40
40	Sackett Reservoir	52.10	108.00	108.00
40	Safety #1 & #2 Reservoir	.00	16.00	1.20
40	Scotland Peak Reservoir	.00	58.80	27.70
40	Sheep Lake Reservoir	88.00	153.00	114.00
40	Skim Milk Reservoir	.00	90.00	48.50
40	Spatofore Reservoir	.00	100.00	.00
40	Stell Reservoir	.00	62.40	.00
40	Todd Reservoir	.00	150.00	.00
40	Tomahawk Reservoir	.00	87.30	.00
40	Trickle Reservoir	.00	29.00	.00
40	Trio Reservoir	79.00	164.30	118.80
40	Twin Lake Reservoir #1	.00	106.90	.00
40	Twin Lake Reservoir #2	.00	135.60	.00
40	Tyler Reservoir	.00	169.00	.00

Division tabulation of storage - continued

Water District	Name of Reservoir	Amt.,A.F. 11-1-81	Amt., A.F. Start of Irr. Season	Amt.,A.F. 10-31-82
40	Upper Hotel Lake Reservoir	.00	110.50	110.50
40	Van Den Berg #1 Reservoir	5.60	5.60	5.60
40	Vela Reservoir	225.00	437.00	437.00
40	Ward Creek Reservoir	94.70	284.40	225.80
40	Wash Tub Reservoir	.00	25.00	.00
40	Water Bug Reservoir	.00	78.00	.00
40	Weir & Johnson #2 Reservoir	269.00	501.30	544.90
40	Weir Park Reservoir	.00	40.70	.00
40	West #1 Reservoir	.00	450.00	.00
40	Williams Creek Reservoir	34.00	100.00	37.00
40	Willow Reservoir	.00	104.00	.00
40	Womack #1 Reservoir	25.20	207.00	35.30
40	Womack #2 Reservoir & #3	28.60	156.30	54.00
40	Womack #5 Reservoir	.00	22.90	1.50
40	Young Creek Reservoir #1 & #2	162.20	644.80	561.00
40	Young Creek Reservoir #3	101.20	193.00	113.30
40	Y & S Reservoir	54.30	189.10	126.40
41	Buckhorn Reservoir	6.70	247.00	182.00
41	Fairview Reservoir	341.00	358.00	400.00
41	Garnet Mesa (Sweitzer)	1,332.00	1,372.00	1,332.00
41	Wenger #1 Reservoir	.00	.00	.00
41	Mock Reservoir	.00	73.00	.00

Division tabulation of storage - continued

Water District	Name of Reservoir	Amt.,A.F. 11-1-81	Amt., A.F. Start of Irr. Season	Amt.,A.F. 10-31-82
42	Anderson #1 Reservoir	285.00	466.00	298.00
42	Anderson #2 Reservoir	330.00	568.00	400.00
42	Anderson #6 Reservoir	.00	100.00	65.00
42	Bolen Reservoir	218.00	535.00	315.00
42	Bolen Anderson Reservoir	96.00	293.00	199.00
42	Carson Reservoir	637.00	637.00	637.00
42	Deep Creek Reservoir #2	.00	350.00	80.00
42	Dry Creek Res. (Chambers Res.)	.00	230.00	.00
42	Flowing Park Reservoir	50.00	782.00	200.00
42	Fruita Reservoir #1	30.00	No Record	No Record
42	Fruita Reservoir #2	.00	.00	.00
42	Fruita Reservoir #3	No Record	No Record	No Record
42	Grand Mesa #1 Reservoir	6.00	348.00	75.00
42	Grand Mesa #6 Reservoir	.00	230.00	.00
42	Grand Mesa #8 Reservoir	.00	378.00	45.00
42	Grand Mesa #9 Reservoir	.00	153.00	.00
42	Hollenbeck #1 Reservoir	640.00	675.00	645.00
42	Hollenbeck #2 Reservoir	240.00	481.00	215.00
42	Juniata Reservoir	5,549.00	6,311.00	5,550.00
42	Mirror Lake	150.00	190.00	140.00
42	Scales No. 1	.00	130.00	.00
42	Scales No. 3	.00	101.00	.00
59	Cunningham Reservoir	.00	1.00	.00

Division tabulation of storage - continued

Water District	Name of Reservoir	Amt.,A.F. 11-1-81	Amt., A.F. Start of Irr. Season	Amt.,A.F. 10-31- 82
59	Ferris Creek Reservoir	.00	.00	.00
59	Kapushion Reservoir	.00	.00	.00
59	Meridian Lake	320.00	400.00	390.00
59	Rainbow Lake	.00	120.00	120.00
59	Spring Creek	675.00	1,100.00	780.00
59	Taylor Reservoir	49,510.00	58,380.00	85,370.00
60	Alexander Reservoir	.00	6.00	.00
60	Gurley Reservoir	2,983.00	4,103.00	5,112.00
60	Lilylands Reservoir	54.19	240.00	88.00
60	Lone Cone Reservoir	760.00	1,400.00	900.00
60	Miramonte Reservoir	5,792.00	5,792.00	5,792.00
60	Mosca Livestock Reservoir #2	.00	10.00	.00
60	Mosca Livestock Reservoir #3	.00	4.00	.00
60	Palmer Reservoir	.00	2.00	.00
60	Palmer Reservoir #2	.00	2.00	.00
60	Paxton Reservoir	423.00	898.00	643.00
60	Trout Lake Reservoir	3,111.00	2,476.00	3,382.00
61	Buckeye Reservoir	350.00	1,700.00	700.00
62	Blue Mesa	356,990.00	739,100.00	723,600.00
62	Cerro Reservoir	.00	.00	250.00
62	Crystal Reservoir	13,995.00	17,580.00	16,910.00
62	Fish Creek #1	100.00	125.00	100.00

Division tabulation of storage - continued

Water District	Name of Reservoir	Amt.,A.F. 11-1-81	Amt., A.F. Start of Irr. Season	Amt.,A.F. 10-31-82
62	Fish Creek #2	150.00	500.00	100.00
62	Lake San Cristobal	9,786.00	9,786.00	9,786.00
62	Morrow Point	113,120.00	115,200.00	114,000.00
62	Silverjack Reservoir	4,370.00	13,600.00	5,530.00
63	Big Creek Reservoir	No Record	No Record	No Record
63	Burg Reservoir	.00	108.00	.00
63	Casement Reservoir	.00	112.00	.00
63	Casto Reservoir	.00	120.00	.00
63	Craig Reservoir	No Record	No Record	No Record
68	Carrol Brown	0	35.00	3.00
68	Elephant Reservoir	1.00	25.00	1.00
68	Jacques Reservoir	45.00	45.00	45.00
68	Victor Reservoir	3.00	3.00	3.00
68	Full Moon	40.00	40.00	40.00

IV. AGRICULTURE

Because of the great diversity of agricultural lands throughout the division, almost every type of farming enterprise is found within Division Four. Various crops range from high mountain hay meadows and range lands to high productive low valley grain farms. Overall crop production for the 1982 season can be estimated to be average or better. The water supply was adequate and average or better quality crops were grown. The Uncompahgre Project which irrigates approximately 80,000 acres had sufficient water and was able to meet 100 per cent of demand. This project is very often limited in diversion by the capacity of its various canals and laterals. Nearly all reservoirs supplied somewhat less than their historic averages; however, the agricultural lands dependent upon this storage produced normal or better production. This was due to the above average summer precipitation and the demand for storage water was less than normal. In some instances reservoirs were deliberately released at the conclusion of the irrigation season in order to have sufficient storage available for 1983 spring runoff.

The upper Gunnison and Uncompahgre Valley hay producing lands along with the San Miguel Basin hay lands all experienced crop yields better than 1981 and somewhat above the long-term averages for these areas. Hay prices are similar to 1981 and the demand for Division Four hay is not established at this time. Several factors contribute to the fluctuating demand for Division Four hay. These include considerable fluctuation in cattle herds in adjacent states, the fluctuation of dairy herds in southern states, especially Arizona, New Mexico and the economy of the overall farming industry and especially cattle ranches throughout the area. This particularly involves the high interest rates and low market prices for

cattle products. One additional factor contributes to the lack of demand for Division Four hay. This factor concerns the above average fall range pasture that was available to the cattle herds throughout southwest Colorado.

Small grains grown along the lower Gunnison valley recorded above average yields and other support crops such as onions and beans had average or better production. (Prices received by the farmer for these crops were much below long-term average.) The experimental lettuce crop in the Olathe area was continued this season. A lettuce processing plant was set up at Olathe; however, the initial response would indicate that this again has not proven to be a profitable substitute for the removal of sugar beets from the agricultural economy of the Uncompahgre Valley and the lower Gunnison Valley lands. Prices paid for various commodities produced in Division Four continue to be low and it has been suggested in some instances that many of the farmers have not made sufficient profit to cover their cost of farming.

The fruit ranches along the North Fork Valley and the lower Uncompahgre Valley produced near average crops. Some early frost caused considerable damage to orchards in the lower elevations while the orchards at higher elevations did not experience as much damage to the fruit crop. Weather conditions always seem to have a significant influence on the production of the various fruits. Peaches, pears, cherries, apricots and apples were all grown with the apple crop being the largest of the different types of fruit grown. Overall the apple crop was equal to or somewhat larger than 1981 and the prices received for the processed packed apples were somewhat higher than the past year. Fall rain storms hampered the apple harvest, but most all of the fruits were picked and processed before the end of the season.

Livestock production in Division Four was about the same as last year's level and cattle and sheep prices were somewhat less than 1981. 1982 has shown very little change in the livestock inventories for the division. Most cattle ranchers are uncertain as to how to plan their future production schedules and herd levels. Interest rates have come down somewhat, however, overall cost of livestock production has not significantly been reduced and the general outlook for stock production remains very bleak. Again as in 1981, some ranch operations continue to be curtailed. Some of the ranches are being sold and some of this property is being divided into smaller tracts for recreational purposes. Farm and ranch land in Division Four no longer is sold at the high prices of recent years. However, farmland continues to command a premium price. Real estate activities have been reduced greatly since the mid 70's and probably the price for irrigated agricultural land continues to keep up with the rate of inflation and marginal tracts of farmland are still reported being sold for above their economical production value.

More and more, prime agricultural land is being bought and subdivided for expensive large tract home sites. This kind of activity makes it very difficult for the farmer and rancher to compete with the developer in the land market. This appears to be a long-term trend which may eventually involve many thousands of acres of prime agricultural land within Irrigation Division Four.

Presented below is a brief agricultural resume for 1982 by counties:

County	Average Growing Season in Days	Crop Production* Irrigated Land				Livestock**		
		Barley (Bu)	Beans (Lbs)	Corn Silage (T)	Corn Feed (Bu)	Cattle Calves	Stock Sheep	Hogs
Delta	146	66.5	1,430	19.5	130.0	40,000	22,000	5,700
Montrose	153	67.5	1,530	18.5	113.0	55,000	43,000	8,600
Mesa	188	86.0	1,500	18.5	125.0	71,000	34,000	11,400
Ouray	88	65.0	--	--	--	16,000	800	100
San Miguel	85	56.0	360	--	--	7,500	15,000	--
Gunnison	79	--	--	--	70.0	42,000	200	100
Hinsdale	65	--	--	--	--	1,100	--	--
Saguache	105	85.0	--	18.0	--	34,000	10,000	2,200

*1981 Colorado Agriculture Statistics, Published July, 1982; in bu/ac, lbs/ac or T/ac.

**Number of head 1981

Crop dollar values for 1981 are as follows:

County	Corn, Beans Grain & Silage	Hay*	Other Crops*	All Crops*
Delta	4,581,000	4,648,000	14,636,500	19,317,500
Montrose	11,355,000	6,386,000	12,048,000	22,402,000
Mesa	9,718,000	6,422,000	13,301,500	23,020,300
Ouray	86,400	953,000	1,852,400	1,938,800
San Miguel	342,200	378,500	639,100	981,300
Gunnison	78,510	4,701,000	5,267,600	5,340,100
Hinsdale	--	70,500	112,000	1,685,000
Saguache	13,425,000	6,553,000	17,077,000	30,496,000

The above production data has been extracted from the 1982 Colorado Agriculture Statistics - Colorado Department of Agriculture.

*Value of production by Colorado Counties for 1981.

The following special report is presented concerning the specific conditions that were experienced in irrigation District 40. This report has been prepared by Mr. Richard Drexel, Supervising Water Commissioner of Water District 40 and Mr. Robert Starr, Senior Water Commissioner, Water District 40, and we consider this an important addition to Division Four's Annual Report.

The snow-pack for the 1981-82 irrigation season was 23 per cent above normal. Since the critical water-short year of 1977, we have enjoyed above average snow fall and summer rains which has allowed water users an abundant supply of water. The above normal snow-pack had caused some concern that there would be flooding, but due to a very cool spring, the runoff from snow melt was held to controllable stream flows. In fact it allowed many junior decrees to run well into the summer months, which is unusual.

In mid September the area received above normal rains lasting until the first part of October. On the 26th of October another storm moved in and over one and one-fourth inches fell overnight with the mountains receiving as much as two feet of snow. As a result of so much moisture in the form of late runoff and late summer rains, only a small portion of reservoir water was used. In fact the reservoirs gained water during the summer. Over 70 per cent of the reservoir water was held over. These conditions made it an easy year for the Water Commissioners with very few water administrative problems, and the prospect for a good water year in 1983 due to the excellent carry-over in the reservoirs.

The excessive moisture did cause some problems however. The onion and bean growers were delayed in getting their produce harvested because of wet fields

and lack of drying weather. A lot of hay was ruined because it repeatedly dried, then got wet again before it could be bailed.

In early October a large portion of the hill above the Morton Ditch on Dry Creek slid downhill and caused the ditch to bulge up into the air. In some places the ditch is now eleven feet higher than its original elevation. Dry Creek itself is dammed up in places causing a small lake to form. People from the Soil Conservation Service explained that a layer of Manocs shale underlies the entire area. Water from irrigations or heavy rain percolates through the upper strata and lubricates the shale shelf causing the layers above to slip. A minimum of $20,000 will be spent in trying to rebuild the ditch and structures, but it would cost a lot more to really stabilize the hill. The headgate and return spillgate will have to be replaced as well as about one-quarter of a mile of ditch.

This situation is not unique to this area. The ditch has had many slides in it in the past even though this is probably the worst one and most costly. The county road department has had problems on a county road just over the the hill from the ditch and a year ago, a similar landslide on the south side of Rogers Mesa west of Hotchkiss wiped out a section of Denver and Rio Grande Western Railroad and caused extensive damage being so great that it may not be rebuilt.

The fruit crop was damaged again by an early freeze. This spring's freeze being unusual in that it froze the blossoms of the orchards in the lower elevation of the valley and along the main stem of the Gunnison River. The orchards in the higher elevations did not receive nearly as much damage to their fruit. Some orchard men are installing wind machines to lower the

temperature when damaging freezes threaten their crops. Those who have installed them claim they have helped. The rains also hampered the fruit-growers in harvesting their crops.

Prices of most farm products are still well under what it takes to make a profit. Only the well established or most efficient farmers can stay in business under these conditions. Evidence of this is seen in the number of foreclosures with sheriff sales and farm sales being advertised in the local newspapers.

The economy in this area is being effected by closing of coal mines, slow new housing development, less construction of new businesses, and delaying of new dam and power plant construction. Grand Mesa Coal has only a skeleton crew working and only produced 570,657 tons of coal this year. Quinn Coal Co. has closed down and moved out. The proposed new dam at Austin and new power line by Colorado-Ute Electric Association is postponed indefinitely as well as the one at Mack, Colorado.

Water right applications continue to be applied for as well as augmentation plans and well permits. The tabulation printout has to be updated and corrected this year, and work on the acreage study continues to keep everyone busy when outside administration is at a slack period. With the large percentage of reservoir carry-over, we are looking toward a good season in 1982-83.

Special Report from Water District 40

Richard L. Drexel, Supervising Water Commissioner

Again this year the mountains in the North Fork Valley received above average snow-pack. The winter was cold with frequent snow storms at the higher elevations and a few storms leaving six to eight inches in the valleys. The spring run-off was delayed and very slow due to the cold weather. Many of the junior ditches did not receive water due to the slow melting of the snow. No flooding occurred this year on any of the drainages.

All the reservoirs in the area filled and the natural flow held up very well. The valley received well above normal moisture during the summer causing the farmers problems getting their hay and grain harvested. Much of the reservoir water was released to the Gunnison River because no one needed more water and the reservoir owners wanted them empty going into the winter.

Unlike the Cedaredge area, the North Fork was not hit with heavy frost. The apple growers had a 70 to 80 per cent crop with prices being average or above the last few years. Cattle and sheep prices were very low again this year which is causing financial problems for many of the ranchers. The onion crop in the valley was delayed due to rain delaying the farmers from getting into the fields and also, the onions to dry. The onion prices are at about an all time low.

Many of the mines in the area are laying off employees because of the depressed coal market and also from losing contracts from the utility companies. Atlantic Richfield (ARCO) has opened their Mt. Gunnison mine this year and has produced 122,000 tons so far in 1982 which is 10 per cent of capacity. Western Slope Carbon has closed down and is trying to sell, laying off 200 employees in December and will release the other 50 in February, 1983 after removing the equipment. Sun Flower Energy closed its

doors this year laying off about 30 men. Colorado Westmoreland broke record production this year producing over a million tons with two months in the year left to mine. U. S. Steel would not release figures on their tonage.

Special Report from Water District 40

Robert H. Starr, Senior Water Commissioner

In the 1981 division report, Division Hydrographer Charles David submitted a brief narrative of his activities. We have asked Mr. David to again make a report and this is included and considered a contribution to this year's annual report.

The water supply for the 1982 irrigation year was excellent. The runoff started in early May, then a cold front moved into the state on May 6th freezing back the snow-pack and we had a cool spring in the high country. The May first snow-pack was well above average with projected streamflows in the division at 130 per cent of average. With the cool nights, the runoff was ideal, gradual and sustained with no flooding problems. June and July were unusually dry in the valleys, but streamflow was abundant. Precipitation in August and September ran from average to well above average. I believe almost all water users in Division Four enjoyed an adequate supply of irrigation water with only a few areas going under administrative call. As an example, the streamflow on the San Miguel River at Naturita during the period May through September was 140 per cent of the average of the previous ten years and the flow for September was 614 per cent of the ten year average. We finished the irrigation season with good to excellent carry-over storage in reservoirs. (Several operators have found they can't even give it away.)

As mentioned in last year's report, the responsibilities of the Hydrographer in Division Four have changed considerably in the last few years. Although we still operate a number of gaging stations in the division, the records are no longer published. These stations are run for administrative purposes and the records are worked up for use locally.

Elimination of the Federal Gaging Station contract and the excellent water year combined to reduce the hydrographic field work this year. With the lighter than normal administration of streams, there were fewer requests for special stream measurements. Mr. Tom Kelly has "kindly" helped me utilize the resulting "spare time". In recent months I have become involved in working with the Water Rights Tabulation and the computer records for the Water Data Bank. These tasks are giving me new insight into the complexities of our total recordation efforts. Parts of this work can be frustrating (like trying to eliminate 320 duplicate records generated by a bug in the system), but in general, it is new and interesting.

Last winter all available Division Four full-time water officials became involved in an irrigation-acreage mapping program. The data from this project will be utilized to develop a meaningful water budget and consumptive use study. It is also anticipated that the consumptive use figures developed from this study could become vitally important in defending Colorado's rights under the Colorado River Compacts, as the demands of the Lower Basin States increase.

We began the effort in early December, 1981 and worked until travel was cut off March 12th. During this interval, we identified, mapped and measured approximately 1,100 fields under 300 ditches and consisting of approximately 43,000 acres of irrigated land. Considering the fact that much of

the first month was spent scrounging materials and equipment and establishing contacts, I feel that excellent progress was made. Unfortunately, the curtailment of travel in mid March probably cost us four weeks of working time.

We plan to continue the mapping project during this current winter season. Because of restrictions on travel, most of the participating commissioners will be required to work in their homes or in the Cedaredge field office. This will create logistic problems. We hope the effectiveness of our efforts won't be reduced too badly.

Special Report from Division Hydrographer

Charles G. David

V. COMPACTS AND COURT STIPULATIONS

The Colorado River Compact of 1922 and the Upper Colorado River Basin Compact of 1948 apply to all waters in Division Four. The lower basin states can put a call on any series of water-short years based on the long-term average flow at Lee Farry. This year there was no occasion that involved administration of water in Division Four relating to these compacts.

VI. DAMS

Average or better snow-pack and above average or average carry-over storage levels gave the division staff considerable concern to the inspection and safety of all the high mountain reservoirs. Most all of the commissioners involved in these reservoirs and their inspection were at their various points of responsibility by the first of May and they were involved in the constant supervision during the filling season. There were a few minor incidents reported concerning reservoirs in the various water districts, however, no structure was considered to be critical in terms of structural integrity and the season passed without any significant problem. Various dams throughout the division are involved in special maintenance and repair programs. Formal restrictions remain nearly the same as in 1981 and in many instances reservoirs did spill during the filling season; however, careful management and attention to these structures allowed releases through the outlet works which reduced the potential of erosion and stress on the spillways of the majority of the division reservoirs. As reported in the 1981 division Annual Report, major enlargement plans are still being formulated for Buckeye Reservoir in the western part of Water District 61. The review of these plans and the

satisfying of all the various agencies involved has slowed the progress on this enlargement and the reservoir owners are uncertain as to when this enlargement might be started. One of the greater concerns at this particular time is the U. S. Forest Service and some of their particular requirements. The repair work on Cedar Mesa Reservoir in Water District 40 was completed and many reservoirs throughout the division were inspected by the Dam Inspection Section from the Denver office. Many letters relative to these inspections have been sent out to the owners of the structures.

Of the several hundred reservoirs and dams in Division 4, most are regulated and inspected by field Water Commissioners many times during the irrigation season. These men begin to make their observations before the snow leaves the reservoir areas and are involved in the administration with these reservoirs until late fall. They are alert to possible trouble-spots and continued communication between the Montrose office and field commissioners keep all the necessary personnel of Division of Water Resources current on the conditions of most reservoirs. There were no failures of dam structures during the 1982 season. The following table lists the various structures that are involved in official restrictions as of the date of this report.

Reservoir restriction orders are in effect as follows:

Name	Water District	Date	Restrictions
Lone Cabin	40	8-9-72	5' below lowest embankment
Waterbug	40	8-9-72	5' below embankment. Repairs made; no notice of restriction being lifted.
Beaver	40	Verbal, fall '73	Not over 75' without permission on gage; may fill late; were allowed to fill and spill if seepage did not exceed 3.00 cfs
Granby No. 12	40	10-25-76	7' below lowest point on crest of dam
Carl Smith	40	3-27-80	5' below lowest point on crest
Holy Terror	40	3-12-80	5' below lowest point in crest
Monument	40	3-25-80	7' below lowest point in crest
Mock Reservoir #1	41	9-20-82	9' below lowest point in dam
Meridian Lake Park	59	6-18-79	Not accepted for storage
Spring Creek	59	1-15-81	Under review; "Assessed unsafe"
Miramonte Dam	60	9-7-82	5' below spillway crest
Nucla Domestic	60	11-10-81	10' below lowest point in crest with provision storage above level not to exceed 2 months
Hidden Treasure	61	Verbal, fall '73	Enlarge channel opening at base of dam
Fullmoon	68	10-22-79	Storage restriction to 5' below lowest point in crest

Livestock Water Tanks - Permits Issued 1982:

Name	Stream	Height	Cap,A.F.	Permit #
Hopkins No. 1	Sec4-45N-8W-NMPM	19.0	2.00	15995
Alum Pond No. 2	Sec15-15S-93W-6PM	10.0	1.50	16014
Alum Pond No. 1	Sec15-15S-93W-6PM	14.0	2.00	16015
Impossible Dream Lake	Sec19-43N-12W-NMPM	14.0	3.00	16022
Gann Pond #1	Sec1-47N-11W-NMPM	15.0	3.00	16026

Inspections were made of several livestock water tanks during the 1981 season. There were no problems of any consequence concerning stock water tanks for this season.

VII. WATER RIGHTS

A. Tabulation

The Water Rights Tabulation for Division Four continues to be updated. Generally this work is done during the winter months with all of the decrees granted during the preceding year coded and submitted to be keypunched and added to the existing tabulation. During this time, the various errors that are discovered and brought to the division's attention are corrected and these corrections are also submitted to the Denver office for incorporation into the current records. In preparation for the 1983 publication of the Water Rights Tabulation, Division Four will be able to submit the necessary source data for updating our tabulation accoring to the time table received from the Denver office and the computer data processing section. All decrees that are issued in 1982 should be included in the 1983 tabulation and hopefully, many of the past errors will be eliminated when this new tabulation is printed.

B. Referee Findings and Decrees

Type of Application	No. Received Jan., 1982 thru Dec., 1982
Underground Water Rights	49
Change of Water Rights	29
Plan for Augmentation	7
Water Rights (Surface)	284
Diligence (Conditional)	79
To Make Absolute	33
Water Storage Rights	56
Applications Received in Water Court	374
Structures Filed On	412
Number of Referee Consultations	345

The Honorable Robert A. Brown continues to serve as Water Judge for Irrigation Division Four. Several trials have been held before Judge Brown concerning water problems in Division Four. The Division Engineer and the State Engineer have been a party to several of these trials, particularly the Talco case and the Evergreen Nursing Home case. These both involved ground water or well problems and a decision has been made on the Talco case denying the application because the diversion and application was considered a well. The Evergreen case concerning a well has not yet had a decision made. The case of the Jones well in Water District 40 and also the Rominiecki case in Water District 40 have been returned to the Supreme Court or being appealed to the Supreme Court for further litigation.

Effective September 1, 1982, Mr. Elra L. Wilson, Water Referee for Irrigation Division Four resigned. Mr. Wilson had acted as Referee from the beginning of the Water Court with Judge Calhoun and then under Judge Brown. There was a short period of time that Mr. Wilson was not Referee at the conclusion of Judge Calhoun's tenure as Water Judge. Mr. Wilson was replaced by Mr. Aaron Clay after a search for a qualified Water Referee by the Water Judge and input from the Division of Water Resources. Mr. Clay is a practicing attorney who lives in Delta and is welcomed to the Division Four Water Court system. Upon the appointment of Mr. Clay, the Assistant Division Engineer Tom Kelly was assigned to work with the Water Court on the consultation procedure. The Water Referee began to catch up some of the backlog that was present at his appointment. Division Four is pleased with the appointment of the new Water Referee. The association and communication with the Water Court is at a very high level of cooperation and we are pleased to report that the Water Court and the Water Referee are anxious to include the division office in all matters that pertain to the issuance of water decrees within Division Four.

VII. ORGANIZATION

A. Water Conservation and Conservancy Districts:

Upper Gunnison River Water Conservancy District, % Rial Lake, Chairman, Gunnison, Colorado 81230.

Tri-County Water Conservancy District, % C. A. Cannon, Manager, 601 North Park, Montrose, Colorado 81401.

Crawford Water Conservancy District, Don Little, Manager, Crawford, Colorado 81415.

Southwest Colorado Water Conservancy District, % Fred Kroeger, La Plata County Courthouse, Durango, Colorado 81301.

Bostwick Park Water Conservancy District, % Frank Woodrow, Attorney, 144 South Uncompahgre St., Montrose, Colorado 81401.

Grand Mesa Water Conservancy District, % Bud Burgess, Cedaredge, Colorado 81413.

North Fork Water Conservancy District, % John Neill, Secretary, Hotchkiss, Colorado 81419.

Fruitland Mesa Water Conservancy District, % Carton Meek, President, Maher, Colorado 81421.

Colorado River Water Conservation District, % Roland Fisher, Secretary, Glenwood Springs, Colorado 81601.

B. Water Related Organizations

Big Ditch Co., % Barbara Hood, Secretary, Cedaredge, Colorado 81413.

Grand Mesa Water Users Association, % Barbara Hood, Secretary, Cedaredge, Colorado 81413.

Gunnison River Water Users Association, % Jerry Goldsmith, Cedaredge, Colorado 81413.

North Fork Conservancy District, % John Neil, Secretary, Hotchkiss, Colorado 81419.

W.D. 28

Arch Ditch Co., % Deno Piloni, Gunnison, Colorado 81230

Hot Springs Reservoir Co., % W. M. Bauer, Gunnison, Colorado 81230

Needle Creek Reservoir Co., % Ty Watson, Gunnison, Colorado 81230.

Vouga Reservoir Co., % Buster Watson, Gunnison, Colorado 81230.

W.D. 40

Alfalfa Ditch Co., % Gary Volk, President, Eckert, Colorado 81418.

Big Ditch Co., % Steve Palmer, President, Cedaredge, Colorado 81413.

Bonafide Ditch Co., % Alvin Pfifer, Delta, Colorado 81416.

Bone Mesa Domestic Water Co., % Warren Cockroft, Paonia, Colorado 81419.

Cattlemans Ditch Co., % George Tracy, Maher, Colorado 81421

Cedaredge (Town of) Municipal Water Works, % Ed Marah, Superintendent, Cedaredge, Colorado 81413

Cedar Mesa Ditch & Reservoir Co., % Bob Phillips, Secretary, Cedaredge, Colorado 81413.

Childs Ditch Co., Clarence Fogg, Cedaredge, Colorado 81413.

Coalby Domestic Pipeline, Archie Peterson, President, Cedaredge, Colorado 81413.

Crawford Clipper Ditch Co., % Bill Linman, President, Crawford, Colorado 81415.

Crawford Conservancy District, % Don Little, Manager, Crawford, Colorado 81415.

Crawford Pipeline, % Town of Crawford, Crawford, Colorado 81428.

Fire Mountain Canal Co., % Mrs. Ora N. Housewert, Secretary, Hotchkiss, Colorado 81419.

Fruitland Irrigation Co., % Wm. Mugford, Secretary, Crawford, Colorado 81415.

Fruitland Mesa Conservancy District, % Carton Meek, Maher, Colorado 81421.

Grand View Canal Irrigation Co., % Don Reed, President, Crawford, Colorado 81415.

Hartland Canal Co., % Kenneth Johnson, Secretary, Delta, Colorado 81416.

Hotchkiss Pipeline, % Town of Hotchkiss, Hotchkiss, Colorado 81415

Lake Fork Ditch Co., % Phil Starr, President, Eckert, Colorado 81418

W.D. 40 - continued

Leroux Creek Water Users Association, % John Neil, Secretary, Hotchkiss, Colorado 81419.

Lone Cabin Ditch & Reservoir Co., % James R. Briscoe, Paonia, Colorado 81428.

Lone Pine Ditch Co., % Barbara Hood, Secretary, Cedaredge, Colorado 81413.

Minnesota Ditch & Reservoir Co., % Grant Farnsworth, Paonia, Colorado 81428.

Needle Rock Ditch Co., % Harold Cunningham, Crawford, Colorado 81415.

North Delta Canal Co., % Wm. McClendon, President, Delta, Colorado 81416.

North Fork Farmer Ditch Co., % Jess Campbell, Paonia, Colorado 81428.

Orchard City Irrigation District, % Mrs. Russel England, Secretary, Austin, Colorado 81410.

Orchard City Municipal Water Co., Wesley England, Manager, Austin, Colorado 81410.

Orchard Ranch Ditch Co., % Norman Kehmeier, President, Eckert, Colorado 81410.

Overland Ditch Co., % Billy Varner, President, Hotchkiss, Colorado 81419.

Paonia Ditch Co., % Merle Lund, Paonia, Colorado 81428.

Paonia Pipeline, % Town of Paonia, Paonia, Colorado 81428.

Relief Ditch Co., % Keith M. Bond, Delta, Colorado 81416.

W.D. 40 - continued

Saddle Mountain Ditch Co., % James Ayer, Crawford, Colorado 81415.

Shepherd-Wilmot Ditch Co., % Jess Campbell, Paonia, Colorado 81428.

Short Ditch Co., % Warren Cockroft, Hotchkiss, Colorado 81419.

Sunshine Mesa Domestic Water Co., % Helen Quain, Secretary, Route 1, Hotchkiss, Colorado 81419.

Surface Creek Ditch & Reservoir Co., Bill Briscoe, President, Cedaredge, Colorado 81413.

Terror Ditch & Reservoir Co., % William O'Bannon, Paonia, Colorado 81428.

Grand Mesa Water Users Association, % Bob Morris, President, Cedaredge, Colorado 81413.

Upper Surface Creek Domestic Water Users Association, % John Hawkins, President, Eckert, Colorado 81418.

W.D. 41

Chipeta Water Co., % Tom Roberts, Manager, Montrose, Colorado 81401.

Menoken Water Co., % Ken Hunt, President, Montrose, Colorado 81401.

Uncompahgre Valley Water Users Association, % Jim Hokit, Manager, Montrose, Colorado 81401.

W.D. 42

Grand Mesa Reservoir Co., % John Whiting President, Whitewater, Colorado 81527.

W.D. 42 - continued

Kannah Creek Water Users Association, % W. D. Bradbury, President, Whitewater, Colorado 81527.

Redlands Water & Power Co., % Jim Rankin, Secretary, 768 North Avenue, Grand Junction, Colorado 81501.

W. D. 60

Colorado Cooperative Ditch Co., % Roy Knickerbocker, Secretary, Nucla, Colorado 81424.

Farmers Water Development Co., Ivan McKinny, President, Norwood, Colorado 81423.

Lilylands Canal & Reservoir Co., % Marshall Hughes, President, Norwood, Colorado 81423.

Lone Cone Ditch & Reservoir Co., % Raymond Snyder, Secretary-Treasurer, Norwood, Colorado 81423.

San Miguel Conservancy District, % Bill Bray, Redvale, Colorado 81431

Wrights Mesa Conservancy District, % Steve Herndon, Norwood, Colorado 81423

W. D. 61

Paradox Valley Canal & Reservoir Co., % Wyvonna Irish, Secretary, Paradox, Colorado 81429.

Ray Ditch Co., % Wilma Proctor, Secretary, Paradox, Colorado 81429.

W.D. 62

Big Cimarron Canal & Reservoir Co., % Frank Woodrow, Attorney, 144 South Uncompahgre St., Montrose, Colorado 81401.

Bostwick Park Water Conservancy District, % Edwin S. Hofmann, Chairman, P. O. Box 1607, Montrose, Colorado 81401

W.D. 68

Alkali No. 1 Ditch Co., Inc., % Earl Wick, Secretary, Ridgway, Colorado 81432.

Alkali No. 2 Ditch Co., Inc., % Dick Barker, Secretary, Ridgway, Colorado 81432

Dallas Ditch Co., Inc., % Peter Decker, Secretary, Ridgway, Colorado 81432.

Old Agency Homestretch Ditch, % Warren Comerer, Colona, Colorado 81401.

Sneva Ditch, % Ralph Walchle, Secretary, Ridgway, Colorado 81432.

IX. WATER COMMISSIONER'S SUMMARY –

Division 4

Direct flow diversions (A.F.)	4,910,963
Flow diverted to reservoir storage (A.F.) .	521,966
Amount delivered from storage	2,463,510
Acres Irrigated	388,680
Number of ditches	2,643
Standard administration	2,101
Semi-standard administration	542
Number of daily ditch reports	42,136
Number of reservoirs served	223
Power diversions (A.F.)	2,796,063

District 28

Direct flow diversions (A.F.)	188,106
Flow diverted to reservoir storage (A.F.) .	3,815
Amount delivered from storage	1,776
Acres irrigated	34,377
Number of ditches	258
Standard administration	237
Semi-standard administration	21
Number of daily ditch reports	2,239
Number of reservoirs served	6
Average demand (flow & reservoir) AF/AC ...	5.45
Power diversions	0

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 40

Direct flow diversions (A.F.)	521,928
Flow directed to reservoir storage (A.F.)..	68,726
Amount delivered from storage (A.F.)	52,099
Municipal and other	4,828
Acres irrigated	120,563
Number of ditches	810
Standard administration	737
Semi-standard administration	73
Number of daily ditch reports	23,124
Number of reservoirs served	161
Average demand (flow & reservoir) AF/AC ...	4.30
Power diversions (A.F.)	0

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 41

*Direct flow diversions (A.F.)	629,093
Flow diverted to reservoir storage (A.F.) .	270
Amount delivered from storage (A.F.)	138
Acres irrigated	88,646
Number of ditches	79
Standard administration	79
Semi-standard administration	0
Number of daily ditch reports	1,969
Number of reservoirs served	2
Average demand (flow & reservoir) AF/AC ...	6.71
Power diversions (A.F.)	2,337

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

*This includes 267,925 A.F. imported through the Gunnison Tunnel. This amount consists of 5,935 A.F. diverted from WD-62 for municipal and domestic use, 262,403 A.F. diverted from WD-62 for irrigation and 1,587 A.F. of storage water from Taylor Park Reservoir in WD-59.

District 42

*Direct flow diversions (A.F.)	544,891
Flow diverted to reservoir storage (A.F.)	4,907
Amount delivered from storage	2,361
Acres irrigated	10,852
Number of ditches	58
Standard administration	41
Semi-standard administration	17
Number of daily ditch reports	4,583
Number of reservoirs served	18
Average demand (flow & reservoir) AF/AC	4.72
Power diversions	484,393

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

*Redland Power Canal includes water diverted from Irrigation Division 4 used in Division 5.

District 59

Direct flow diversions (A.F.)	256,556
Flow diverted to reservoir storage (A.F.)	31,940
Amount delivered from storage	17,931
Acres irrigated	35,220
Number of ditches	262
Standard administration	180
Semi-standard administration	82
Number of daily ditch reports	2,197
Number of reservoirs served	6
Average demand (flow & reservoir) AF/AC	7.75
Power diversions	0

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 60

Direct flow diversions (A.F.)	125,603
Flow diverted to reservoir storage (A.F.)	11,602
Amount delivered from storage	10,454
Acres irrigated	30,500
Number of ditches	321
Standard administration	276
Semi-standard administration	45
Number of daily ditch reports	2,202
Number of reservoirs served	10
Average demand (flow & reservoir) AF/AC	3.82
Power diversions	7,045

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 61

Direct flow diversions (A.F.)	12,250
Flow diverted to reservoir storage (A.F.)	2,913
Amount delivered from storage	686
Acres irrigated	3,282
Number of ditches	104
Standard administration	71
Semi-standard administration	33
Number of daily ditch reports	1,405
Number of reservoirs served	4
Average demand (flow & reservoir) AF/AC	3.48
Power diversions	0
	50

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 62

Direct flow diversions (A.F.)	123,118
Flow diverted to reservoir storage (A.F.)....	397,380
*Amount delivered from storage	2,367,028
Acres irrigated	38,000
Number of ditches	308
Standard administration	243
Semi-standard administration	65
Number of daily ditch reports	1,467
Number of reservoirs served	8
**Average demand (flow & reservoir) AF/AC	3.28
Power diversions	2,302,048

*Includes delivered from the Currecanti system.

**Adjusted to not include Taylor Reservoir and Currecanti System releases.

SPECIAL NOTE FOR DISTRICT 62 ONLY:

Water used by Uncompahgre Project from Gunnison River and Reservoirs			262,403 A.F.
Silverjack Reservoir storage:	Irrigation	1,450	
	Fish & river	8,170	
	TOTAL		9,620

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 63

Direct flow diversions (A.F.)	14,847
Flow diverted to reservoir storage (A.F.)	340
Amount delivered from storage (A.F.)	306
Acres irrigated	2,887
Number of ditches	82
Standard administration	53
Semi-standard administration	19
Number of daily ditch reports	850
Number of reservoirs served	3
Average demand (flow & reservoir) AF/AC	4.89
Power diversions (A.F.)	0

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 68

Direct flow diversions (A.F.)	113,380
Stock water	3,920
Flow diverted to reservoir storage (A.F.)	73
Amount delivered from storage	12
Acres irrigated	21,800
Number of ditches	322
Standard administration	157
Semi-standard administration	165
Number of daily ditch reports	1,696
Number of reservoirs served	5
Average demand (flow & reservoir) AF/AC	4.87
Power diversions (A.F.)	240

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 73

Direct flow diversions (A.F.)	8,157
Flow diverted to reservoir storage (A.F.) .	0
Amount delivered from storage	0
Acres irrigated	2,553
Number of ditches	36
Standard administration	27
Semi-standard administration	9
Number of daily ditch reports	404
Number of reservoirs served	0
Average demand (flow & reservoir) AF/AC ...	3.20
Power diversions	0

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

ANNUAL SUMMARY - DIVISIONS

ACRE FEET (11-1-81 thru 10-31-82)

Divisions	Non-Exempt Wells #	Ditch Structures Reported #	IRRIGATION Direct Diversions To Irrigation	IRRIGATION Diversions To Storage	IRRIGATION Storage To Irrigation	CURRENT YEAR Acres Irrigated	TRANS-MOUNTAIN Div. to Div. Export	TRANS-MOUNTAIN Div. to Div. Import
1								
2								
3								
4	224	2,643	4,910,581	521,966	87,213	388,680	2,130	3,934
5								
6								
7								
TOTAL								

Divisions	MUNICIPAL Direct Diversions	MUNICIPAL Diversions To Storage	MUNICIPAL Storage Releases	INDUSTRIAL Direct Diversions	INDUSTRIAL Diversions To Storage	INDUSTRIAL Hydro-Power	RECREATION Storage-Wildlife Parks	ACTUAL STORAGE For Year All Reservoirs	# Decree Applications	# Water Court Applications
1										
2										
3										
4	32,171	13,725	13,725	4,910,581	521,966	2,796,063	1,099,057	1,088,334	251	374
5										
6										
7										
TOTAL										

NA - No water available

NU - Non use

NR - No record

TABLE A

DIVISION SUMMARY - DIVISION NO. 4

Direct Flow Diversions

1982

Water District	Total Ditches Reported				Irrigation Diversions Ac. Ft.	No. of Acres Irrigated	Ac.Ft. Per Acres	Industrial, Fish Use Diversions A.F.	Dom.& Mun. Use Diversions A.F.		Recreation Use Diversions A.F.	Trans-Mtn. Diversions A. F.	Total Diversions A. F.	No. of Daily Ditch Rpts.	Delivered to Compact Cmtmt.A.F.
	Active	Inactive													
		NA	NU	NR											
28	237	0	0	21	185,710	34,377	5.45	442	0		1,410	544	188,106	2,239	0
40	810	0	45	47	476,944	120,563	3.96	11,165	4,828	26,383	0	2,608	521,928	23,124	0
41	79	0	0	0	594,570	88,646	6.71	4,746	5,935	23,568	274	0	629,093	1,969	0
42	40	2	3	8	48,825	10,852	4.50	484,393	11,673		0	0	544,891	4,583	0
59	180	22	21	39	255,066	35,220	7.24	124	1,366		0	0	256,556	2,197	0
60	276	10	20	15	106,000	30,500	3.48	7,500	1,350	1,000	9,753	0	125,603	2,202	0
61	71	1	25	7	10,742	3,282	3,27	0	250	1,258	0	0	12,250	1,405	0
62	243	20	45	0	123,118	38,000	3.24	2,367,028	5,224		0	782	2,496,152	1,467	0
63	53	0	4	5	13,821	2,887	4.79	0	1,026		0	0	14,847	850	0
68	157	0	25	140	106,169	21,800	4.87	2,086	519	3,920	160	526	113,380	1,696	
73	25	0	5	4	8,157	2,553	3.20	0	0		0	0	8,157	404	0
Total	2,171	55	193	286	1,929,122	388,680	4.96	2,877,484	32,171	56,129	11,597	4,460	4,910,963	42,136	0

TABLE B

DIVISION SUMMARY - DIVISION NO. 4

Storage Report - Acre Feet

Water District	Amount in Storage Acre Feet			Actual Amt. Diverted to Storage During Season	Delivered from Storage to Irrigation	Storage to Industrial/ Power Use	Storage for Municipal Use	Storage for Recreation Use	Storage to Projects
	11-1-81	6-1-82	10-31-82						
28	1,457	4,822	5,254	3,815	1,776	0	0	1,235	0
40	15,212	83,938	39,164	68,726	52,099	0	374	83,938	26,750
41	1,740	2,010	1,914	270	138	0	* 0	2,400	0
42	8,051	12,958	8,874	4,907	2,361	0	11,048	0	0
59	50,505	60,000	86,660	31,940	17,931	0	0	90,320	0
60	13,123	(6-24-82) 24,725	15,917	11,602	10,454	7,045	2,228	24,725	17,499
61	350	1,700	700	2,913	686	0	50	1,000	0
62	498,511	895,891	870,276	397,380	1,450	**2,302,048	0	895,266	9,230
63	0	340	34	340	306	0	0	0	0
68	1,750	1,950	1,910	73	12	0	25	173	0
73	0	0	0	0	0	0	0	0	0
Total	590,699	1,088,334	1,030,703	521,966	87,213	2,309,093	13,725	1,099,057	53,479

*5935 A.F. Domestic water diverted from WD-62 (Gunnison Tunnel) brought through Fairview Reservoir for Project 7.

**U.S.B.R. Reservoirs Power Releases

WORKLOAD AND STATISTICAL INDICATORS

- Statistics -

Description	1981-82
Acre Feet Water Used (Direct Flow & Reservoir)	499,176
Acre Feet Diverted for Agricultural Use	1,929,122
Acre Feet Diverted for Industrial Use	2,877,484
Acre Feet Diverted for Recreational Use	11,597
Acre Feet Diverted for Urban Use (Municipal)	32,171
Acre Feet Diverted to Compact Commitment	None
Acre Feet Water Stored (Maximum)	1,088,334
Acre Feet Water Divisions Transbasin Diversion	6,064
Acres Irrigated	388,680
Ditches & Reservoirs Administered (No Wells)	2,866
Daily Ditch Reports	42,136
*Acre Feet Water Delivered from Storage (Irrigation)	87,213

*Power Releases not included.

December 27, 1982

UNCOMPAHGRE PROJECT

1982 REPORT

Under the terms of the contract between the Bureau of Reclamation and the Uncompahgre Valley Water Users Association, approved August 4, 1931, the operation and maintenance of the project was taken over by the Association on January 1, 1932.

The project irrigation system includes 575 miles of irrigation canals and laterals, including 7.2 miles of tunnels and 217 miles of open drains, plus storage facilities at Taylor Dam, with a maximum of 106,000 acre feet.

The water content of the snow on the Uncompahgre River watershed measured at Ironton Park snow course was 120% of normal on May 1, 1982. Readings of 11.9 inches of moisture compared to a normal of 8.0 inches were taken.

Even with above average moisture, the farms were encouraged to start irrigation early to help start return flows into the canals and build up ground water. With rain showers around the area, July and August deliveries were above normal and held at 100%.

Taylor Reservoir did not spill during the summer of 1982. It reached its maximum storage of 90,820 acre feet on August 10, 1982. Storage on November 1, 1982 was 73,771 acre feet.

Some of the major problems on the project were canal bank movement on the M & D at Station 4.30, requiring about 500 yards of material to build up.

We poured 36 new small concrete structures in 1982. The Association is now in the process of repairing and replacing concrete lining along the South Canal through a Rehabilitation and Betterment loan from the U.S. Government. To date we have replaced about 1,200 lineal feet of sidewall and 3,760 feet of floor. In addition to this, we have repaired and extended about 6,000 feet of sidewall.

The program began in early 1982 and will last approximately eight years. Other major structures within the project will be replaced or repaired under this program.

Three flash floods on the west side of the vally through the summer caused some structure and canal damage and quite a large amount of cleanup time.

UNCOMPAHGRE VALLEY WATER USERS ASSOCIATION

James Hokit, Manager

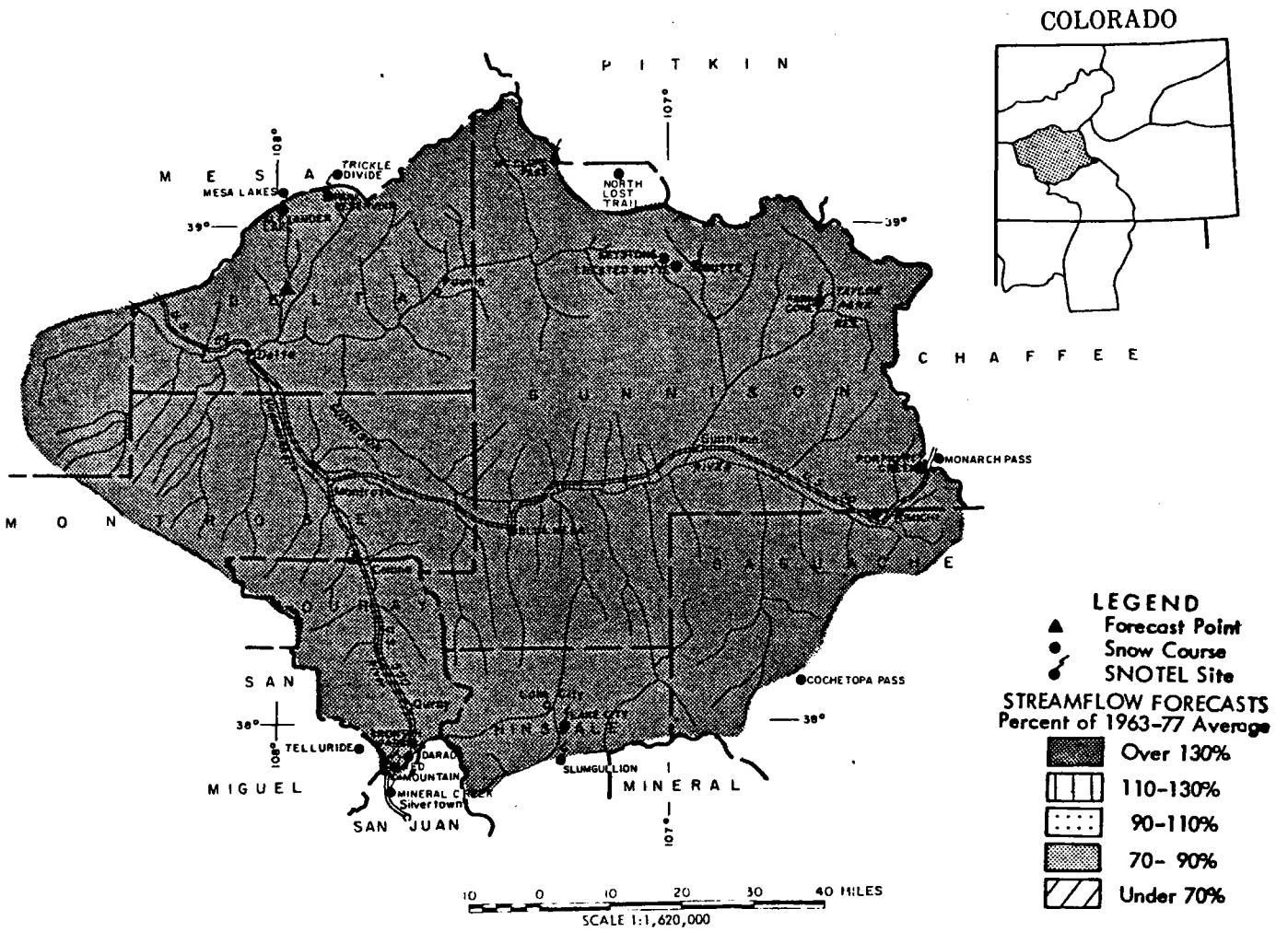
WATER SUPPLY OUTLOOK

FOR THE SOIL CONSERVATION DISTRICTS IN THE

GUNNISON RIVER WATERSHED IN COLORADO

AS OF

May 1, 1982



YOUR WATER SUPPLY

EXCELLENT SNOWPACK CONDITIONS EXIST AT THE HIGH ELEVATIONS ABOVE 10,000 FEET. BASIN SNOWPACK IS 132% OF AVERAGE. FOR EXAMPLE, RED MOUNTAIN PASS SNOW COURSE MEASURED 95 INCHES DEPTH CONTAINING 40.6 INCHES OF WATER WHICH IS 27% ABOVE NORMAL. STREAMS ARE EXPECTED TO PRODUCE 20% TO 35% ABOVE NORMAL FLOWS IN MOST AREAS. SOME SMALLER TRIBUTARIES WITH CONTRIBUTING AREAS BELOW 9,500 FEET MAY PRODUCE NEAR AVERAGE STREAMFLOWS. STREAMS WITH HEADWATERS ABOVE 9,500 FEET SHOULD SEE GOOD LATE SUMMER RUNOFF. RESERVOIR STORAGE IS NOW 80% OF AVERAGE, AND IS EXPECTED TO IMPROVE WITH THE ANTICIPATED HIGH STREAMFLOWS.

STREAMFLOW FORECASTS (1000 Ac. Ft.) April - September

FORECAST POINT	Forecast	% of Average	1963-77 Average
East River At Almont	250	133	188.0
Gunnison River inflow to Blue Mesa Reservoir (1)	1020	135	754.3
Gunnison River near Grand Junction (2)	1500	130	1150.0
North Fork of Gunnison (3)	330	126	262.0
Surface Creek near Cedaredge	20	132	15.2
Taylor River Inflow to Taylor Park Reservoir	152	138	110.0
Uncompahgre River at Colona	170	132	129.2

(1) Observed flow plus change in storage in Taylor Reservoir. (2) Observed flow plus change in storage in Blue Mesa, Morrow Point and Taylor Reservoirs. (3) Observed flow plus change in storage in Paonia Reservoir.

WATER SUPPLY OUTLOOK Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply.

STREAM or AREA	Flow Period	
	Spring Season	Late Season
Ohio Creek	Exc	Exc
Slate River	Exc	Exc
Tomichi Creek	Exc	Avg

RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

Basin or Stream and/or RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	1963-77 Average
Blue Mesa	830	235	390	300
Crawford	14	9	12	12*
Fruitgrowers	4	4	4	4*
Fruitland	9	3	4	5*
Morrow Point	121	115	117	105
Taylor	106	22	56	60

* 1967-77 Average

SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	1963-77 Average
Gunnison	13	562	134
Surface Creek	3	287	133
Uncompahgre	3	285	124

Issued by

PETER C. MYERS
CHIEF
SOIL CONSERVATION SERICE
WASHINGTON, D. C.

Released by

SHELDON G. BOONE
STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
DENVER, COLORADO

RAY T. MARGO, JR.
STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
ALBUQUERQUE, NEW MEXICO

WATER SUPPLY OUTLOOK

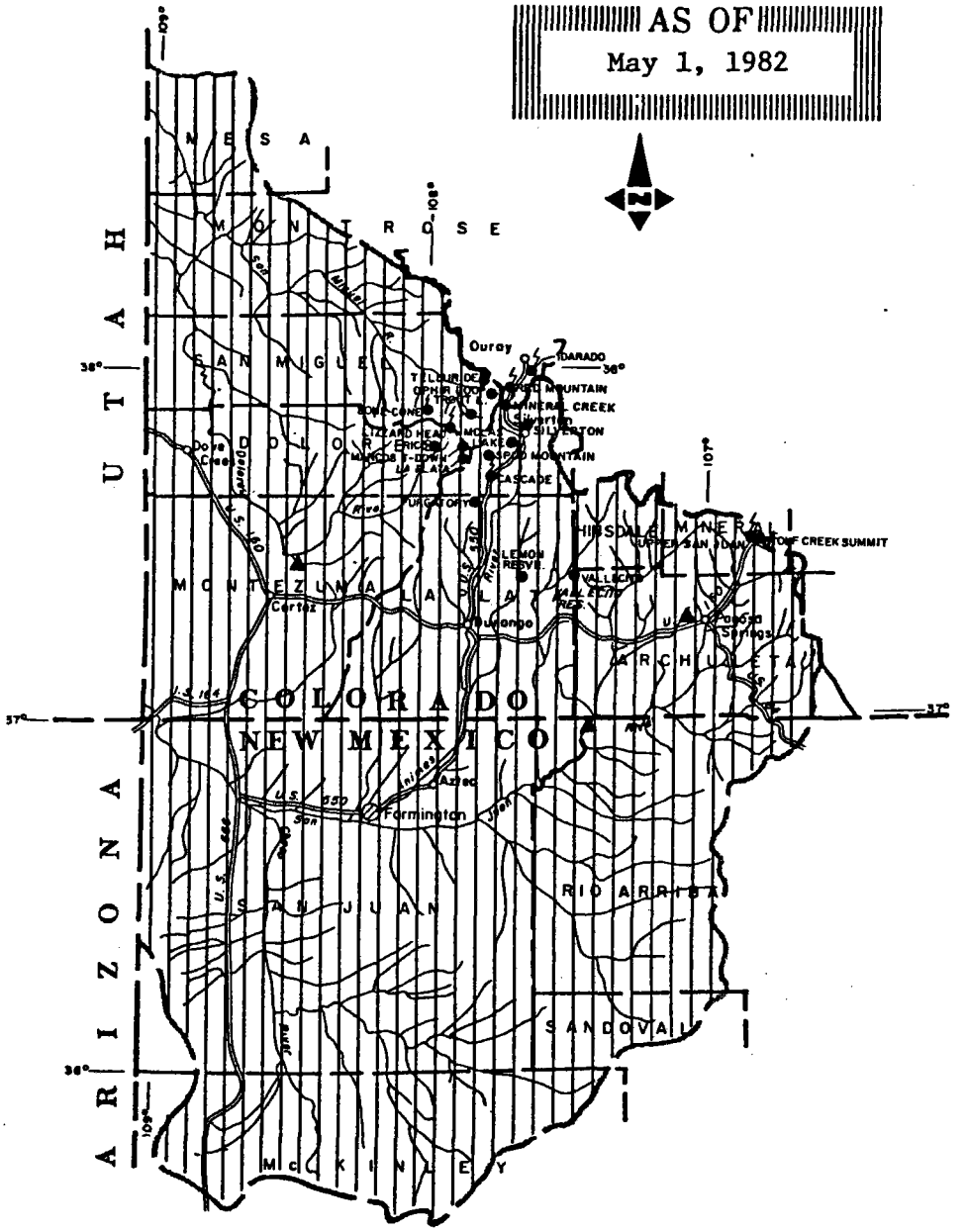
FOR THE SOIL CONSERVATION DISTRICTS IN THE

SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN

WATERSHEDS IN COLORADO AND NEW MEXICO

AS OF

May 1, 1982



LEGEND

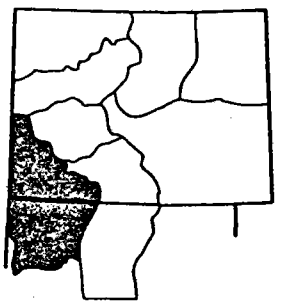
- Forecast Point
- Snow Course
- SNOTEL Site

STREAMFLOW FORECASTS
Percent of 1963-77 Average

- Over 130%
- 110-130%
- 90-110%
- 70- 90%
- Under 70%

10 0 10 20 30 40
SCALE IN MILES

COLORADO



YOUR WATER SUPPLY

PRECIPITATION THROUGHOUT THE BASIN DURING APRIL WAS WELL BELOW NORMAL. HOWEVER, COOL TEMPERATURES PREVENTED SUBSTANTIAL MELT, AND AS A RESULT SNOWPACK FIGURES REMAIN AT 31% ABOVE NORMAL. STREAMFLOW FORECASTS ARE RELATIVELY UNCHANGED FROM THE PREVIOUS MONTH AND GENERALLY RANGE FROM 20 TO 35% ABOVE NORMAL. HIGH WATER CAN BE EXPECTED TO LAST SEVERAL WEEKS LONGER THAN USUAL. THE ANIMAS RIVER AT DURANGO IS EXPECTED TO FLOW 27% ABOVE AVERAGE AND THE SAN JUAN RIVER AT CARRACAS AT 32% ABOVE AVERAGE. CARRYOVER STORAGE IS 164% OF NORMAL IN BASIN RESERVOIRS. SOIL MOISTURE IN THE IRRIGATED AREAS RANGES FROM FAIR TO GOOD.

STREAMFLOW FORECASTS (1000 Ac. Ft.) April - September

FORECAST POINT	Forecast	% of Average	1963-77 Average
Animas River at Durango	540	127	425.3
Dolores River at Dolores	283	121	232.9
Florida River at Bondad	40	129	31.0
La Plata River at Hesperus	30	128	23.5
Los Pinos River at Bayfield (1)	240	118	204.4
Mancos River near Towaoc (2)	22	100	21.9
Inflow to Navajo Reservoir (1 & 3)	760	125	608.2
Piedra Creek at Arboles	270	134	200.7
San Juan River at Carracas	490	132	369.8
San Miguel River at Placerville	155	125	123.6

(1) Observed flow plus change in storage in Vallicito Reservoir. (2) March-July. (3) April-July.

WATER SUPPLY OUTLOOK

Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply.

STREAM or AREA	Flow Period	
	Spring Season	Late Season
Hermosa Creek	Exc	Avg
West Dolores River	Exc	Avg
Williams Creek	Exc	Avg

RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

Basin or Stream and/or RESERVOIR	Usable Capacity	Usable Storage			
		This Year	Last Year	1963-77 Average	
Groundhog	22	5	1	14	**
Jackson Gulch	10	5	7	8	
Lemon	40	32	27	23	
Narraguinep	19	19	19	15	*
Navajo	1696	1284	1246	741	
Vallecito	126	81	77	66	

*1967-77 Averages
**Period of Record

SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	1963-77 Average
Animas	8	353	118
Dolores	6	525	152
San Juan	6	347	134

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ALBUQUERQUE, NEW MEXICO

TABLE OF ORGANIZATION - PERSONNEL

IRRIGATION DIVISION NO. 4

Division Engineer - Ralph V. Kelling

Assistant Division Engineer - Thomas A. Kelly

Secretary - Jean Kurtz

Hydrographer - Charles G. David

Water District 28

WATER COMMISSIONER B
John S. Garber

Water District 40

PRIN. WATER COMMISSIONER
*Richard L. Drexel

**SENIOR WATER COMMISSIONER
*Robert H. Starr

WATER COMMISSIONERS

Willard N. Bull	WCA	
Lloyd A. Connell	WCA	
Mack Gorrod	WCB	
James T. Hanrahan	WCA	
John L. McHugh	WCB	
James Miller	WCB	
L. Gregg Scott	WCA	
Charles E. Stein	WCA	
Stephen W. Tuck	WCB	
Wayne W. Wiseman	WCA	
Charley E. Woolley	WCB	
David E. Woolley	WCA	

Water District 41

WATER COMMISSIONER B
Crandall Howard

Water District 42

**SENIOR WATER COMMISSIONER
*Richard Belden

WATER COMMISSIONER B
Lester Whiting

Water District 59

WATER COMMISSIONER B
*Edwin S. Hofmann

WATER COMMISSIONER B
Robert Drexel

Water District 60

WATER COMMISSIONER C
Lyman D. Campbell

Water District 61

WATER COMMISSIONER B
Clinton L. Oliver

Water District 62

WATER COMMISSIONER B
Edwin S. Hofmann

Water District 63

SENIOR WATER COMMISSIONER
Richard Belden

WELL COMMISSIONER
*Dwayne Mansker

Water District 68

WATER COMMISSIONER B
*H. Roger Noble

Water District 73

SENIOR WATER COMMISSIONER
Richard Belden

*Annual

**Reflects new title effective January 1, 1982.

AREAS OF RESPONSIBILITY OF WATER COMMISSIONERS

IRRIGATION DIVISION NO. 4

1042

WELL COMMISSIONER

Dwayne Mansker	WCC	Division Wide

WATER DISTRICT 28

John S. Garber	WCB	Tomichi and Cochetopa Creek

WATER DISTRICT 40

Richard Drexel	PRWC	Overall administration and supervision of Water District 40
Robert H. Starr	SRWC	North Fork of the Gunnison River and Smith Fork

WATER COMMISSIONERS

Willard Bull	WCA	Upper Surface Creek
Lloyd Connell	WCA	Minnesota Creek and Stewart Mesa
Mack Gorrod	WCB	Ward, Kiser and Youngs Creek Reservoirs
Charles Stein	WCA	Gunnison River and Escalante Creek
Jack McHugh	WCB	Youngs, Kiser and Ward Creeks
James Miller	WCB	Muddy Anthracite and Hubbard Creeks
Logan Gregg Scott	WCA	Park Basin
James T. Hanrahan	WCA	Leon Reservoirs
Stephen Tuck	WCB	Forked Tongue
Wayne Wiseman	WCA	Granby and Battlement Reservoirs
Charley Woolley	WCB	Lower Surface Creek
David Woolley	WCA	Dry Creek and Alfalfa Run

WATER DISTRICT 41

Crandall Howard	WCB	Uncompahgre River from Colona to Delta

Areas of Responsibility of Water Commissioners (cont'd)

WATER DISTRICT 42		
Richard Belden	SRWC	Gunnison River below Mesa County line and its tributaries
Lester Whiting	WCB	Same area
WATER DISTRICT 59		
Robert Drexel	WCB	Gunnison River above Gunnison and tributaries on north side of the Gunnison River from Gunnison to Mesa Creek
WATER DISTRICT 60		
Lyman Campbell	WCC	San Miguel River
WATER DISTRICT 61		
Clinton Oliver	WCB	Dolores River below the San Miguel County line to confluence with San Miguel River (Paradox Valley)
WATER DISTRICT 62		
E. S. Hofmann	WCB	Cimarron River, Lake Fork of Gunnison and Cebolla Creek
WATER DISTRICT 63		
Richard Belden	SRWC	Dolores River below confluence of San Miguel River
WATER DISTRICT 68		
H. Roger Noble	WCB	Uncompahgre River above Colona
WATER DISTRICT 73		
Richard Belden	SRWC	Little Dolores River

HYDROMETEOROLOGICAL DATA - BLUE MESA RESERVOIR (From U.S. Bureau of Reclamation, CRSP Power Operations, Monthly Reports)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1980												
Precip. (In.)	.13	1.61	1.61	0.58	.71	.55	.03	.45	.29	.20	.10	.56
Avg. Max. Temp.	31.00	33.00	33.00	36.00	54.00	64.00	81.00	86.00	82.00	65.00	57.00	50.00
Avg. Min. Temp.	3.00	4.00	4.00	9.00	20.00	32.00	40.00	49.00	48.00	34.00	20.00	18.00
Total Mo. Precip.	1.18 In.	2.79	3.37	4.08	4.63	4.66	5.06	5.35	5.55	5.65	5.75	6.21
Total Mo. Dischg.	99,960 A.F.	90,380	90,380	109,890	99,640	128,200	109,440	112,140	103,550	79,815	80,050	95,456
1981												
Precip. (In.)	.07	.23	.21	.64	.34	.61	.30	1.99	2.02	.80	.53	.04
Avg. Max. Temp.	42.00	38.00	44.00	48.00	64.00	62.00	82.00	83.00	81.00	73.00	53.00	53.00
Avg. Min. Temp.	17.00	8.00	12.00	20.00	29.00	35.00	45.00	52.00	50.00	43.00	27.00	20.00
Total Mo. Precip.	.07 In.	.30	.51	1.15	1.49	2.10	2.40	4.39	4.68	5.48	6.01	6.05
Total Mo. Dischg.	100,850 A.F.	96,500	60,105	59,400	56,350	65,120	56,190	68,350	70,660	53,640	49,100	31,170
1982												
Precip. (In.)	1.58	2.20	1.01	1.52	.33	.10	.99	2.71	1.17	1.08	.40	.06
Avg. Max. Temp.	36.00	26.00	24.00	44.00	56.00	70.00	80.30	78.50	83.00	78.00	51.00	46.00
Avg. Min. Temp.	12.00	1.00	-1.00	19.00	23.00	30.00	41.20	45.60	52.00	46.00	26.00	18.00
Total Mo. Precip.	1.58 In.	3.78	4.79	6.31	6.64	6.74	7.73	10.44	11.61	12.69	13.09	13.15
Total Mo. Dischg.	36,470 A.F.	39,210	80,180	82,870	52,140	26,030	27,010	77,880	88,170	76,120	79,210	81,040