

**ANNUAL OPERATING PLAN
FRYINGPAN-ARKANSAS PROJECT
WATER YEAR 2010 OPERATIONS**

I. GENERAL

This is the 41st annual operating plan for the Fryingpan-Arkansas Project. The project, completed in 1990, imports spring snowmelt runoff from Colorado's west slope to the semi-arid Arkansas River Basin on Colorado's east slope. The project consists of federally owned dams, reservoirs, stream diversion structures, conduits, tunnels, pumping plants, a pumped-storage powerplant, electric transmission lines, substations, and recreation facilities. These features are located in the Fryingpan River and Hunter Creek watersheds of the Upper Colorado River Basin, and in the Arkansas River Basin in central and southeastern Colorado. The project provides water for irrigation, municipal and industrial use, hydroelectric power generation, recreation, and wildlife habitat. The project also provides for flood control.

The project was authorized under Public Law 87-590 on August 16, 1962. This law provides that the project will be operated under the operating principles adopted by the State of Colorado on April 30, 1959, as amended on December 30, 1959, and on December 9, 1960. These operating principles were published as House Document 130 (87th Congress, 1st Session), and are included in Appendix E.

This annual operating plan is a summary of the actual project operation in water year 2010 (October 1, 2009 through September 30, 2010).

II. PROJECT FEATURES IN OPERATION DURING WATER YEAR 2010

Ruedi Dam and Reservoir are located on the Fryingpan River, a tributary of the Roaring Fork River, on Colorado's west slope about 13 miles east of Basalt, Colorado. Ruedi Reservoir has a total capacity of 102,373 acre-feet at a water surface elevation of 7766.0 feet. The reservoir is operated on an annual cycle. Steady winter releases draft the reservoir such that it is filled with the spring runoff, while releases to the Fryingpan River are maintained below the safe channel capacity. The reservoir provides replacement water for out-of-priority depletions to the Colorado River by the project as well as water for west slope irrigation, municipal, and industrial uses on a contractual basis. The reservoir is also operated to provide for recreation, wildlife habitat, and flood control.

The west slope collection system, located upstream of Ruedi Reservoir in the upper Fryingpan River and Hunter Creek watersheds, is a series of 16 stream diversion structures and 8 tunnels. The system collects spring snowmelt runoff for diversion, by gravity, to the inlet of the Charles H. Boustead Tunnel. The Boustead Tunnel conveys water collected by the west slope collection system under the continental divide and into Turquoise Lake on the east slope. The tunnel is 5 miles long and has a water conveyance capacity of 945 cubic feet per second (cfs).

Sugarloaf Dam and Turquoise Lake are located on Lake Fork Creek, a tributary of the Arkansas River, about 5 miles west of Leadville, Colorado. The lake has a total capacity of 129,398 acre-feet at a water surface elevation of 9869.4 feet. The lake is operated to provide regulation of both project and non-project water imported from the west slope. Turquoise Lake is operated on an annual cycle, as is Ruedi Reservoir. The lake is drafted through the Mt. Elbert Conduit during the winter to provide adequate space for the spring imports of west slope water. Most of the native inflow from Lake Fork Creek is impounded in the lake and returned to the Arkansas River via the Mt. Elbert Conduit, the Mt. Elbert Powerplant, and Twin Lakes. The lake is also operated to provide for recreation and wildlife habitat.

The Mt. Elbert Conduit conveys project, non-project, and native Lake Fork Creek water from Turquoise Lake to Twin Lakes. The conduit is 10.7 miles long and has a water conveyance capacity of 370 cfs. Native water from Halfmoon Creek is also added to the conduit and returned to the Arkansas River from Twin Lakes Dam. All conduit flow which reaches the Mt. Elbert Forebay is used to generate electricity at the Mt. Elbert Powerplant as it is delivered to Twin Lakes.

The Mt. Elbert Powerplant is a pumped-storage facility located on the shore of Twin Lakes. It has two 100-megawatt turbine generators, which can be reversed and used as 340,000-horsepower pumps. In addition to being used to generate energy with the Mt. Elbert Conduit flow, the plant is used to follow daily peak power loads. This load following is accomplished by pumping water to the Mt. Elbert Forebay, an 11,143-acre-foot regulating pool at the terminus of the Mt. Elbert Conduit, from Twin Lakes during off-peak load hours using surplus or low cost energy. That water is then returned to Twin Lakes through the turbines during peak load hours, along with the Mt. Elbert Conduit flow. The energy generated at the plant is transmitted and marketed by the Western Area Power Administration, with the revenues applied to the repayment of the project.

Twin Lakes Dam and Twin Lakes are located on Lake Creek, a tributary of the Arkansas River, about 13 miles south of Leadville, Colorado. Twin Lakes has a capacity of 140,855 acre-feet at a maximum water surface elevation of 9200 feet. The reservoir is operated to regulate both project and non-project water imported from the west slope. The project water stored in the reservoir is released to Lake Creek for storage in Pueblo Reservoir during the winter months, in anticipation of spring imports from the west slope. Native inflows into Turquoise Lake, native flows diverted from Halfmoon Creek, and native inflows into Twin Lakes, are all released to Lake Creek from the Twin Lakes Dam. The cities of Colorado Springs and Aurora take direct delivery of water from the reservoir through their Otero Pipeline. The operation of Twin Lakes also provides for recreation and wildlife habitat.

Pueblo Dam and Reservoir are located on the Arkansas River 6 miles west of the city of Pueblo, Colorado. The reservoir is the terminal storage facility for the Fryingpan-Arkansas Project and has a total storage capacity of 349,940 acre-feet at a water surface elevation of 4898.7 feet. The upper 26,991 acre-feet of storage space are reserved for flood control at all times, and an additional 66,000 acre-feet of space are reserved from April 15 through November 1. Non-project water may be stored in the reservoir under temporary contract. Native inflow can be stored when the project storage right is in priority or under the winter water storage program (WWSP).

Under the WWSP, irrigators are permitted to store native Arkansas River water in Pueblo Reservoir during the winter months for an additional supply of irrigation water, on the condition that the water is used before May 1 of the next water year. The majority of project water deliveries are made from the reservoir. The Fountain Valley Authority, the Pueblo West Metropolitan District, and the Pueblo Board of Water Works take direct delivery of municipal water through the south outlet works and joint-use manifold. A direct irrigation delivery is made to the Bessemer Ditch. Other project deliveries are made as releases to the Arkansas River for diversion downstream. Pueblo Reservoir is also operated to provide for recreation, wildlife habitat, and flood control.

III. HYDROLOGIC CONDITIONS AND WEATHER EVENTS IN WATER YEAR 2010

The weather around the Fryingpan River drainage area was relatively dry during water year 2010 (WY 2010). For the Ruedi Reservoir drainage area, the water year began with average precipitation which lasted through November 2009. Precipitation came down in the form of snow, which soon began to accumulate. The snowpack remained average until early December. The following few months turned out to be drier and colder, and the snowpack dropped below average. Wet weather did not return to the region until late in the spring. A series of winter storms kept the snowpack just below average for most of the winter and spring months. Despite the relatively dry winter, the available snowpack remained intact, thanks to cool temperatures in the high elevations and significant cloud cover during the early spring. Figure #1 compares the measured snowpack and the 30-year average snowpack for the Ruedi drainage area. The combined data from four snow telemetry (SNOTEL) stations were used for this graph.

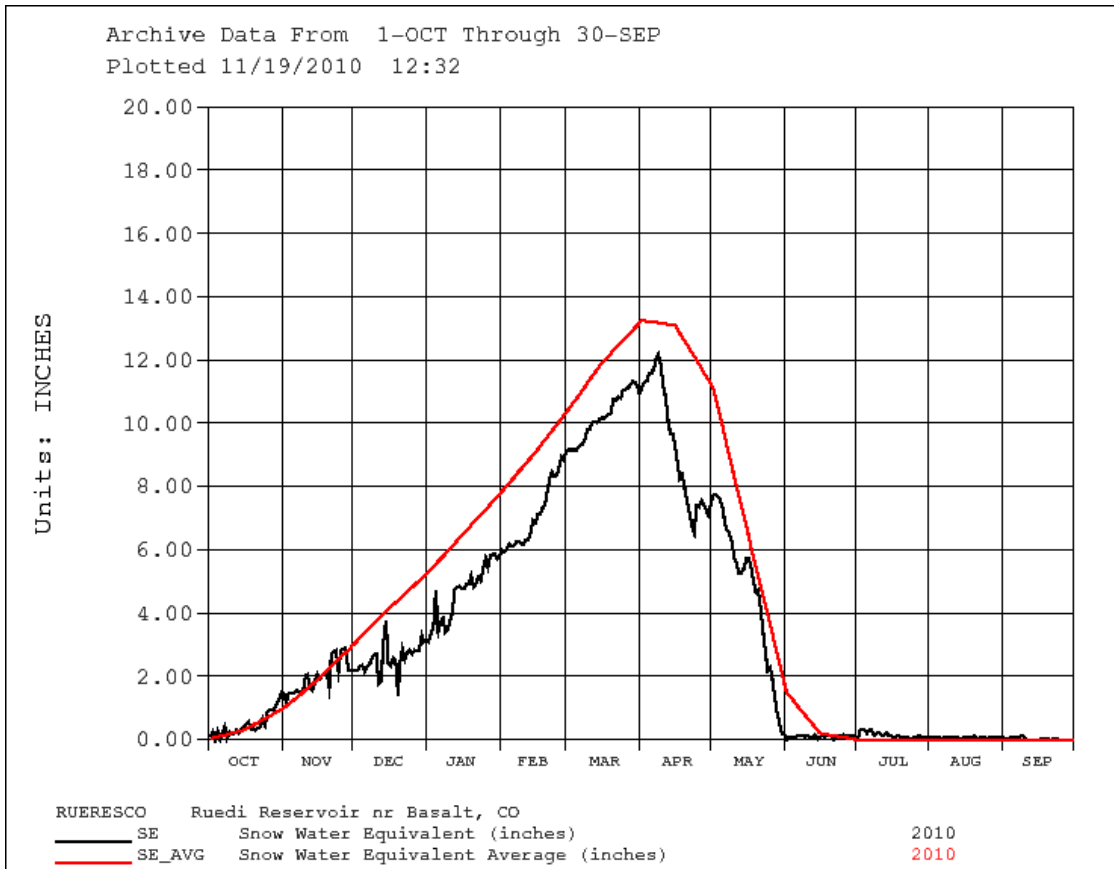


Figure #1: Snow-water equivalent versus the 30-year average snow-water equivalent for the Ruedi Reservoir drainage area. (Data provided by the Natural Resources Conservation Service)

Temperatures began to warm up during late May, but the snow in the higher elevations remained. Meanwhile, the snow in the lower reaches began to melt by the middle of May. By late in the month, the runoff was producing high inflows for Ruedi Reservoir. The Boustead Tunnel was also diverting at almost full capacity.

By early June, the inflow to Ruedi began to fall. The sudden drop created doubts about what once seemed like a certain physical fill for Ruedi in WY 2010. Inflow to Ruedi dropped several hundred cubic feet per second during the first week of June. According to the SNOTEL data for the Fryingpan River drainage, it appeared that the snowpack was finished for the year. Unknown to most forecasters, there was an abundance of snow in the upper reaches that had remained frozen and unmeasured. As temperatures rose to more seasonal levels during the second week of June, the runoff picked up once more. Within days, it had pushed Ruedi's inflow up by more than 1,000 cfs. It was a quick rise and even faster fall, but it pushed the reservoir level to the crest of the spillway. Releases through the outlet works were increased to 800 cfs. For several days, the water level and all the operations were closely monitored 24 hours a day. Figure #2 shows the average daily inflow computations for Ruedi Reservoir.

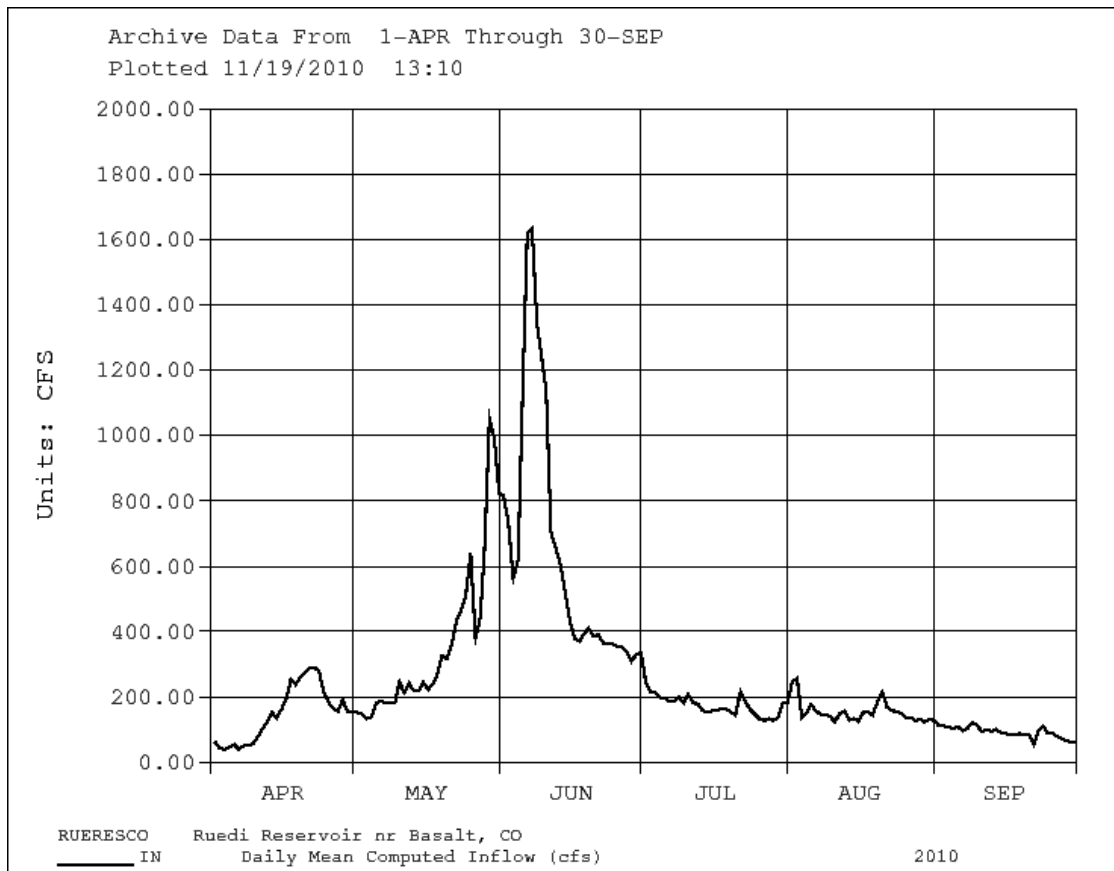


Figure #2: Average daily inflow for Ruedi Reservoir.

Inflow to Ruedi dropped rapidly after the high runoff of early June. By the end of June, the rainy season began. However, with all the snow gone, its impact on the inflow to Ruedi was minimal. The monsoonal showers continued through July and August. Figures #3 and #4 show the daily total precipitation at the Ruedi Dam and the Mormon Control House. The data collected by these two rain gages is used only for operational purposes and is representative solely of the rainfall patterns in the area.

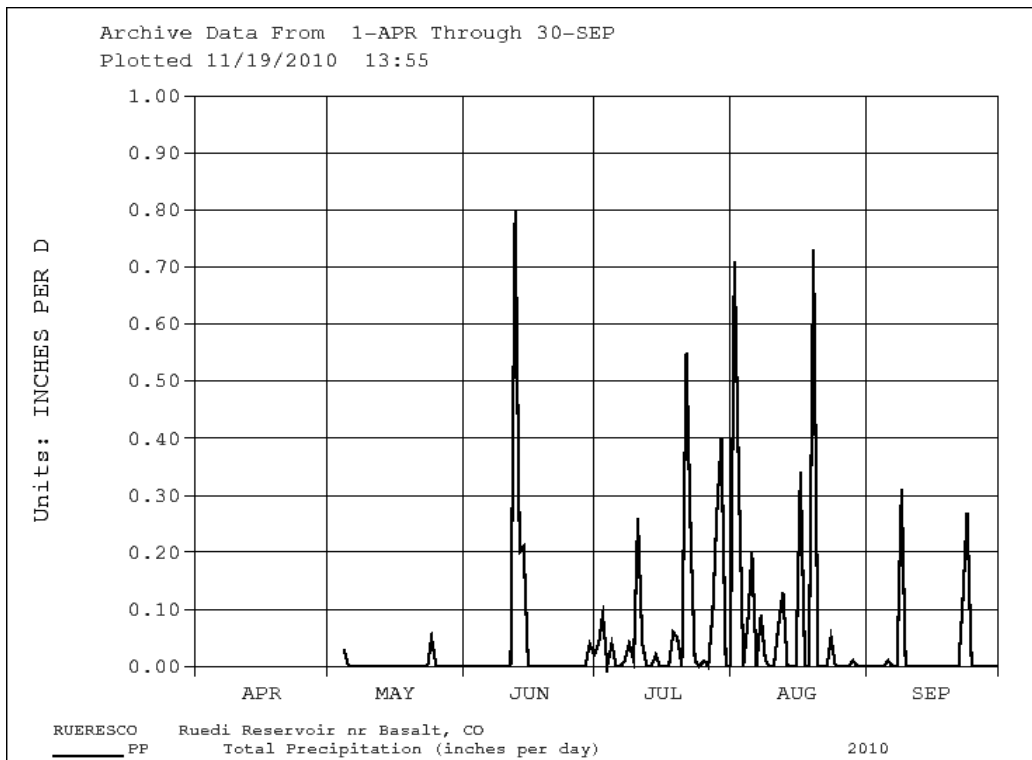


Figure #3; Daily precipitation totals at Ruedi Dam between April and September. (This is only operational data. Only liquid precipitation is measured.)

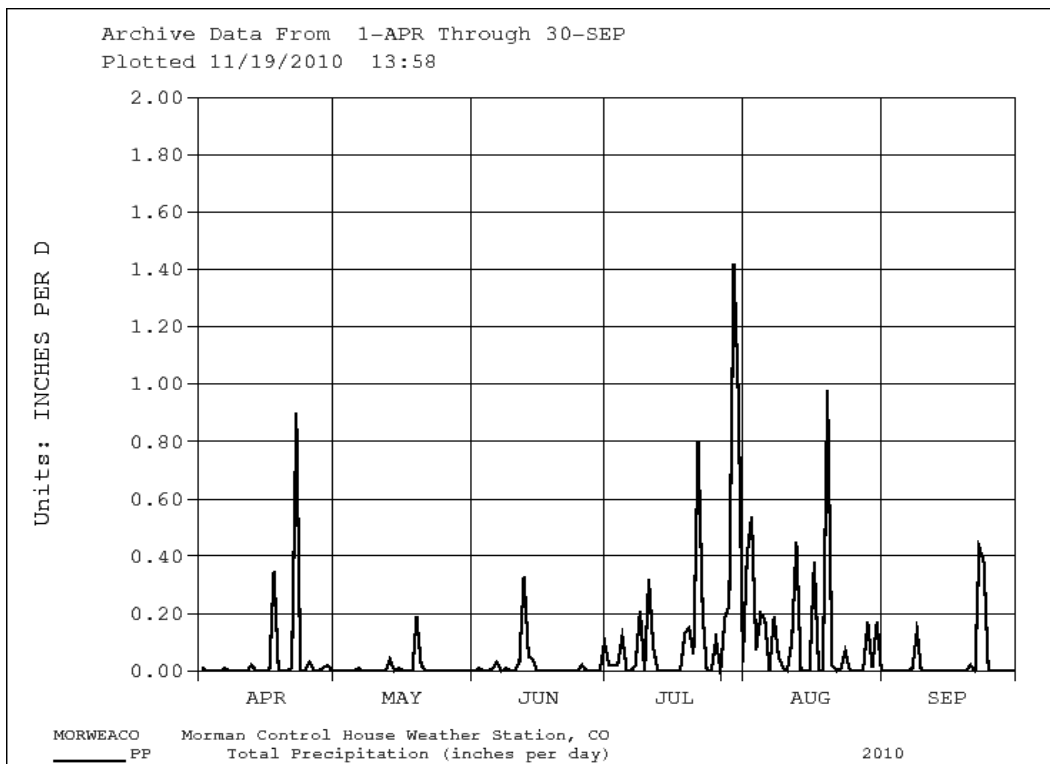


Figure #4: Daily precipitation totals at the Mormon Control House between April and September. (This is only operational data. Only liquid precipitation is measured.)

IV. REPORT ON OPERATIONS DURING WATER YEAR 2010

A. Ruedi Reservoir

Ruedi Reservoir began the water year with a storage content of 77,675 acre-feet, which is 79 percent of average. The releases for November were set at 75 cfs and remained at that rate until March. All of the releases during the winter and spring months were made using the city of Aspen's hydroelectric powerplant.

Precipitation over the Fryingpan River Basin was below average during the winter and spring. By April 1, the snow-water content in the basin was estimated at 11.80 inches, representing 81 percent of the 30-year average, which was significantly lower than the previous year. The April through July runoff forecast for Ruedi Reservoir was 121,000 acre-feet, or 90 percent of average. However, the below-average snowpack never improved during the spring. The low snowpack was not sufficient to support such a high volume. Also, thanks to the automation of operations for the Boustead Tunnel, the efficiency to divert water had improved significantly. Boustead Tunnel was kept at nearly full capacity during the peak of the runoff season, allowing less water to enter Ruedi Reservoir. By the end of July, the total volume of inflow for the period was 79,500 acre-feet.

Despite the runoff forecast for Ruedi, releases were kept at 75 cfs during April. By early May, there was doubt about Ruedi's participation in the Coordinated Reservoir Operations (CROS) for 2010. Releases were increased to 105 cfs to meet the required flow of 110 cfs at the gage below the dam. Later in May, it was determined that Ruedi could not participate in the CROS for 2010 if a physical fill was going to be achieved. As runoff continued to increase throughout May, the reservoir level kept rising, but very slowly. By the end of May, the reservoir elevation was only 7748.73 feet, more than 17 feet below the spillway crest.

With the reservoir at such a low level late in May and the low inflows during the first several weeks of spring, there was very little concern about any kind of flooding operations during WY 2010 at Ruedi Reservoir. Inflows remained relatively low through the beginning of June. By early June, there was some skepticism about the likelihood of a physical fill at Ruedi in 2010. But suddenly on June 5, the runoff jumped unexpectedly. A sudden rise in temperature triggered a surprising and dramatic rise in runoff. Within 6 days, the reservoir was full, and the high inflows had forced releases to be increased to 752 cfs. An alert level 1 was declared, which immediately increased surveillance around the dam 24 hours a day. The alert level 1 brought in participation from Pitkin County and officials from the city of Basalt. The reservoir remained at almost full capacity until late in July. Figure #5 shows the average daily releases from Ruedi for WY 2010. The releases were kept high until the reservoir level dropped one-half foot from the spillway crest. Releases were tapered down as the runoff continued to steadily fall.

Ruedi ended the water year with a water surface level of 7740.21 feet and 78,690 acre-feet in storage. That volume was 89 percent of average. Figure #6 shows a comparison between the midnight storage content for the reservoir during WY 2010 versus its average midnight storage content. The total cumulative precipitation for the year at Ruedi was 18.9 inches, or 85 percent of average.

The total volume of inflow for the water year was 109,800 acre-feet. Its highest release for the year took place on June 10 as the flow below the dam reached 762 cfs. There were no river calls from the 15-mile reach of the Colorado River on Ruedi Reservoir during WY 2010, and there were no contract water releases either. But, similar to previous years, the entire volume of fish water was utilized.

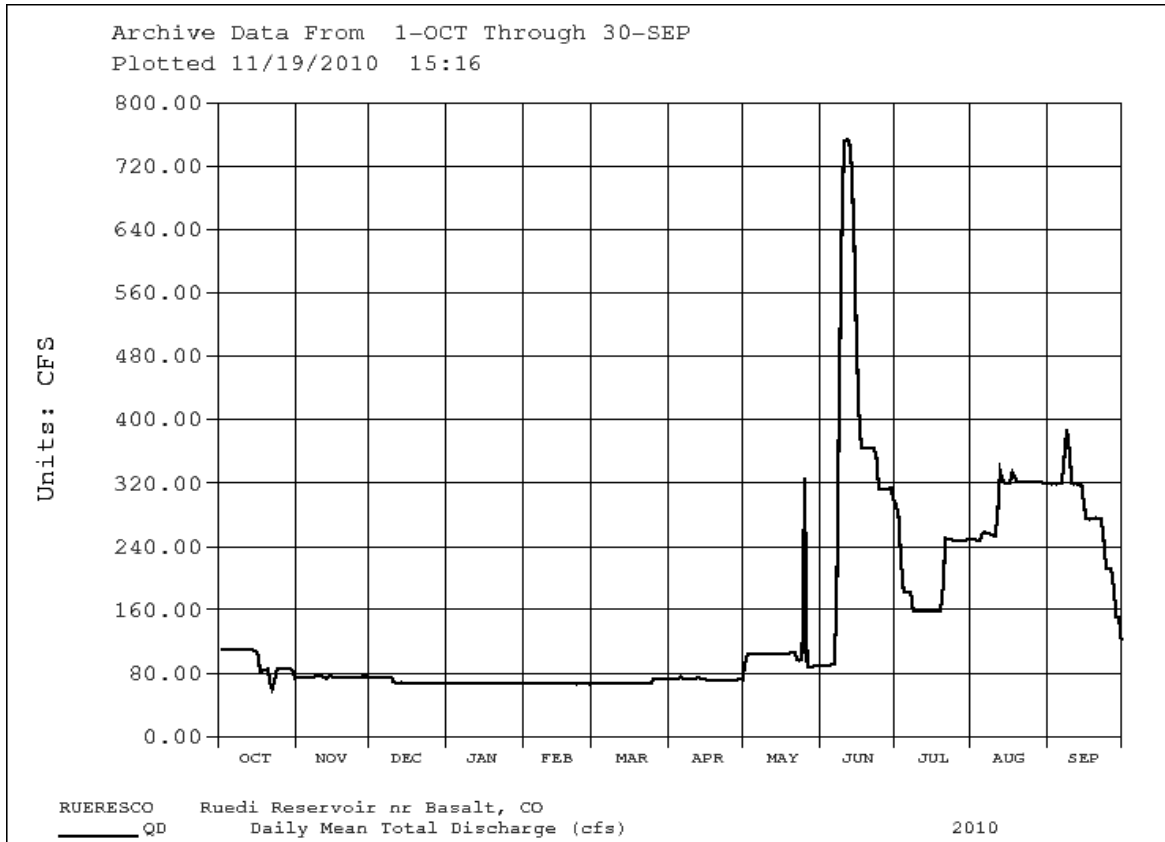


Figure #5: Ruedi daily average reservoir releases for WY 2010.

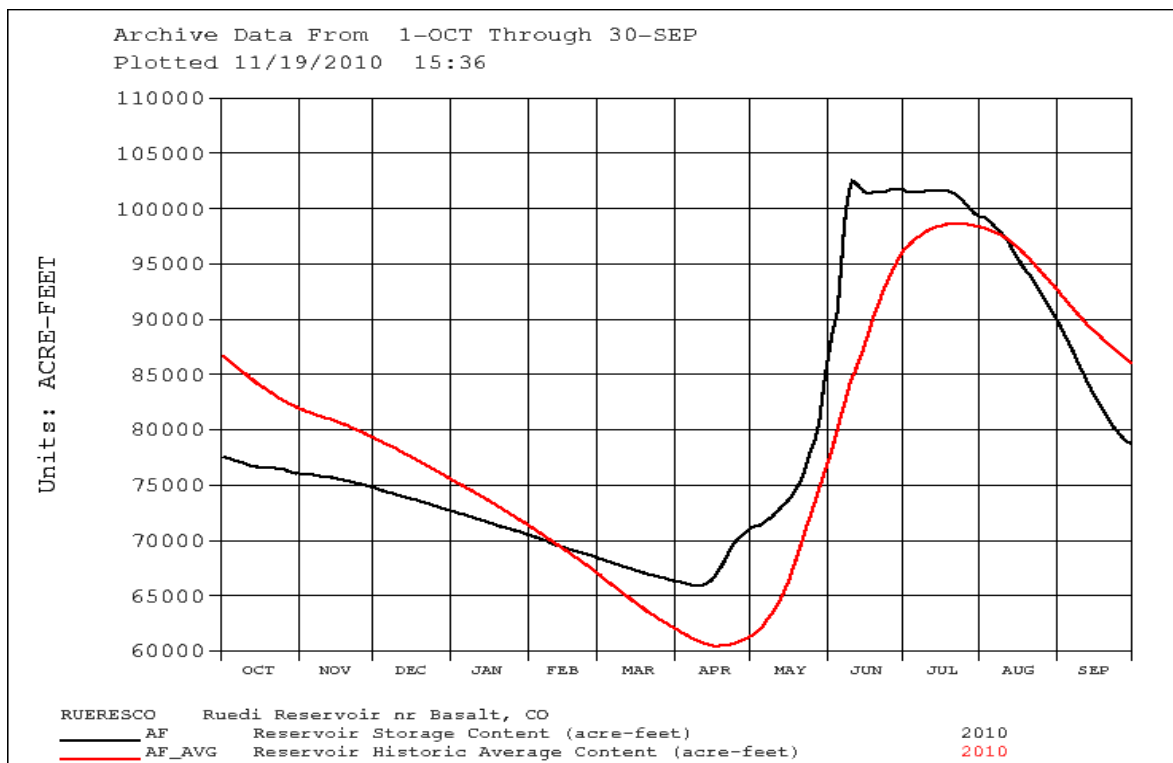


Figure #6: Daily midnight storage content for WY 2010 versus average daily midnight storage content for Ruedi Reservoir.

B. West Slope Collection System and Project Diversions

The import of project water through the Boustead Tunnel began on April 15, 2010, and concluded on August 23, 2010. The daily discharge record for the diversion structures is included as Appendix D. A total of 55,265 acre-feet was imported during the 2010 water year, which is 114 percent of average. There was no Busk-Ivanhoe water imported through the Boustead Tunnel. The maximum mean daily import was 956 cfs on June 9, 2010. The most probable forecasts for the first of February, March, April, and May were 58,500 acre-feet, 61,600 acre-feet, 51,800 acre-feet, and 56,500 acre-feet, respectively.

The total imports for the water year; the accumulated imports to the Arkansas River; the water used for the Twin Lakes Reservoir and Canal Company exchange; and the import water available for allocations by the Southeastern Colorado Water Conservancy District, are shown on Table 4. The 39 years of accumulated imports total 1,981,000 acre-feet, for an average of 50,795 acre-feet per year. A plot of the Boustead Tunnel imports during water year 2010 is shown on Exhibit 5.

C. Twin Lakes Reservoir and Canal Company/Fryingpan-Arkansas Project Exchange

The Bureau of Reclamation is obligated to maintain minimum stream flows in the Roaring Fork River by the authorizing legislation of the project. This is accomplished through an exchange of water with the Twin Lakes Reservoir and Canal Company. On October 1, 2009, the company began bypassing water into the Roaring Fork River on the west slope in exchange for project water stored in Twin Lakes on the east slope. The total amount of the exchange at Twin Lakes Reservoir was 2,980 acre-feet. The operating criteria and the monthly summary of the exchange are shown in Appendix C.

D. Turquoise Lake

On September 30, 2009, there were 120,900 acre-feet of water (elevation of 9864.60 feet) stored in Turquoise Lake, 106 percent of average. Releases made to Twin Lakes through the Mt. Elbert Conduit drafted Turquoise Lake to 58,831 acre-feet (elevation 9825.39 feet), the lowest storage of the water year, by May 14, 2010. There were 115,713 acre-feet of water (elevation 9861.62 feet) in storage at the end of the water year, 101 percent of average.

Homestake Tunnel imports totaled 8,999 acre-feet during the water year, 28 percent of average. Busk-Ivanhoe imports totaled 3,326 acre-feet, 64 percent of average, and were divided between the Pueblo Board of Water Works and the City of Aurora. Project water imports through the Boustead Tunnel totaled 55,265 acre-feet, 109 percent of average.

Exhibits 8 and 9 show the precipitation and pan evaporation at Turquoise Lake. Exhibits 5, 6, and 7 show the monthly imports through the Boustead, Homestake, and Busk-Ivanhoe Tunnels, respectively. Table 5 and Exhibit 10 depict the monthly operation of Turquoise Lake during the 2010 water year.

E. Mt. Elbert Conduit/Halfmoon Creek Diversion

During water year 2010, 88,844 acre-feet of water released from Turquoise Lake, and 13,499 acre-feet of water diverted from Halfmoon Creek, were conveyed through the Mt. Elbert Conduit to the Mt. Elbert Forebay, and subsequently to Twin Lakes through the Mt. Elbert Powerplant. An additional 3,909 acre-feet of water were released into the conduit from Turquoise Lake for use by the Leadville Federal Fish Hatchery. The water delivered to the hatchery was returned to the Arkansas River and stored in Pueblo Reservoir.

F. Twin Lakes/Mt. Elbert Forebay and Mt. Elbert Pumped-Storage Powerplant

The storage in Twin Lakes was 112,045 acre-feet of water (elevation 9188.55 feet) on September 30, 2009. The combined storage of Twin Lakes and the Mt. Elbert Forebay was 120,889 acre-feet.

Twin Lakes Reservoir releases to Lake Creek were made throughout the winter to pass the entire flow of the Mt. Elbert Conduit, and to transfer the project water stored in the reservoir to Pueblo Reservoir.

The native inflow was stored in the Twin Lakes Reservoir and Canal Company storage space from November 15 through March 15. A total of 31,313 acre-feet of project water was released to Lake Creek during this time. This water was released such that the flow in the Arkansas River at the Wellsville gage was maintained as close to the average October 15 to November 15 trout-spawning flow as possible. The combined reservoir and forebay water storage reached a low point of 114,279 acre-feet on December 5, 2009, and was at its high point of 137,184 acre-feet on July 17, 2010. A total of 7,255 acre-feet of project water was released to augment rafting flows in the Arkansas River during the period of July 1 to August 15.

At least one generating/pumping unit was available at the Mt. Elbert Powerplant throughout the 2010 water year. The capacity of one unit is greater than the capacity of the Mt. Elbert Conduit. A total of 233,681 megawatt-hours of energy was generated at the powerplant, with 727,526 acre-feet of water; 140,624 acre-feet came through the Mt. Elbert Conduit; and 562,007 acre-feet were first pumped to the Mt. Elbert Forebay from Twin Lakes during off-peak electric demand hours. Table 7 depicts the monthly powerplant operation for the 2010 water year.

G. Pueblo Reservoir

The water storage content of Pueblo Reservoir was 193,160 acre-feet (elevation 4865.13 feet) on September 30, 2009, 137 percent of average. Project water released from Turquoise Lake, through the Leadville Federal Fish Hatchery, and from Twin Lakes, was stored in Pueblo Reservoir through the winter and spring. A total of 50,012 acre-feet of native inflow was stored in the reservoir under the winter water storage program from November 15, 2009, through March 14, 2010. During the water year, 35,124 acre-feet of winter water and 13,999 acre-feet of winter water carryover were released, and 2,949 acre-feet evaporated. The reservoir reached a high point in storage of 267,017 acre-feet (elevation 4882.65 feet) on April 1, 2010. There were 187,079 acre-feet (elevation 4863.50 feet) in storage on September 30, 2010. This is 133 percent of average and 69,870 acre-feet less than a full conservation pool.

Table 8 and Exhibit 20 depict Pueblo Reservoir monthly operations during the 2010 water year. The 2009-10 winter water storage is shown on Exhibit 17, and the winter water releases are shown on Exhibit 18. The pan evaporation at the reservoir is shown on Exhibit 19.

H. Storage Contracts

There were eight contracts for storage of non-project water in project storage space on the east slope in effect in water year 2010. Six of those were long-term contracts: the Twin Lakes Reservoir and Canal Company for 54,452 acre-feet; the city of Colorado Springs for 17,416 acre-feet; the city of Aurora for 5,000 acre-feet; the Pueblo Board of Water Works for 5,000 acre-feet; Busk-Ivanhoe, Inc., for 10,000 acre-feet; and the Homestake Project for 30,000 acre-feet. There were two long-term, non-firm contracts: Pueblo Board of Water Works and city of Aurora. The remaining contracts were interim, one-year contracts for "if-and-when" storage space. Under "if-and-when" contracts, non-project water may be stored in project storage space as long as that storage space is not required for project water.

I. Project Water Sales and Deliveries

There were 44,000 acre-feet of Fryingpan-Arkansas Project water made available to the Southeastern Colorado Water Conservancy District during water year 2010. The district purchased 48,207 acre-feet and called for 36,160 acre-feet of project and project carryover water during the year. Evaporation reduced the project water in storage by 11,132 acre-feet. By the end of the water year (September 30, 2010), the district had 20,886 acre-feet of 2010 allocated water and 121,023 acre-feet of carryover water remaining in storage. Of the 36,160 acre-feet of project water released, 6,452 acre-feet were for municipal and industrial use, and 29,709 acre-feet were for irrigation. The monthly release of project water from Pueblo Reservoir is shown on Exhibit 21.

J. Reservoir Storage Allocation Data

Table 9 presents the reservoir storage allocations for the five project reservoirs.

K. Reservoir Evaporation and Precipitation

Tables 11 and 12 present the monthly average evaporation and precipitation at the four weather stations near project facilities. When an evaporation pan is not in service and a reservoir is not completely ice-covered, the daily water surface evaporation is computed using seasonal evaporation factors. Those factors are listed in Table 10. The assumption is that there is no evaporation from a reservoir water surface when ice completely covers the reservoir.

L. Flood Control Benefits

Releases from Ruedi Reservoir did not create any flooding downstream during WY 2010 thanks to a combination of adequate reservoir capacity, timely releases, and maximum diversions through the Boustead Tunnel. However, the U. S. Army Corps of Engineers estimated that the operations at Ruedi Reservoir during WY 2010 prevented a total of \$2,993,000 in potential flood damages. Since impoundment, Ruedi Reservoir has prevented a total of \$15,314,400 in potential flood damages.

The snowpack in the Arkansas River Basin was near average during WY 2010. A waiver was issued by the Corps of Engineers that provided a two-week extension on the use of the conservation pool at Pueblo Reservoir under certain conditions, which included: that the joint use pool would not be encroached upon by more than 10,000 acre-feet; that the snowpack in the Upper Arkansas Basin would not exceed 100 percent; and that the conditions of the Colorado Compact would still be met. The reservoir level for Pueblo Reservoir did not reach the flood pool from May to November, and the reservoir releases were always below levels that could cause economic damage.

Therefore, the Corps of Engineers has determined that Pueblo Reservoir did not directly prevent any flooding downstream during WY 2010. Table 13 shows the historic flood control benefits provided by Pueblo and Ruedi Dams.

Table 1

Ruedi Reservoir
Water Year 2010 Operations
Unit: 1,000 Acre-Feet

Year	Month	Inflow	Evaporation*	Outflow	End of Month Content	Water Surface Elevation (FEET)
2009	Sep				77.7	7739.00
	Oct	4.4	0	5.8	76.1	7737.07
	Nov	3.2	0	4.5	74.8	7735.57
	Dec	2.1	0	4.3	72.7	7732.93
2010	Jan	2.0	0	4.1	70.6	7730.21
	Feb	1.6	0	3.7	68.4	7727.49
	Mar	2.1	0	4.2	66.3	7724.72
	Apr	9.0	0	4.3	71.1	7730.87
	May	21.8	0.2	6.6	86.1	7748.73
	Jun	38.1	0.6	21.8	101.8	7765.42
	Jul	10.7	0.6	12.6	99.3	7762.87
	Aug	9.4	0.4	18.4	89.9	7753.00
	Sep	5.5	0.2	16.5	78.7	7740.21
Total		109.9	2.0	106.8		

FRYINGPAN-ARKANSAS PROJECT
 RUEDI RESERVOIR
 RELEASES FOR ENDANGERED FISH
 WATER YEAR 2010
 October-09

Table 2-1

DAY	DATE	ELEV. (FT)	STORAGE (AC-FT)	INFLOW (CFS)	EVAP. (CFS)	TOTAL	ROCKY	FRYINGPAN	RUEDI	REQUIRED	ENDANGERED	CUMULATIVE	PALISADE
						RESERVOIR RELEASE (CFS)	FORK CREEK (CFS)	RIVER GAGE BELOW DAM (CFS)	CALLED OUT? (1= YES) (0= NO)	MIN FLOW BELOW RUEDI w/o FISH REL (CFS)	FISH RELEASE (CFS)	FISH RELEASE (AC-FT)	GAGE (CFS)
FRI	10/1/2004	7,738.90	77,592	69	1	110	4	58	no	73	0	20,825	1,172
SAT	10/2/2004	7,738.79	77,500	65	1	110	4	54	no	69	0	20,825	1,213
SUN	10/3/2004	7,738.71	77,433	78	1	110	4	60	no	81	0	20,825	1,264
MON	10/4/2004	7,738.64	77,375	82	1	110	4	58	no	86	0	20,825	1,279
TUE	10/5/2004	7,738.55	77,300	74	1	110	4	61	no	77	0	20,825	1,320
WED	10/6/2004	7,738.46	77,225	73	1	110	4	61	no	77	0	20,825	1,370
THU	10/7/2004	7,738.37	77,150	73	1	110	4	62	no	77	0	20,825	1,383
FRI	10/8/2004	7,738.30	77,092	82	1	110	4	64	no	86	0	20,825	1,389
SAT	10/9/2004	7,738.22	77,025	78	1	110	4	63	no	81	0	20,825	1,400
SUN	10/10/2004	7,738.10	76,925	61	1	110	4	62	no	64	0	20,825	1,391
MON	10/11/2004	7,738.03	76,867	82	1	110	4	59	no	85	0	20,825	1,359
TUE	10/12/2004	7,737.92	76,776	65	1	110	4	57	no	69	0	20,825	1,333
WED	10/13/2004	7,737.83	76,701	73	1	109	4	58	no	77	0	20,825	1,286
THU	10/14/2004	7,737.83	76,701	110	1	109	4	68	no	110	0	20,825	1,291
FRI	10/15/2004	7,737.77	76,652	84	1	108	4	76	no	88	0	20,825	1,418
SAT	10/16/2004	7,737.73	76,619	89	1	104	4	71	no	93	0	20,825	1,482
SUN	10/17/2004	7,737.71	76,602	75	1	82	4	67	no	79	0	20,825	1,505
MON	10/18/2004	7,737.70	76,594	80	1	83	4	67	no	84	0	20,825	1,454
TUE	10/19/2004	7,737.68	76,578	77	1	84	4	69	no	81	0	20,825	1,424
WED	10/20/2004	7,737.68	76,578	86	1	85	5	69	no	92	0	20,825	1,440
THU	10/21/2004	7,737.66	76,561	61	1	68	23	67	no	83	0	20,825	1,461
FRI	10/22/2004	7,737.62	76,528	45	1	60	31	65	no	75	0	20,825	1,564
SAT	10/23/2004	7,737.59	76,503	61	1	72	18	63	no	79	0	20,825	1,573
SUN	10/24/2004	7,737.58	76,495	84	1	86	4	61	no	88	0	20,825	1,525
MON	10/25/2004	7,737.55	76,470	75	1	86	4	67	no	79	0	20,825	1,619
TUE	10/26/2004	7,737.48	76,412	58	1	86	4	53	no	62	0	20,825	1,428
WED	10/27/2004	7,737.28	76,246	4	1	86	4	63	no	8	0	20,825	1,441
THU	10/28/2004	7,737.25	76,222	75	1	86	4	60	no	78	0	20,825	1,483
FRI	10/29/2004	7,737.14	76,131	41	1	85	4	50	no	45	0	20,825	1,486
SAT	10/30/2004	7,737.08	76,081	59	1	83	4	55	no	63	0	20,825	1,473
SUN	10/31/2004	7,737.07	76,073	71	1	74	3	58	no	75	0	20,825	1,393
Averages		7,737.88	76742	71	1	95	6	62			0		1407
Totals (acft)				4340	80	5863	355	3820			0		86517

NOTES: Releases of water to support 15-Mile Reach target flows ceased on 9/24. A total of 20,825 acre-feet were released to support Recovery Program target flows in the 15-Mile Reach.

NOTES: The values presented in these tables were compiled from operational records.

NOTES: These are preliminary records and open to revision.

FRYINGPAN-ARKANSAS PROJECT
 RUEDI RESERVOIR
 RELEASES FOR ENDANGERED FISH
 WATER YEAR 2010
 April-10

Table 2-2

DAY	DATE	ELEV. (FT)	STORAGE (AC-FT)	INFLOW (CFS)	EVAP. (CFS)	TOTAL RESERVOIR RELEASE (CFS)	ROCKY FORK CREEK (CFS)	FRYINGPAN RIVER GAGE BELOW DAM (CFS)	RUEDI CALLED OUT? (1= YES) (0= NO)	REQUIRED MIN FLOW BELOW RUEDI w/o FISH REL (CFS)	ENDANGERED FISH RELEASE (CFS)	CUMULATIVE FISH RELEASE (AC-FT)	PALISADE GAGE (CFS)
THU	4/1/2010	7,724.70	66328	62	0	74	2	76	no	39	0	0	1950
FRI	4/2/2010	7,724.64	66280	43	0	73	2	75	no	39	0	0	2050
SAT	4/3/2010	7,724.55	66214	39	0	73	2	75	no	39	0	0	2130
SUN	4/4/2010	7,724.48	66158	46	0	73	2	75	no	39	0	0	1950
MON	4/5/2010	7,724.40	66098	54	0	73	2	75	no	39	0	0	1690
TUE	4/6/2010	7,724.36	66074	39	0	73	2	75	no	39	0	0	1520
WED	4/7/2010	7,724.31	66032	50	0	73	2	75	no	39	0	0	1340
THU	4/8/2010	7,724.23	65975	50	0	73	2	75	no	39	0	0	1340
FRI	4/9/2010	7,724.18	65937	58	0	73	3	76	no	39	0	0	1290
SAT	4/10/2010	7,724.17	65929	77	0	73	3	76	no	39	0	0	1180
SUN	4/11/2010	7,724.20	65955	100	0	73	3	77	no	39	0	0	1500
MON	4/12/2010	7,723.36	65415	123	0	74	4	77	no	39	0	0	1630
TUE	4/13/2010	7,724.48	66164	153	0	73	4	77	no	39	0	0	1870
WED	4/14/2010	7,724.65	66291	134	0	73	4	78	no	39	0	0	1820
THU	4/15/2010	7,724.85	66440	159	0	72	5	77	no	39	0	0	1620
FRI	4/16/2010	7,725.12	66643	192	0	71	5	76	no	39	0	0	1820
SAT	4/17/2010	7,725.54	66960	254	0	71	6	77	no	39	0	0	2200
SUN	4/18/2010	7,725.99	67299	237	0	71	6	77	no	39	0	0	2740
MON	4/19/2010	7,726.45	67650	259	0	71	7	78	no	39	0	0	2940
TUE	4/20/2010	7,726.98	68050	276	0	71	8	79	no	39	0	0	3050
WED	4/21/2010	7,727.50	68450	288	0	72	9	81	no	39	0	0	3420
THU	4/22/2010	7,728.14	68946	288	0	72	11	83	no	39	0	0	4210
FRI	4/23/2010	7,728.73	69401	278	0	72	12	84	no	39	0	0	4400
SAT	4/24/2010	7,729.18	69748	212	0	72	13	85	no	39	0	0	3430
SUN	4/25/2010	7,729.50	69996	181	0	72	12	84	no	39	0	0	2910
MON	4/26/2010	7,729.76	70198	162	0	73	11	83	no	39	0	0	2300
TUE	4/27/2010	7,729.97	70365	155	0	73	9	82	no	39	0	0	2120
WED	4/28/2010	7,730.22	70562	190	0	72	9	81	no	39	0	0	1950
THU	4/29/2010	7,730.46	70751	155	0	73	8	81	no	39	0	0	2310
FRI	4/30/2010	7,730.80	71017	155	0	72	8	80	no	39	0	0	2600
Averages		7,726.33	67578	149	0	72	6	78			0		2243
Totals (acft)				8869	0	4312	349	4661			0		133450

NOTES: Releases of water to support 15-Mile Reach target flows ceased on 9/24. A total of 20,825 acre-feet were released to support Recovery Program target flows in the 15-Mile Reach.
 NOTES: The values presented in these tables were compiled from operational records.
 NOTES: These are preliminary records and open to revision.

FRYINGPAN-ARKANSAS PROJECT
 RUEDI RESERVOIR
 RELEASES FOR ENDANGERED FISH
 WATER YEAR 2010
 May-10

Table 2-3

DAY	DATE	ELEV. (FT)	STORAGE (AC-FT)	INFLOW (CFS)	EVAP. (CFS)	TOTAL RESERVOIR RELEASE (CFS)	ROCKY FORK CREEK (CFS)	FRYINGPAN RIVER GAGE BELOW DAM (CFS)	RUEDI CALLED OUT? (1= YES) (0= NO)	REQUIRED MIN FLOW BELOW RUEDI w/o FISH REL (CFS)	ENDANGERED FISH RELEASE (CFS)	CUMULATIVE FISH RELEASE (AC-FT)	PALISADE GAGE (CFS)
THU	5/1/2009	7,730.98	71154	153	0	94	8	102	no	110	0	0	2250
FRI	5/2/2009	7,731.11	71258	148	0	105	8	113	no	110	0	0	1900
SAT	5/3/2009	7,731.18	71320	133	0	105	8	113	no	110	0	0	1690
SUN	5/4/2009	7,731.26	71382	140	3	105	8	113	no	110	0	0	1540
MON	5/5/2009	7,726.35	66958	180	3	105	8	113	no	110	0	0	1490
TUE	5/6/2009	7,731.60	71646	188	3	105	8	113	no	110	0	0	1450
WED	5/7/2009	7,731.79	71801	180	3	105	8	113	no	110	0	0	1480
THU	5/8/2009	7,731.97	71944	184	3	105	8	113	no	110	0	0	1450
FRI	5/9/2009	7,732.15	72087	181	3	105	8	114	no	110	0	0	1380
SAT	5/10/2009	7,732.43	72308	245	3	106	8	114	no	110	0	0	1540
SUN	5/11/2009	7,732.71	72530	213	3	106	9	114	no	110	0	0	1950
MON	5/12/2009	7,733.03	72789	241	3	105	9	114	no	110	0	0	2010
TUE	5/13/2009	7,733.32	73018	217	3	105	10	115	no	110	0	0	2050
WED	5/14/2009	7,733.58	73231	218	3	105	10	115	no	110	0	0	2050
THU	5/15/2009	7,733.89	73482	246	3	105	10	115	no	110	0	0	2110
FRI	5/16/2009	7,734.20	73729	222	4	105	9	114	no	110	0	0	2220
SAT	5/17/2009	7,734.50	73973	239	4	105	9	114	no	110	0	0	2330
SUN	5/18/2009	7,734.86	74268	271	4	105	10	115	no	110	0	0	2520
MON	5/19/2009	7,735.33	74649	326	4	106	10	116	no	110	0	0	3270
TUE	5/20/2009	7,735.83	75057	316	4	107	12	118	no	110	0	0	3800
WED	5/21/2009	7,736.38	75505	358	4	107	13	120	no	110	0	0	4170
THU	5/22/2009	7,737.09	76093	433	4	97	19	116	no	110	0	0	5710
FRI	5/23/2009	7,737.92	76779	467	4	97	28	125	no	110	0	0	6930
SAT	5/24/2009	7,738.88	77578	508	4	97	34	130	no	110	0	0	7730
SUN	5/25/2009	7,739.71	78269	640	4	86	27	113	no	110	0	0	7980
MON	5/26/2009	7,740.41	78856	380	4	87	26	113	no	110	0	0	6700
TUE	5/27/2009	7,741.14	79474	441	4	87	29	116	no	110	0	0	7100
WED	5/28/2009	7,742.19	80372	660	4	87	36	124	no	110	0	0	9300
THU	5/29/2009	7,744.04	81958	1052	4	89	47	136	no	110	0	0	13300
FRI	5/30/2009	7,746.22	83858	991	4	89	49	138	no	110	0	0	16300
SAT	5/31/2009	7,748.00	85433	822	4	90	45	135	no	110	0	0	15700
Averages		7,735.61	74928	355	3	100	17	117			0		4561
Totals (acft)				21802	197	6160	1053	7212			0		280467

NOTES: Releases of water to support 15-Mile Reach target flows ceased on 9/24. A total of 20,825 acre-feet were released to support Recovery Program target flows in the 15-Mile Reach.
 NOTES: The values presented in these tables were compiled from operational records.
 NOTES: These are preliminary records and open to revision.

FRYINGPAN-ARKANSAS PROJECT
 RUEDI RESERVOIR
 RELEASES FOR ENDANGERED FISH
 WATER YEAR 2010
 June-10

Table 2-4

DAY	DATE	ELEV. (FT)	STORAGE (AC-FT)	INFLOW (CFS)	EVAP. (CFS)	TOTAL	ROCKY	FRYINGPAN	RUEDI	REQUIRED	ENDANGERED FISH RELEASE (CFS)	CUMULATIVE FISH RELEASE (AC-FT)	PALISADE GAGE (CFS)
						RESERVOIR RELEASE (CFS)	FORK CREEK (CFS)	RIVER GAGE BELOW DAM (CFS)	CALLED OUT? (1= YES) (0= NO)	MIN FLOW BELOW RUEDI w/o FISH REL (CFS)			
THU	6/1/2009	7,749.61	86,863	817	10	90	44	134	no	110	0	0	14,700
FRI	6/2/2009	7,751.12	88,223	733	10	90	41	131	no	110	0	0	13,700
SAT	6/3/2009	7,752.24	89,244	564	10	90	39	128	no	110	0	0	12,100
SUN	6/4/2009	7,753.25	90,164	617	10	90	38	128	no	110	0	0	11,800
MON	6/5/2009	7,754.96	91,749	1,163	10	91	44	134	no	110	0	0	14,400
TUE	6/6/2009	7,757.80	94,406	1,618	10	92	49	142	no	110	0	0	19,000
WED	6/7/2009	7,760.92	97,388	1,633	10	154	54	208	no	110	0	0	22,000
THU	6/8/2009	7,763.48	99,882	1,343	10	405	56	460	no	110	0	0	23,800
FRI	6/9/2009	7,764.86	101,245	1,234	11	626	53	679	no	110	0	0	24,500
SAT	6/10/2009	7,765.95	102,320	1,139	11	752	50	802	no	110	0	0	23,300
SUN	6/11/2009	7,766.09	102,466	704	11	753	45	798	no	110	0	0	21,900
MON	6/12/2009	7,765.86	102,234	654	11	754	42	796	no	110	0	0	18,800
TUE	6/13/2009	7,765.63	102,010	603	11	718	40	758	no	110	0	0	17,100
WED	6/14/2009	7,765.39	101,769	523	11	627	37	664	no	110	0	0	15,900
THU	6/15/2009	7,765.19	101,564	432	11	516	33	550	no	110	0	0	14,100
FRI	6/16/2009	7,765.05	101,429	379	11	412	31	443	no	110	0	0	11,900
SAT	6/17/2009	7,765.02	101,393	370	11	365	29	394	no	110	0	0	10,600
SUN	6/18/2009	7,765.03	101,405	395	11	364	27	392	no	110	0	0	9,460
MON	6/19/2009	7,765.09	101,466	409	11	364	26	389	no	110	0	0	8,790
TUE	6/20/2009	7,765.14	101,513	385	11	365	24	389	no	110	0	0	8,670
WED	6/21/2009	7,765.16	101,539	389	11	364	23	387	no	110	0	0	8,610
THU	6/22/2009	7,765.16	101,540	365	11	365	21	386	no	110	0	0	8,200
FRI	6/23/2009	7,765.14	101,517	363	11	353	20	372	no	110	0	0	7,620
SAT	6/24/2009	7,765.20	101,574	363	11	312	18	330	no	110	0	0	7,070
SUN	6/25/2009	7,765.26	101,639	352	11	312	17	329	no	110	0	0	6,720
MON	6/26/2009	7,765.32	101,701	353	11	312	17	329	no	110	0	0	6,460
TUE	6/27/2009	7,765.38	101,754	338	11	312	16	328	no	110	0	0	6,250
WED	6/28/2009	7,765.38	101,754	308	11	313	15	328	no	110	0	0	5,870
THU	6/29/2009	7,765.35	101,727	329	11	313	14	328	no	110	0	0	5,320
FRI	6/30/2009	7,765.40	101,774	335	11	300	15	315	no	110	0	0	4,880
Averages		7,762.68	99,175.07	640.36	10.37	365.75	32.56	398.31			0.00		12,784.00
Totals (acft)				38,105	617	21,764	1,938	23,701			0		760,712

NOTES: Releases of water to support 15-Mile Reach target flows ceased on 9/24. A total of 20,825 acre-feet were released to support Recovery Program target flows in the 15-Mile Reach.
 NOTES: The values presented in these tables were compiled from operational records.
 NOTES: These are preliminary records and open to revision.

FRYINGPAN-ARKANSAS PROJECT
 RUEDI RESERVOIR
 RELEASES FOR ENDANGERED FISH
 WATER YEAR 2010
 July-10

Table 2-5

DAY	DATE	ELEV. (FT)	STORAGE (AC-FT)	INFLOW (CFS)	EVAP. (CFS)	TOTAL	ROCKY	FRYINGPAN	RUEDI	REQUIRED	ENDANGERED	CUMULATIVE	PALISADE GAGE (CFS)
						RESERVOIR RELEASE (CFS)	FORK CREEK (CFS)	RIVER GAGE BELOW DAM (CFS)	CALLED OUT? (1= YES) (0= NO)	MIN FLOW BELOW RUEDI w/o FISH REL (CFS)	FISH RELEASE (CFS)	FISH RELEASE (AC-FT)	
THU	7/1/2009	7765.37	101742	242	9	293	14	306	no	110	0	0	4480
FRI	7/2/2009	7765.21	101583	217	9	277	13	290	no	110	0	0	4280
SAT	7/3/2009	7765.13	101511	214	9	220	12	232	no	110	0	0	4200
SUN	7/4/2009	7765.13	101506	197	9	182	12	194	no	110	0	0	3920
MON	7/5/2009	7765.14	101513	197	9	182	11	193	no	110	0	0	3580
TUE	7/6/2009	7765.14	101515	187	9	182	10	193	no	110	0	0	3210
WED	7/7/2009	7765.14	101512	187	9	182	10	192	no	110	0	0	2750
THU	7/8/2009	7765.13	101508	199	9	174	10	183	no	110	0	0	2330
FRI	7/9/2009	7765.17	101548	183	9	158	10	168	no	110	0	0	2200
SAT	7/10/2009	7765.21	101590	208	9	158	9	168	no	110	0	0	2260
SUN	7/11/2009	7765.27	101649	182	9	158	9	167	no	110	0	0	2210
MON	7/12/2009	7765.30	101679	178	9	158	9	167	no	110	0	0	2270
TUE	7/13/2009	7765.30	101679	158	9	158	9	167	no	110	0	0	2170
WED	7/14/2009	7765.28	101656	153	9	158	8	167	no	110	0	0	2080
THU	7/15/2009	7765.26	101633	157	9	158	8	166	no	110	0	0	1800
FRI	7/16/2009	7765.23	101607	158	9	158	8	166	no	110	0	0	1600
SAT	7/17/2009	7765.22	101596	163	9	158	8	166	no	110	0	0	1370
SUN	7/18/2009	7765.20	101581	163	9	159	7	166	no	110	0	0	1150
MON	7/19/2009	7765.19	101562	153	9	159	7	166	no	110	0	0	997
TUE	7/20/2009	7765.13	101511	143	9	189	7	196	no	110	33	65	840
WED	7/21/2009	7765.01	101389	215	9	251	7	257	no	110	35	136	779
THU	7/22/2009	7764.90	101283	188	9	249	7	256	no	110	60	255	1050
FRI	7/23/2009	7764.74	101124	163	9	249	7	255	no	110	85	424	1340
SAT	7/24/2009	7764.54	100921	148	9	248	7	255	no	110	100	623	1300
SUN	7/25/2009	7764.30	100685	133	9	247	7	254	no	110	115	851	1240
MON	7/26/2009	7764.04	100433	128	9	247	7	254	no	110	120	1089	1130
TUE	7/27/2009	7763.78	100171	133	9	247	7	254	no	110	114	1316	1090
WED	7/28/2009	7763.52	99920	128	9	247	7	254	no	110	119	1552	1140
THU	7/29/2009	7763.28	99679	138	9	247	7	254	no	110	109	1769	1150
FRI	7/30/2009	7763.09	99499	184	9	249	7	255	no	110	65	1897	1180
SAT	7/31/2009	7762.95	99362	184	9	249	7	255	no	110	65	2026	1290
Averages		7764.78	101166	173	9	205	9	213			33		2012
Totals (acft)				10668	580	12599	524	13123			2026		123743

NOTES: Releases of water to support 15-Mile Reach target flows ceased on 9/30. A total of 20,825 acre-feet were released to support Recovery Program target flows in the 15-Mile Reach.

NOTES: The values presented in these tables were compiled from operational records.

NOTES: These are preliminary records and open to revision.

FRYINGPAN-ARKANSAS PROJECT
 RUEDI RESERVOIR
 RELEASES FOR ENDANGERED FISH
 WATER YEAR 2010
 August-10

Table 2-6

DAY	DATE	ELEV. (FT)	STORAGE (AC-FT)	INFLOW (CFS)	EVAP. (CFS)	TOTAL RESERVOIR RELEASE (CFS)	ROCKY FORK CREEK (CFS)	FRYINGPAN RIVER GAGE BELOW DAM (CFS)	RUEDI CALLED OUT? (1= YES) (0= NO)	REQUIRED MIN FLOW BELOW RUEDI w/o FISH REL (CFS)	ENDANGERED FISH RELEASE (CFS)	CUMULATIVE FISH RELEASE (AC-FT)	PALISADE GAGE (CFS)
SUN	8/1/2004	7762.83	99240	246	7	249	7	256	no	110	3	2031	1430
MON	8/2/2004	7762.84	99257	256	7	249	7	256	no	110	0	2031	1210
TUE	8/3/2004	7762.73	99144	136	7	248	7	255	no	110	112	2253	1740
WED	8/4/2004	7762.49	98914	151	7	247	8	255	no	110	97	2445	1790
THU	8/5/2004	7762.29	98719	175	7	257	8	265	no	110	82	2606	1740
FRI	8/6/2004	7762.11	98540	156	7	258	8	265	no	110	102	2808	1810
SAT	8/7/2004	7761.86	98299	146	7	257	9	266	no	110	111	3028	1870
SUN	8/8/2004	7761.63	98074	145	7	255	10	265	no	110	110	3247	1910
MON	8/9/2004	7761.39	97837	139	7	254	10	264	no	110	115	3476	1650
TUE	8/10/2004	7761.12	97584	123	7	253	11	263	no	110	131	3735	1460
WED	8/11/2004	7760.85	97322	150	7	280	11	291	no	110	130	3991	1350
THU	8/12/2004	7760.50	96979	157	7	334	8	343	no	110	158	4305	1260
FRI	8/13/2004	7760.12	96619	128	7	320	5	325	no	110	193	4687	1270
SAT	8/14/2004	7759.72	96231	133	7	319	5	324	no	110	186	5056	1270
SUN	8/15/2004	7759.30	95833	123	7	319	5	324	no	110	196	5444	1070
MON	8/16/2004	7758.90	95448	153	7	319	5	324	no	110	166	5774	988
TUE	8/17/2004	7758.54	95102	153	7	334	5	339	no	110	180	6131	1040
WED	8/18/2004	7758.14	94729	144	6	328	5	333	no	110	185	6498	1070
THU	8/19/2004	7757.77	94381	186	6	323	5	327	no	110	136	6768	1130
FRI	8/20/2004	7757.53	94150	214	6	322	5	327	no	110	108	6982	1330
SAT	8/21/2004	7757.24	93876	167	6	322	5	327	no	110	155	7290	2000
SUN	8/22/2004	7756.89	93545	158	6	322	5	327	no	110	164	7616	1630
MON	8/23/2004	7756.51	93195	154	6	322	5	327	no	110	169	7950	1420
TUE	8/24/2004	7756.15	92850	149	6	322	5	327	no	110	173	8293	1250
WED	8/25/2004	7755.75	92481	135	6	322	5	327	no	110	186	8663	1160
THU	8/26/2004	7755.34	92099	136	6	322	4	326	no	110	186	9032	1090
FRI	8/27/2004	7754.92	91709	127	6	322	4	326	no	110	194	9417	1060
SAT	8/28/2004	7754.49	91313	132	6	321	4	325	no	110	190	9794	1060
SUN	8/29/2004	7754.06	90916	123	6	321	4	325	no	110	198	10187	1040
MON	8/30/2004	7753.63	90519	131	6	320	4	324	no	110	188	10561	1060
TUE	8/31/2004	7753.21	90130	127	6	320	4	323	no	110	193	10943	1060
Averages		7758.74	95324	153	7	299	6	305			145		1362
Totals (acft)				9423	401	18374	374	18747			8918		83739

NOTES: Releases of water to support 15-Mile Reach target flows ceased on 9/24. A total of 20,825 acre-feet were released to support Recovery Program target flows in the 15-Mile Reach.
 NOTES: The values presented in these tables were compiled from operational records.
 NOTES: These are preliminary records and open to revision.

FRYINGPAN-ARKANSAS PROJECT
 RUEDI RESERVOIR
 RELEASES FOR ENDANGERED FISH
 WATER YEAR 2010
 September-10

Table 2-7

DAY	DATE	ELEV. (FT)	STORAGE (AC-FT)	INFLOW (CFS)	EVAP. (CFS)	TOTAL RELEASE (CFS)	ROCKY FORK CREEK (CFS)	FRYINGPAN RIVER GAGE BELOW DAM (CFS)	RUEDI CALLED OUT? (1= YES) (0= NO)	REQUIRED MIN FLOW BELOW RUEDI w/o FISH REL (CFS)	ENDANGERED FISH RELEASE (CFS)	CUMULATIVE FISH RELEASE (AC-FT)	PALISADE GAGE (CFS)
WED	9/1/2004	7,752.76	89720	111	4	320	4	323	no	110	208	11356	1030
THU	9/2/2004	7,752.30	89300	111	4	319	4	323	no	110	208	11768	923
FRI	9/3/2004	7,751.83	88874	108	4	319	3	323	yes	110	205	12175	839
SAT	9/4/2004	7,751.37	88448	103	4	319	3	323	yes	107	202	12575	771
SUN	9/5/2004	7,750.89	88017	108	4	319	3	322	yes	110	199	12970	685
MON	9/6/2004	7,750.39	87564	96	4	319	3	322	yes	99	201	13369	667
TUE	9/7/2004	7,749.87	87104	103	4	353	3	356	yes	106	235	13835	644
WED	9/8/2004	7,749.28	86575	121	4	388	3	391	yes	110	256	14343	729
THU	9/9/2004	7,748.69	86048	113	4	361	3	364	yes	110	236	14811	975
FRI	9/10/2004	7,748.17	85579	95	4	319	4	323	yes	98	207	15221	1030
SAT	9/11/2004	7,747.66	85133	99	4	319	4	323	no	103	213	15643	1010
SUN	9/12/2004	7,747.16	84685	95	4	318	4	322	no	98	212	16063	971
MON	9/13/2004	7,746.65	84239	100	4	318	4	322	no	103	212	16484	957
TUE	9/14/2004	7,746.14	83787	92	4	319	4	322	no	96	212	16904	926
WED	9/15/2004	7,745.63	83345	89	4	292	3	296	no	92	186	17272	926
THU	9/16/2004	7,745.19	82958	84	4	274	3	277	no	87	167	17604	866
FRI	9/17/2004	7,744.75	82576	85	4	274	3	277	no	88	167	17935	823
SAT	9/18/2004	7,744.31	82194	86	4	275	3	278	no	89	168	18268	800
SUN	9/19/2004	7,743.86	81807	83	4	276	3	278	no	86	168	18602	794
MON	9/20/2004	7,743.41	81420	84	4	276	3	279	no	87	169	18937	766
TUE	9/21/2004	7,742.97	81035	55	4	276	3	279	no	58	169	19272	744
WED	9/22/2004	7,742.52	80654	94	4	276	3	279	no	96	144	19557	837
THU	9/23/2004	7,742.13	80322	110	4	249	3	251	no	110	114	19783	1230
FRI	9/24/2004	7,741.83	80062	86	4	212	3	215	no	89	105	19990	1090
SAT	9/25/2004	7,741.53	79805	86	4	212	3	214	no	89	104	20197	1040
SUN	9/26/2004	7,741.21	79540	79	4	212	3	215	no	81	105	20405	992
MON	9/27/2004	7,740.90	79275	71	4	186	3	189	no	74	79	20563	978
TUE	9/28/2004	7,740.67	79083	65	4	151	3	154	no	68	44	20651	953
WED	9/29/2004	7,740.46	78902	61	4	151	3	154	no	64	44	20738	880
THU	9/30/2004	7,740.27	78740	61	4	121	3	123	no	63	44	20826	859
Averages		7,745.83	83560	91	4	277	3	281			166		891
Totals (acft)				5422	217	16508	186	16694			9882		53029

NOTES: Releases of water to support 15-Mile Reach target flows ceased on 9/24. A total of 20,825 acre-feet were released to support Recovery Program target flows in the 15-Mile Reach.
 NOTES: The values presented in these tables were compiled from operational records.
 NOTES: These are preliminary records and open to revision.

Table 3

Fryingpan-Arkansas Project
Transmountain Diversions
Water Year 2010
Unit: Acre-Feet

<u>Diversion</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Total</u>
No Name	16	730	1396	8			2150
Hunter	22	1127	2247	65			3461
Sawyer	20	516	1928	567	232		3263
Midway	22	916	2521	125			3584
Chapman ¹	140	888	2922	80			4030
South Fork	10	1652	5367	674			7703
Subtotal	230	5829	16381	1519	232		24191
Carter	56	815	2091	286	89		3337
North Fork		121	444	36			601
Mormon	22	688	2249	153	75		3187
N. Cunningham	16	436	1182	36			1670
M. Cunningham ²	14	464	1422	75			1975
Ivanhoe	230	1531	4320	329	38		6448
Lily Pad		323	692	48			1063
Granite		397	1210				1607
Fryingpan	115	3065	7420	478	458		11536
Subtotal	453	7840	21030	1441	660		31424
Total	683	13669	37411	2960	892		55615
Boustead Tunnel ³	1036 ⁴	13416	36505	3086	1216		55265

¹ Does not include No Name, Hunter, Sawyer and Midway

² Includes South Cunningham

³ The difference between total diversion and Charles H. Boustead Tunnel results from the accuracy limitations of the measurement.

⁴ Includes minimal flow from October through December 2009.

Table 4

Fryingpan-Arkansas Project Imports
 Charles H. Boustead Tunnel Outlet
 Unit: 1,000 Acre-feet

<u>Year</u>	<u>Imports</u>	<u>Accumulated Imports</u>	<u>Twin Lakes Exchange</u>	<u>Available for Allocations</u>
1972	32.0	32.0	0	0.0
1973	36.8	68.8	0	16.0
1974	34.1	102.9	0	18.6
1975	37.2	140.1	0	25.0
1976	26.9	167.0	0	24.0
1977	11.4	178.4	0	25.0
1978	49.2	227.6	0	25.0
1979	53.7	281.3	0	25.6
1980	55.7	337.0	0	70.0
1981	34.6	371.6	0	25.0
1982	75.2	446.8	2.7	68.0
1983	90.8 ⁴	537.6	0.3	125.0
1984	110.1	647.7	1.9	210.0
1985	70.2	717.9	1.7	289.9
1986	30.3	748.2	1.5	300.3
1987	2.2	750.4	1.1	288.0
1988	13.4	763.8	2.0	247.8
1989	36.2	800.0	1.7	197.6
1990	46.6	846.6	1.7	142.1
1991	59.1	905.7	1.5	58.7
1992	54.8	960.5	1.2	32.9
1993	86.6	1,047.1	2.3	70.1
1994	52.2	1,099.3	1.3	51.7
1995	90.5	1,189.8	2.3	55.0
1996	36.9	1,226.7	1.8	110.0
1997	78.6	1,305.3	1.8	116.0
1998	51.3	1,356.6	2.6	102.0
1999	40.8	1,397.4	2.1	127.5
2000	44.8	1,442.2	1.7	171.6
2001	45.3	1,487.5	2.1	67.5
2002	13.2	1,500.7	1.5	8.5
2003	54.9	1,555.6	2.4	37.5
2004	27.4	1,583.0	1.3	15.3
2005	54.6	1,637.6	3.0	40.8
2006	61.2	1,698.8	3.0	49.2
2007	54.2	1,753.0	3.0	40.4
2008	90.0	1,843.0	3.0	83.0
2009	82.7	1,925.7	3.0	78.0
2010	56.5	1,982.2	3.0	44.0

Restriction: Not to exceed 120,000 acre-feet in 1 year but not to exceed 2,352,800 acre-feet in 34 consecutive years.

⁴ Includes 3,120 acre-feet imported through Twin Lakes Tunnel

Turquoise Lake
Water Year 2010 Operations
Unit: 1,000 Acre-Feet

Table 5

		Inflow									
Year	Month	Busk-Ivanhoe Imports		Homestake Imports	Project Imports	Native Inflow	Total Inflow	Evap	Total Outflow	End of Month Content	Water Surface Elevation (FEET)
		Through Carlton	Through Boustead								
2009	Sep									120.9	9864.60
	Oct	0.1	0	0	0.2	1.3	1.6	0.4	15.0	107.1	9856.58
	Nov	0.1	0	0	0.1	0	0.2	0.2	1.0	106.1	9856.02
	Dec	0.1	0	0	0	1.6	1.7	0	21.8	86.0	9843.74
2010	Jan	0	0	0	0	1.6	1.6	0	17.6	70.0	9833.34
	Feb	0	0	0	0	0.7	0.7	0	4.6	66.1	9830.63
	Mar	0	0	0	0	0.6	0.6	0	5.2	61.5	9827.36
	Apr	0.1	0	0	0.8	1.7	2.6	0	4.0	60.1	9826.33
	May	0.8	0	0	13.4	6.3	20.5	0.3	5.6	74.8	9836.53
	Jun	1.6	0	4.0	36.5	12.0	54.1	0.8	9.8	118.3	9863.12
	Jul	0.3	0	0	3.1	3.1	6.5	0.7	12.4	111.7	9859.29
	Aug	0.1	0	4.2	1.2	1.1	6.6	0.5	1.5	116.3	9861.97
	Sep	0.1	0	0.8	0	0.2	1.1	0.7	1.0	115.7	9861.62
Subtotal		3.3	0								
Total		3.3		9.0	55.3	30.2	97.8	3.6	99.5		

Twin Lakes/Mt. Elbert Forebay
Water Year 2010 Operations
Unit: 1,000 Acre-Feet

Table 6

Surface		Inflow						Total Outflow	End of Month Content ⁵	Water Elevation ⁶ (FEET)	
		Twin Lakes		Conduit	Native Inflow	Total Inflow	Evap				
Year	Month	Canal Company Imports	Other					Mt. Elbert Halfmoon	Project Water		
2009	Sep								120.9	9188.55	
	Oct	0.9	0	0	14.4	1.0	16.3	0.6	11.5	125.1	9190.36
	Nov	0.6	0.4	0	0.5	0.8	2.3	0.3	11.1	116.0	9185.81
	Dec	0.5	0.7	0	21.3	0	22.5	0	18.8	119.0	9187.50
2010	Jan	0.3	0.8	0	17.1	0	18.2	0	17.0	119.1	9187.77
	Feb	0.2	0.9	0	4.1	0	5.2	0	6.4	117.7	9186.98
	Mar	0.2	0.9	0	4.7	0	5.8	0	5.5	117.8	9187.19
	Apr	0.9	0.5	0	3.4	1.1	5.9	0.1	4.5	119.2	9187.74
	May	8.8	5.1	2.2	4.3	5.1	25.5	1.1	18.8	124.8	9190.16
	Jun	25.0	2.0	7.3	6.9	33.9	75.1	1.4	66.6	131.8	9193.06
	Jul	5.0	0	2.1	11.0	10.0	28.1	1.3	26.0	132.6	9193.58
	Aug	3.8	0.3	1.8	0.6	6.9	13.4	1.0	20.7	124.3	9190.06
	Sep	<u>0.5</u>	<u>0</u>	<u>0.1</u>	<u>0.5</u>	2.5	3.6	1.1	2.1	124.7	9190.89
Subtotal		46.7	11.6	13.5	88.8						
Total		58.3			102.3	61.3	221.9	6.9	209.0		

⁵ Contents of both Twin Lakes and Mt. Elbert Forebay

⁶ Elevation of Twin Lakes

Table 7

Mt. Elbert Pumped-Storage Powerplant Operations
Water Year 2010

Year	Month	Mt. Elbert Conduit Inflow to Mt. Elbert Forebay (acre-ft)	Water Pumped from Twin Lakes to Mt. Elbert Forebay (acre-ft)	Water through Generator (acre-ft)	Megawatt- Hours Net Generation* (mWh)
2009	Oct	14,501	50,007	63,898	21,070
	Nov	536	3,834	2,893	989
	Dec	21,642	35,728	57,997	18,903
2010	Jan	17,029	37,122	54,365	17,745
	Feb	4,220	47,232	51,339	15,865
	Mar	4,831	54,224	58,047	18,317
	Apr	3,550	46,033	49,650	16,031
	May	6,570	54,480	60,525	19,522
	Jun	14,309	51,474	65,211	21,614
	Jul	13,011	53,200	67,490	22,274
	Aug	2,336	60,084	62,324	20,701
	Sep	696	86,221	88,319	29,657
Total		103,231	579,639	682,058	222,688

*Net Generation is gross plant generation less station service.

Table 8

Pueblo Reservoir
Water Year 2010 Operations
Unit: 1,000 Acre-Feet

Year	Month	Inflow			Total Inflow	Evapo- ration	Outflow	End of month content	Water surface elevation (FEET)
		Project Water	Other	Native					
2009	Sep						193.2	4865.13	
	Oct	2.7	2.7	19.3	24.7	1.0	22.2	194.6	4865.50
	Nov	6.4	2.3	23.1	31.8	0.6	17.7	208.0	4868.98
	Dec	12.0	2.8	16.2	31.0	0.5	7.8	230.7	4874.54
2010	Jan	10.5	2.9	14.9	28.3	0.5	7.8	250.7	4879.13
	Feb	1.2	2.4	13.2	16.8	0.6	7.0	259.9	4881.12
	Mar	0.8	4.1	18.8	23.7	1.3	16.0	266.3	4882.49
	Apr	0.3	7.3	30.1	37.7	2.2	47.1	254.7	4880.01
	May	0.3	4.6	53.0	57.9	2.8	70.3	239.5	4876.59
	Jun	7.2	11.5	147.2	165.9	3.4	162.1	239.9	4876.69
	Jul	5.2	7.8	34.3	47.3	3.2	65.3	218.8	4871.66
	Aug	2.2	5.8	38.5	46.5	2.3	60.8	202.1	4867.48
	Sep	<u>0.3</u>	<u>2.4</u>	<u>11.5</u>	14.2	2.4	26.9	187.1	4863.50
	Subtotal	49.1	56.6	420.1					
Total					525.8	20.8	511.0		

Table 9

Fryingpan-Arkansas Project
Reservoir Storage Allocation Data
Unit: Acre-Feet

Reservoir	Dead	Inactive	Active conservation	Joint use	Flood control	Total capacity storage
Ruedi	63	1,095	101,278	0	0	102,373 ¹
Turquoise	2,810	8,920	120,478	0	0	129,398 ¹
Pueblo	2,329	28,121	228,828	66,000	26,991	349,940 ²
Twin Lakes	63,324	72,938	67,917	0	0	140,855
Mt. Elbert Forebay	561	3,825	7,318	0	0	11,143 ¹

¹ New area-capacity tables (1984)

² New area-capacity table (1994)

Note: Inactive includes dead storage

Table 10

Fryingpan-Arkansas Project
Monthly Evaporation Factors

Meredith		Sugar Loaf	Twin Lakes	Pueblo
Month	Factor	Factor	Factor	Factor
Oct	<u>1</u> /	.220	.220	.247
Nov		.100	.100	.155
Dec		.030	.030	.133
Jan		.050	.050	.128
Feb		.080	.080	.173
Mar		.140	.140	.280
Apr		.233	.233	.308
May		.363	.363	-
Jun		.448	.448	-
Jul		.405	.405	-
Aug		.318	.318	-
Sep		.290	.290	-

Note: Factor is used when pan is not in operation. Factor divided by number of days in the month times reservoir area not covered by ice equals daily water surface evaporation in acre-feet.

1/ Factors have not been determined for Meredith. Factors from Twin Lakes are used for Meredith.

Table 11

Fryingpan-Arkansas Project
 Monthly Average vs. Current Water Year Evaporation
 (Unit = Inches)

Month	Meredith		Sugar Loaf		Twin Lakes		Pueblo	
	Ave Pan (In)	WY 10	Ave Pan (In.)	WY 10	Ave Pan (In.)	WY 10	Ave Pan (In.)	WY 10
Oct	0.84	1.64	2.44	3.77	2.86	3.77	5.38	4.72
Nov	0	0	1.55	1.70	1.70	1.76	2.65	2.66
Dec	0	0	0.32	0.53	0.39	0.53	2.28	2.28
Jan	0.18	0	0.04	0.85	0.40	0.85	2.19	2.19
Feb	0	0	0.06	1.39	0.70	1.39	2.98	2.97
Mar	0	0	0.56	2.39	0.82	2.39	4.87	4.93
Apr	0.18	0	1.04	4.01	2.18	4.01	6.55	8.28
May	2.43	4.56	2.26	6.08	4.93	7.47	8.95	10.95
Jun	7.69	10.82	5.54	7.58	7.44	8.36	10.47	13.35
Jul	7.28	10.06	5.19	5.54	6.60	7.05	11.15	13.20
Aug	5.77	7.23	4.07	4.21	5.52	5.80	9.12	10.17
Sep	3.73	4.26	3.47	6.45	4.87	7.22	7.50	10.89

Table 12

Fryingpan-Arkansas Project
 Monthly Average Vs. Current Water Year Precipitation
 (Unit = Inches)

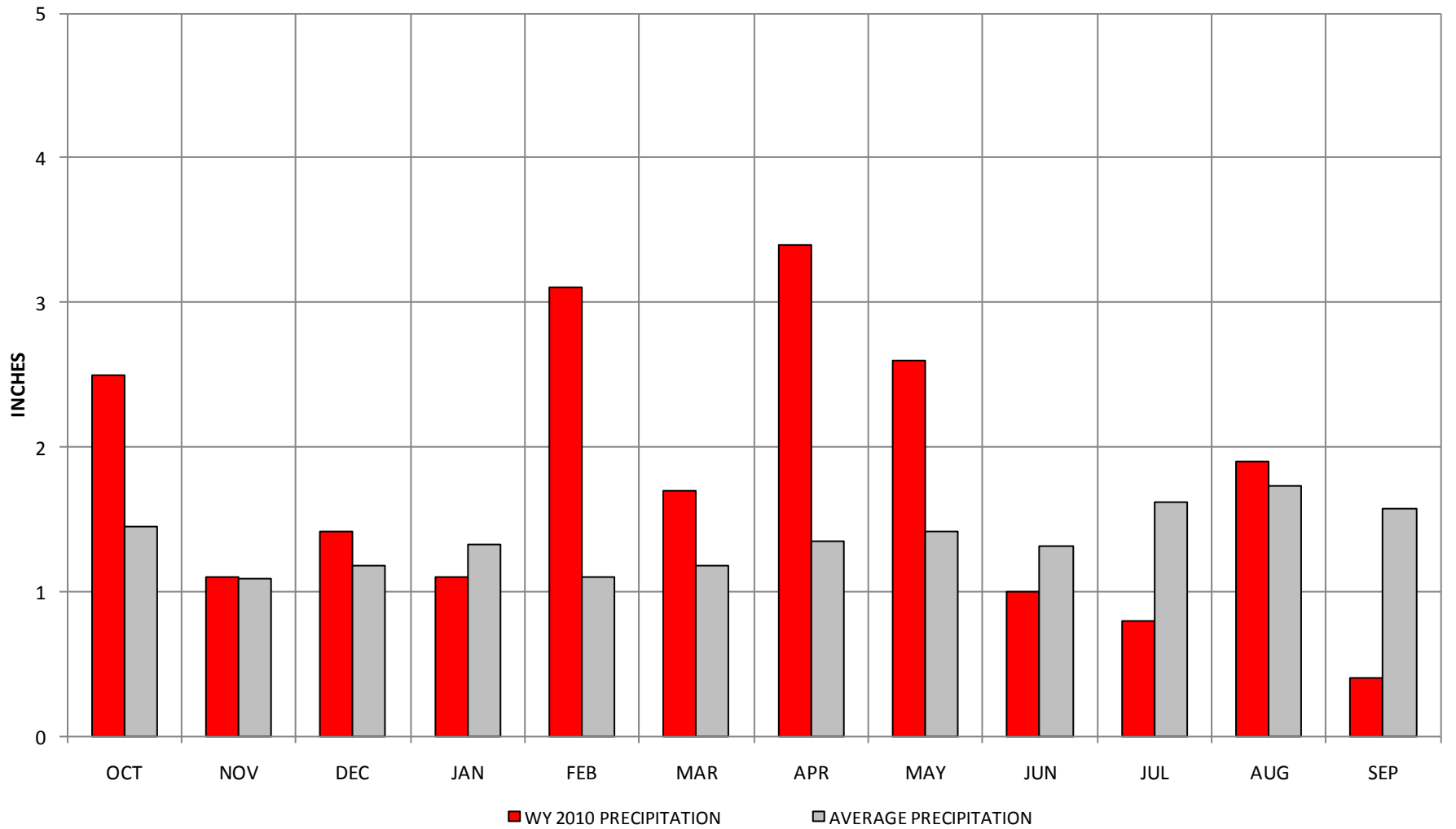
Month	Meredith		Sugar Loaf		Twin Lakes		Pueblo		Rocky Ford	
	Avg.	WY 10	Avg.	WY 10	Avg.	WY 10	Avg.	WY 10	Avg.	WY 10
Oct	1.45	2.50	1.02	1.35	0.72	0.93	0.74	1.66	0.78	3.40
Nov	1.09	1.10	1.30	0.45	0.52	0.05	0.50	0.21	0.46	0.38
Dec	1.18	1.42	1.28	1.41	0.50	0.91	0.39	0.27	0.32	0.18
Jan	1.33	1.10	1.51	1.39	0.41	0.01	0.29	0.19	0.26	0.42
Feb	1.10	3.10	1.27	1.56	0.49	0.86	0.26	0.92	0.29	0.66
Mar	1.18	1.70	1.45	1.03	0.69	0.53	0.84	1.24	0.68	1.93
Apr	1.35	3.40	1.42	1.11	0.73	0.41	1.37	1.39	1.32	1.24
May	1.42	2.60	1.29	1.70	0.91	0.57	1.56	0.80	1.83	1.22
Jun	1.32	1.00	1.12	1.07	0.85	1.15	1.30	1.25	1.40	2.02
Jul	1.62	0.80	1.96	1.97	1.58	1.65	1.96	1.93	1.97	3.97
Aug	1.73	1.90	1.98	2.05	1.52	1.64	2.05	2.73	1.54	2.37
Sep	1.57	0.40	1.36	0.69	0.99	0.40	0.91	0.13	0.90	0.20
Total	16.34	21.02	16.96	15.78	9.91	9.11	12.17	12.72	11.75	17.99
Max. Annual	26.70	(1984)	25.95	(1957)	17.27	(1952)	20.32	(2007)	22.75	(1999)

Table 13

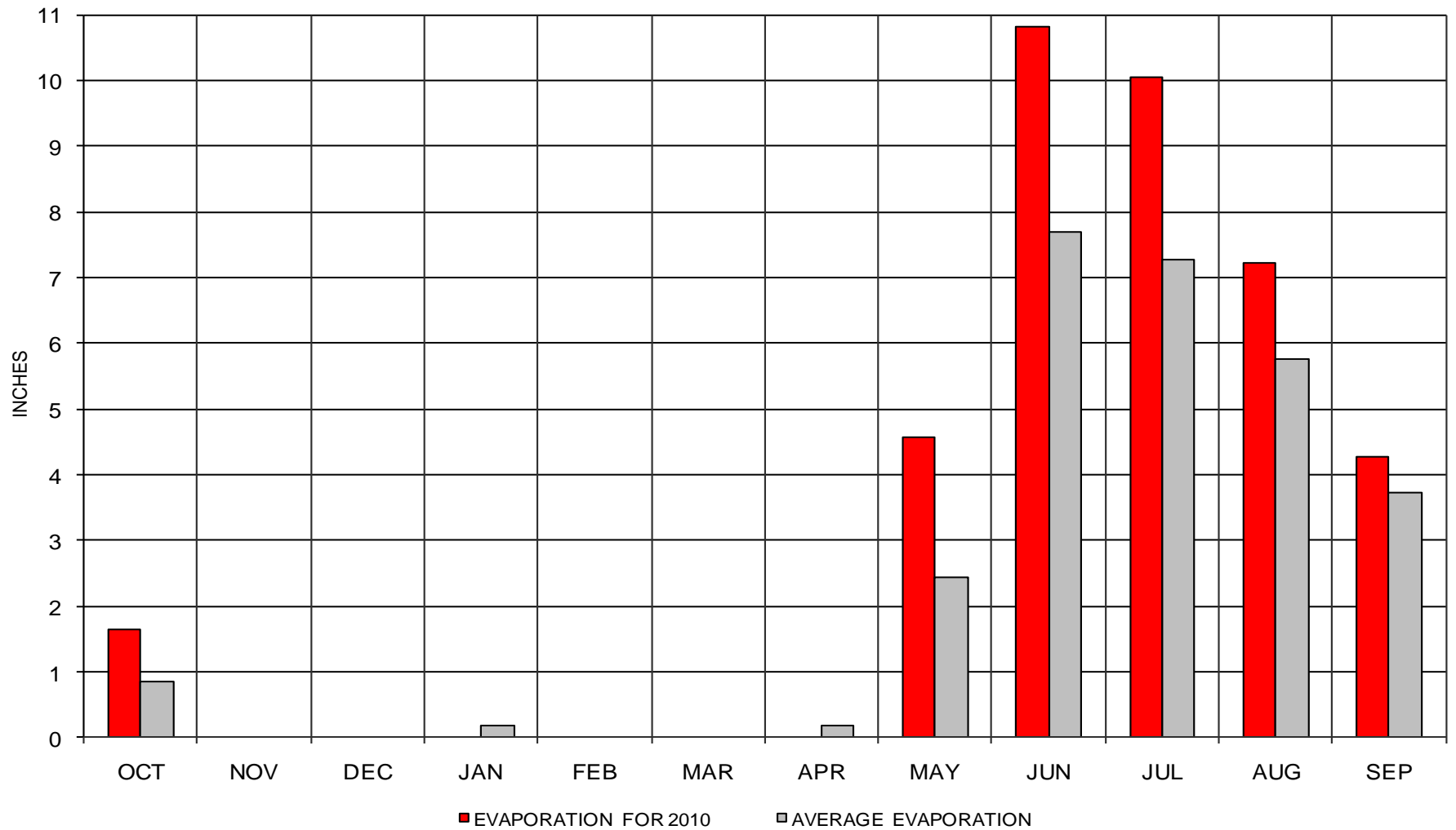
Fryingpan-Arkansas Project
Flood Control Benefits in Dollars

	<u>Ruedi Reservoir</u>		<u>Pueblo Reservoir</u>	
	<u>Benefits</u>	<u>Accumulated Benefits</u>	<u>Benefits</u>	<u>Accumulated Benefits</u>
1976			320,000	320,000
1979			90,000	410,000
1980			86,000	496,000
1981			111,000	607,000
1982			836,000	1,443,000
1983	80,000	80,000	47,000	1,490,000
1984	330,000	410,000	1,039,000	2,529,000
1985	91,000	501,000	234,000	2,763,000
1986	70,000	571,000	0	2,763,000
1987	0	571,000	90,000	2,853,000
1988	0	571,000	0	2,853,000
1989	0	571,000	0	2,853,000
1990	0	571,000	0	2,853,000
1991	0	571,000	482,000	3,335,000
1992	0	571,000	266,000	3,601,000
1993	4,000	575,000	496,000	4,097,000
1994	280,000	855,000	290,000	4,387,000
1995	1,770,000	2,625,000	832,000	5,219,000
1996	1,550,000	4,175,000	0	5,219,000
1997	1,207,000	5,382,000	320,200	6,539,200
1998	0	5,382,000	0	6,539,200
1999	116,000	5,498,000	4,778,000	11,317,200
2000	1,061,000	6,559,000	0	11,317,200
2001	0	6,559,000	0	11,317,200
2002	0	6,559,000	0	11,317,200
2003	1,515,100	8,074,100	0	11,317,200
2004	0	8,074,100	0	11,317,200
2005	970,200	9,044,300	0	11,317,200
2006	799,000	9,843,300	20,159,000	31,476,200
2007	103,000	9,946,300	0	31,476,200
2008	1,635,000	11,581,300	0	31,476,200
2009	740,100	12,321,400	0	31,476,200
2010	2,993,000	15,314,400	0	31,476,200

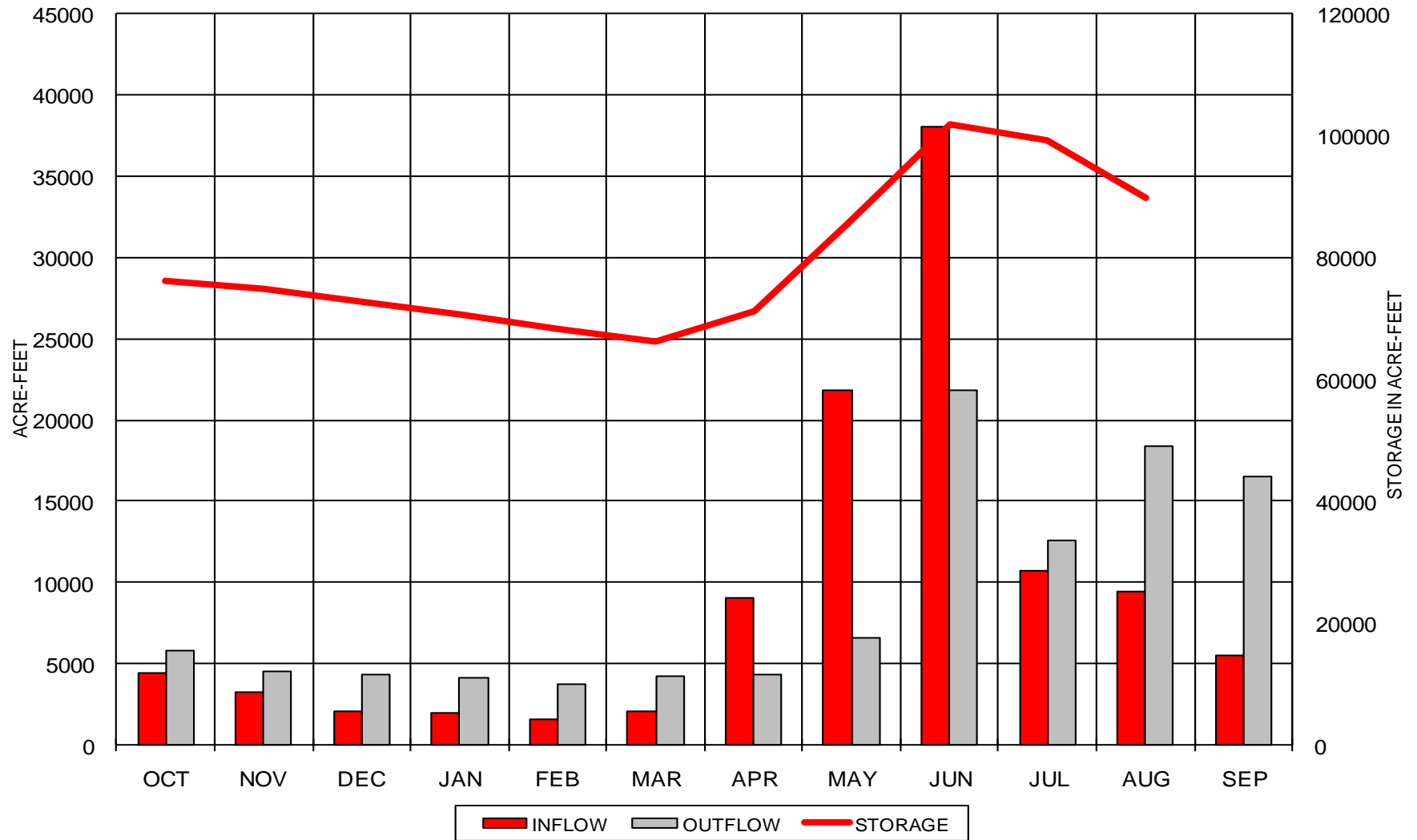
MONTHLY PRECIPITATION AT MEREDITH, CO WATER YEAR 2010



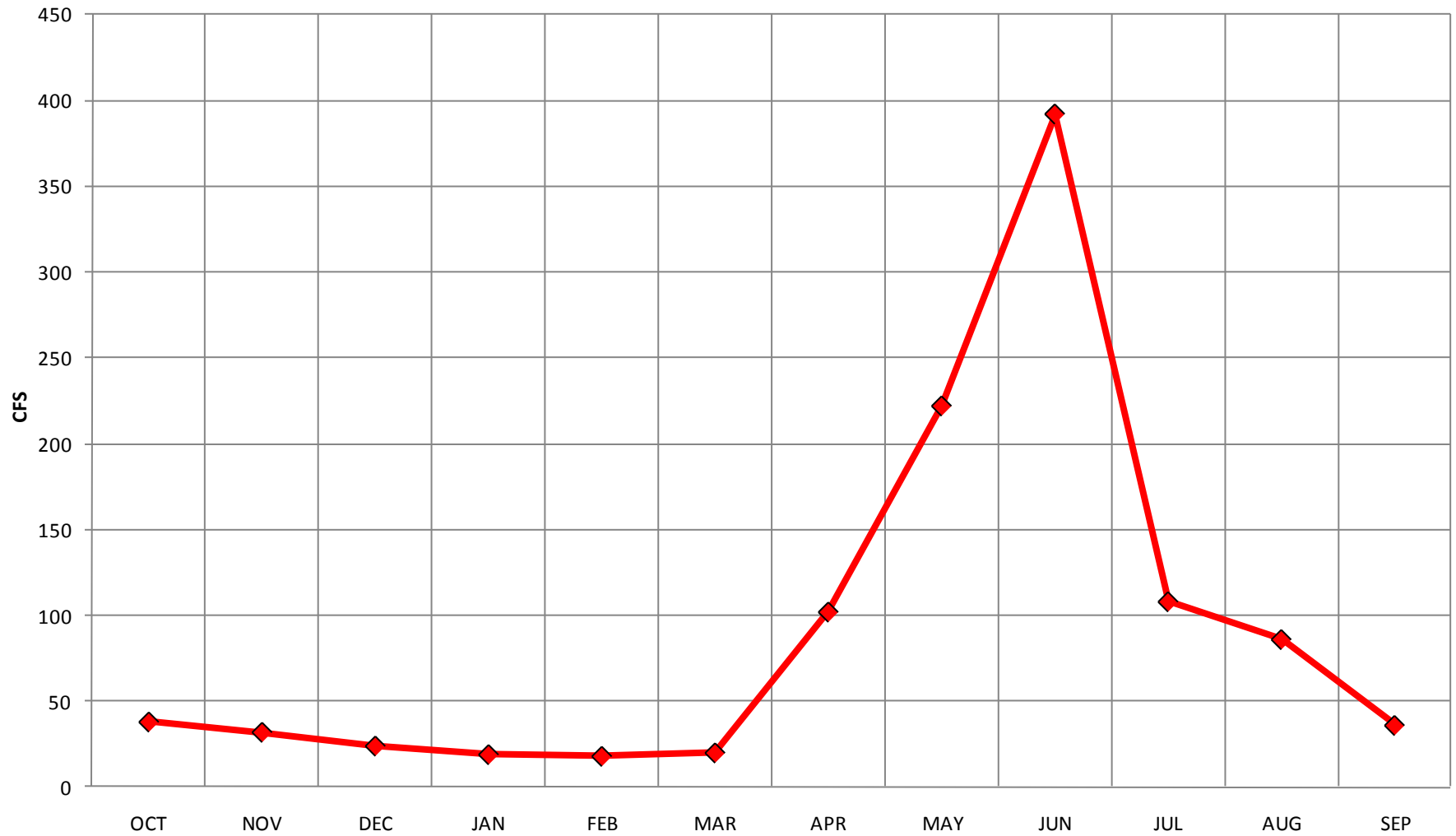
MONTHLY EVAPORATION AT MEREDITH, CO WATER YEAR 2010



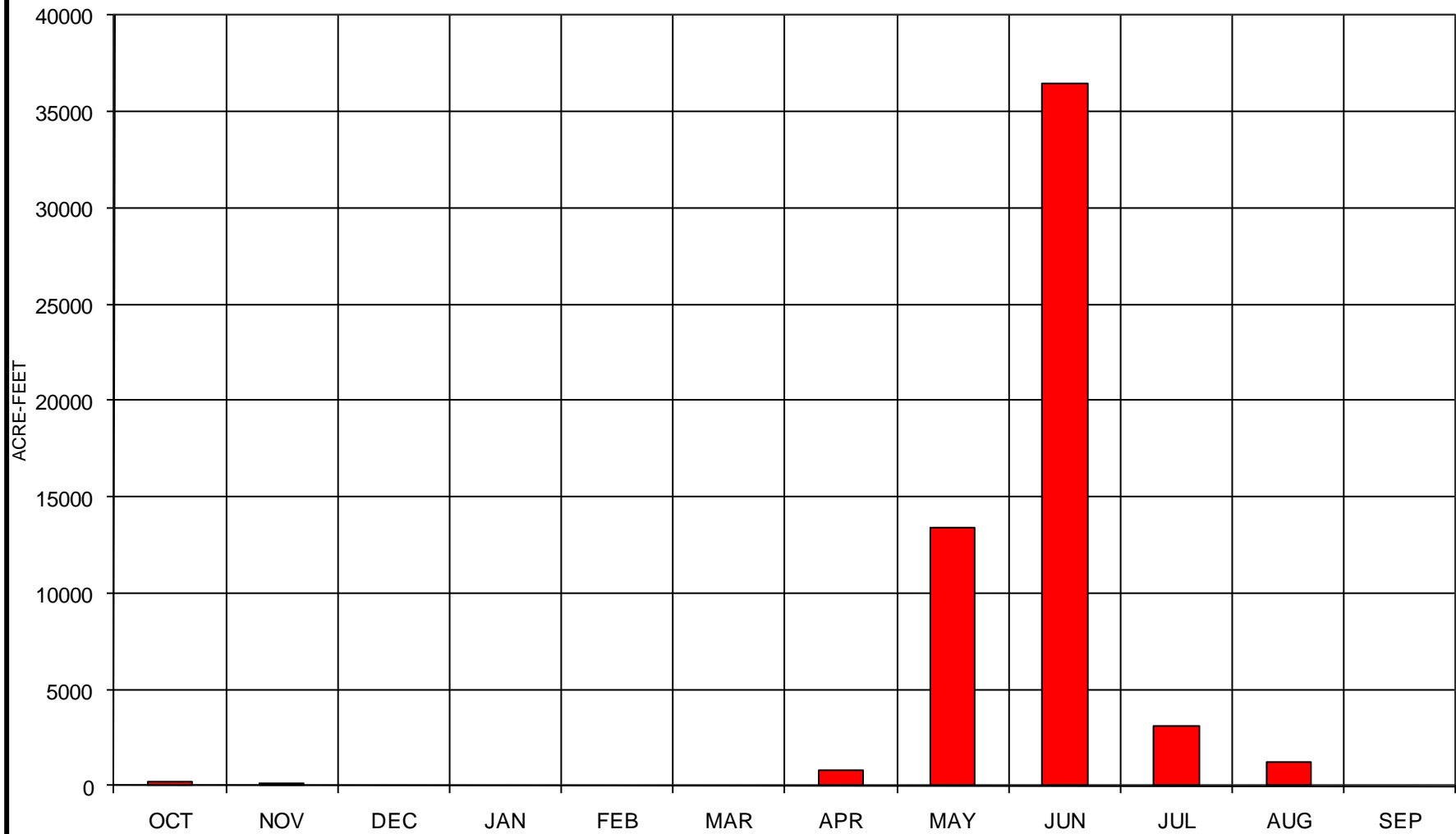
RUEDI RESERVOIR WATER YEAR 2010 ACTUAL OPERATIONS



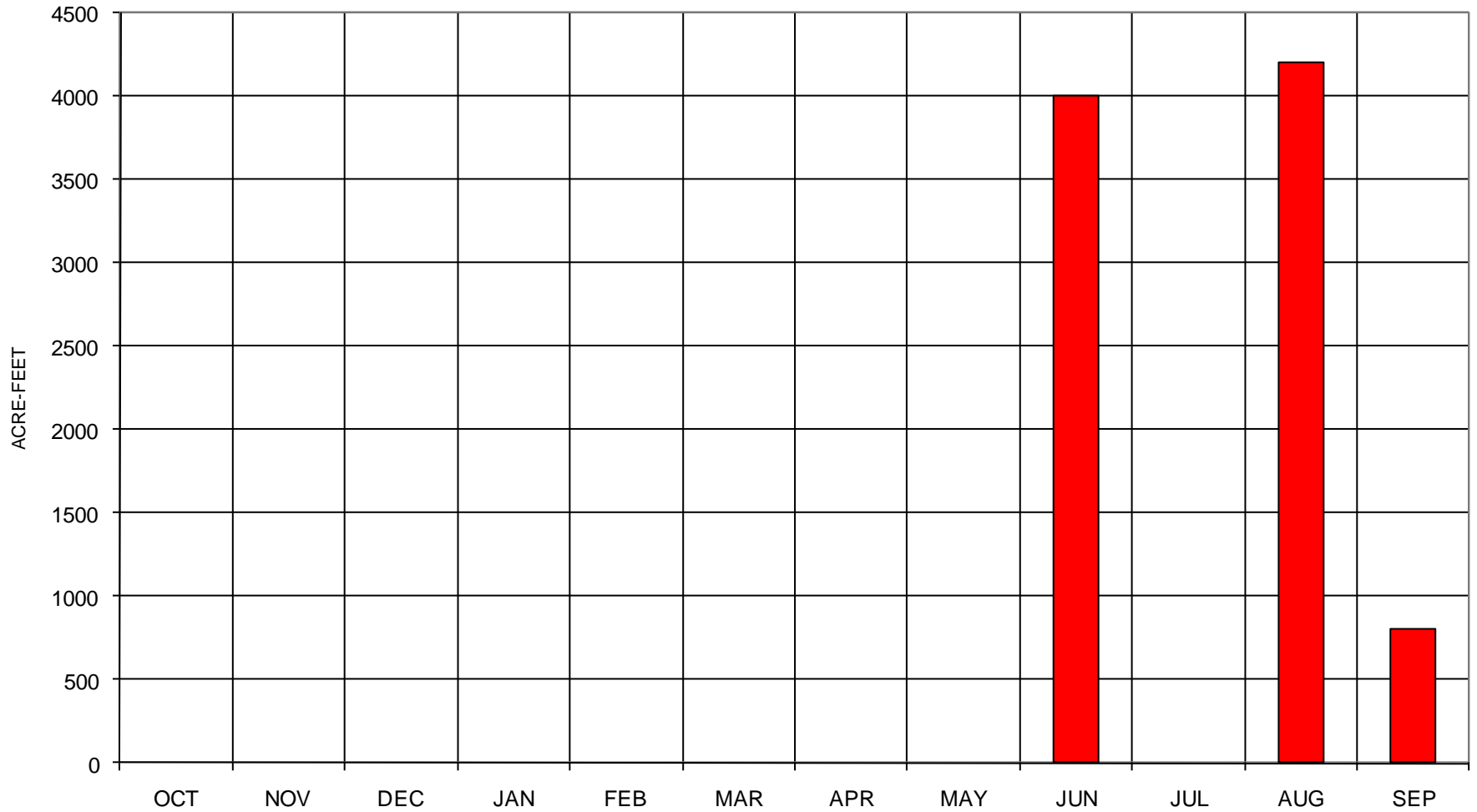
FRYINGPAN RIVER NEAR THOMASVILLE WATER YEAR 2010



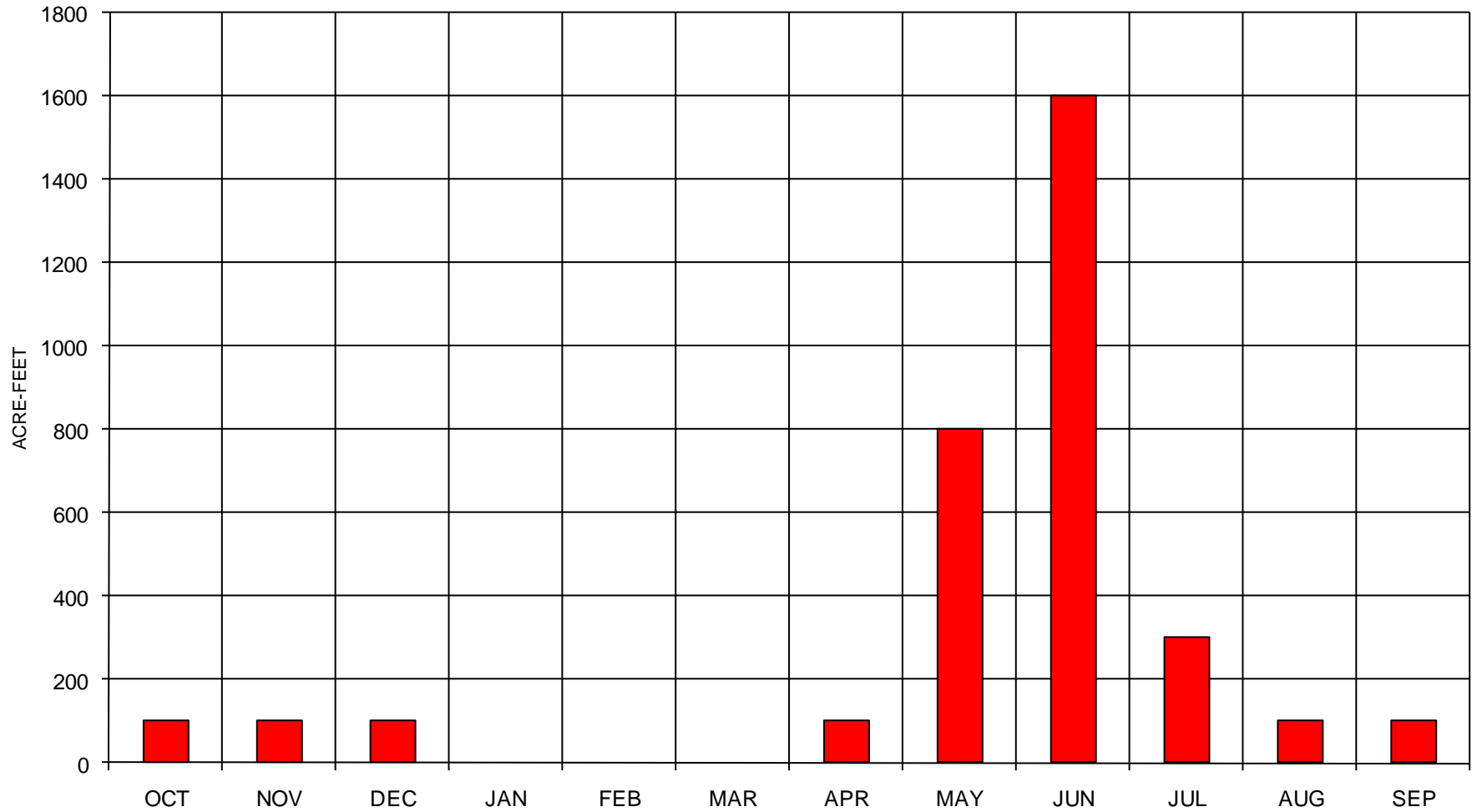
BOUSTEAD TUNNEL IMPORTS WATER YEAR 2010



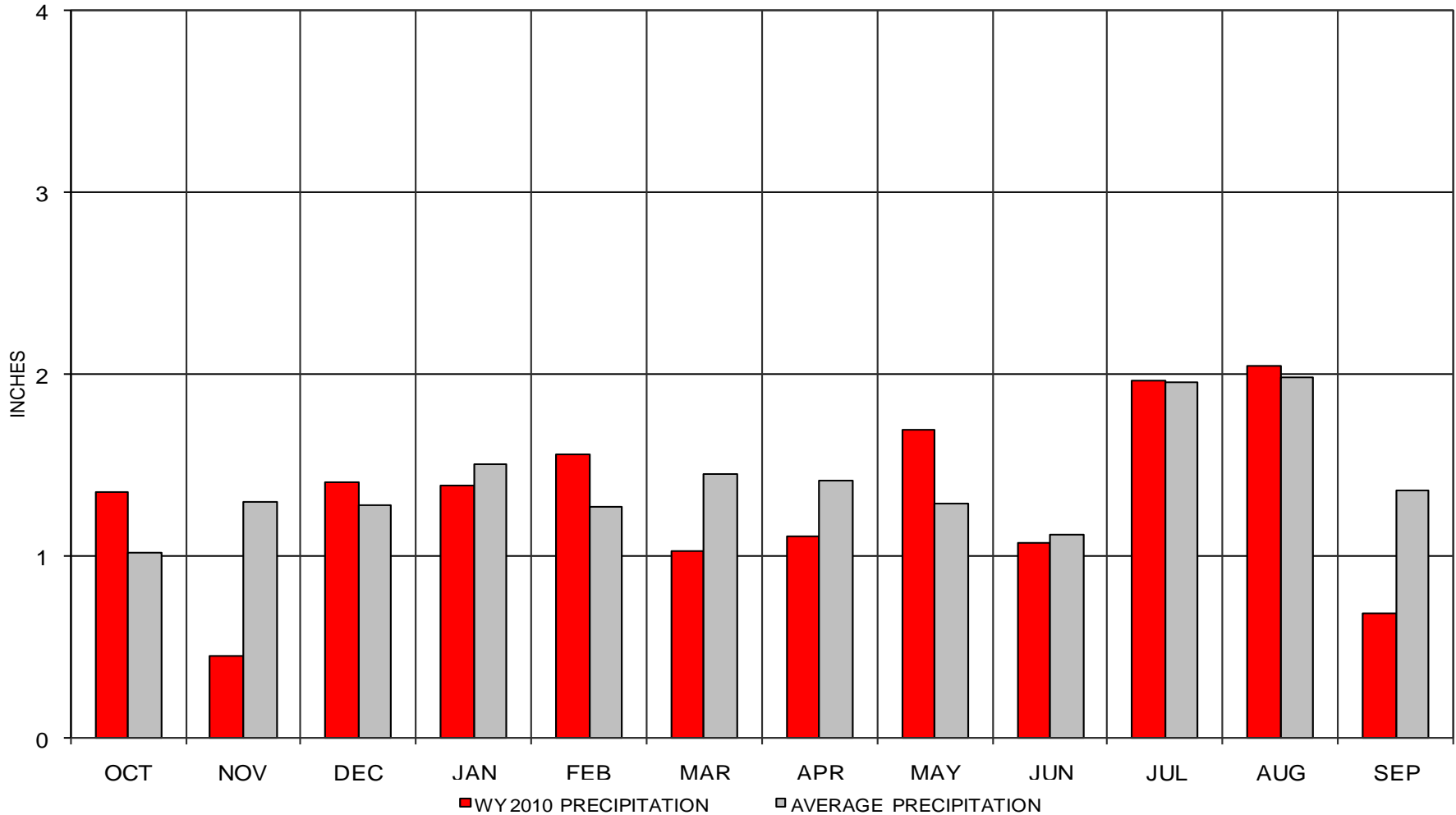
HOMESTAKE TUNNEL IMPORTS WATER YEAR 2010



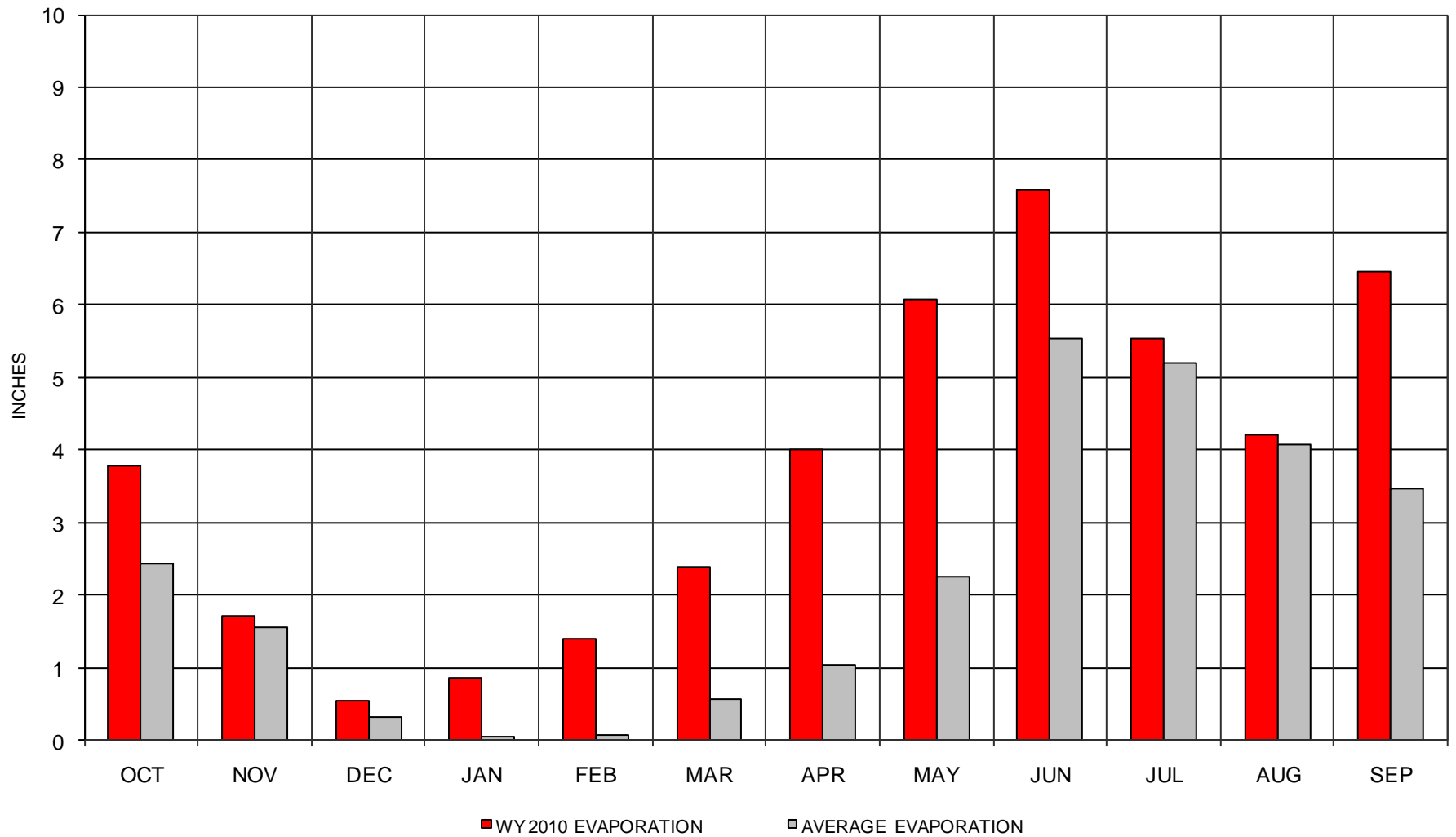
BUSK-IVANHOE TUNNEL IMPORTS WATER YEAR 2010



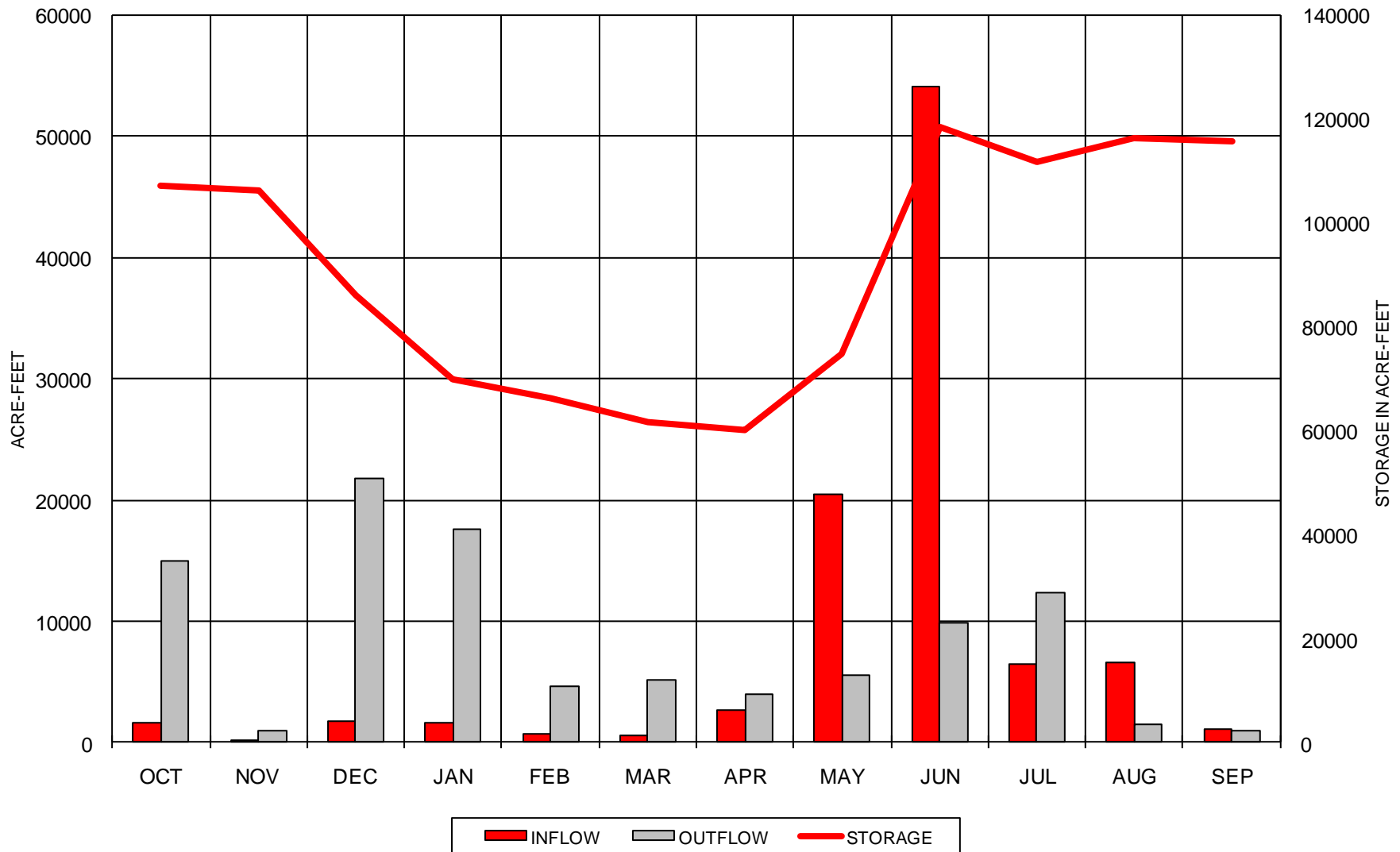
MONTHLY PRECIPITATION AT SUGAR LOAF DAM WATER YEAR 2010



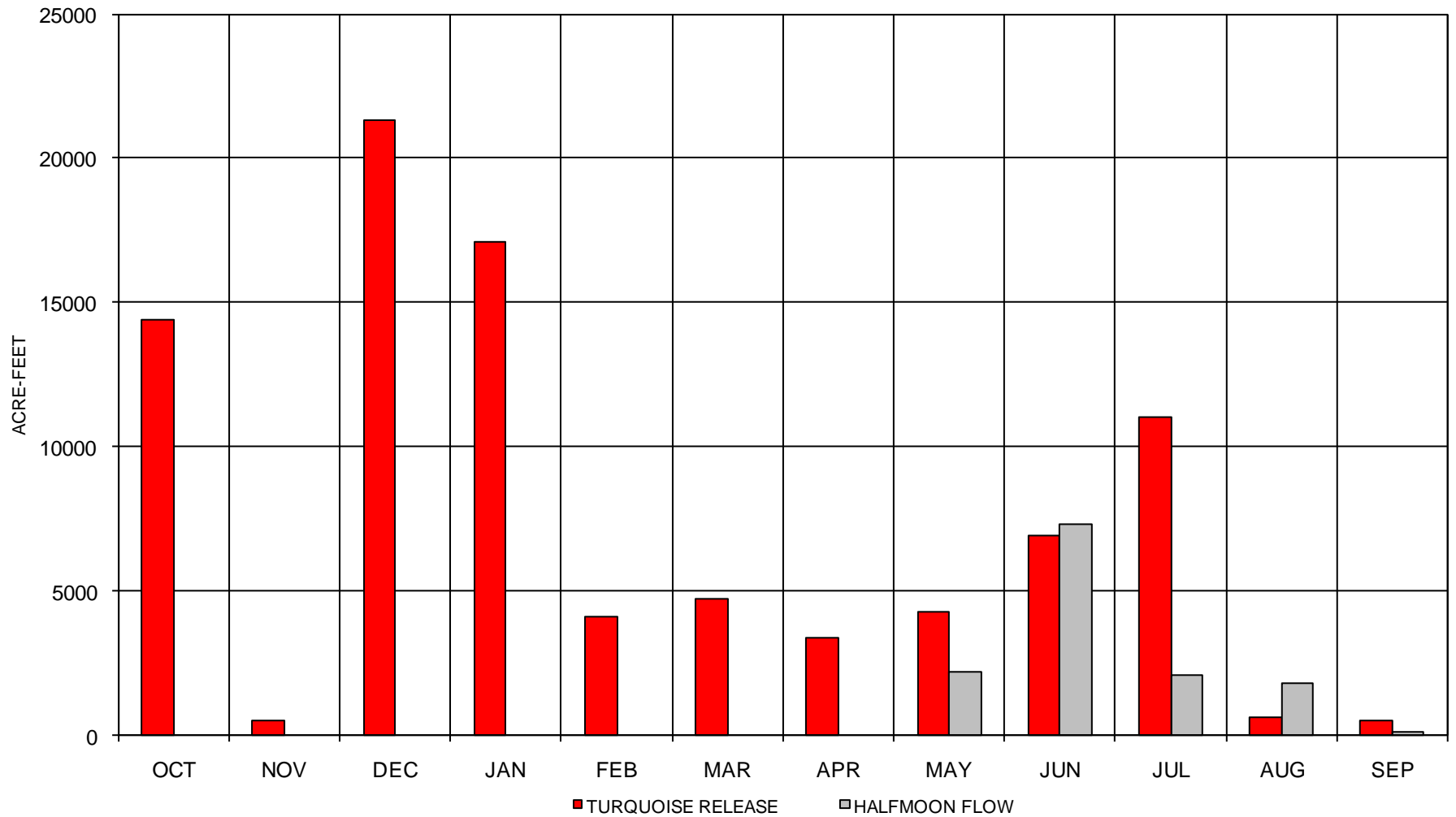
MONTHLY EVAPORATION AT SUGARLOAF DAM WATER YEAR 2010



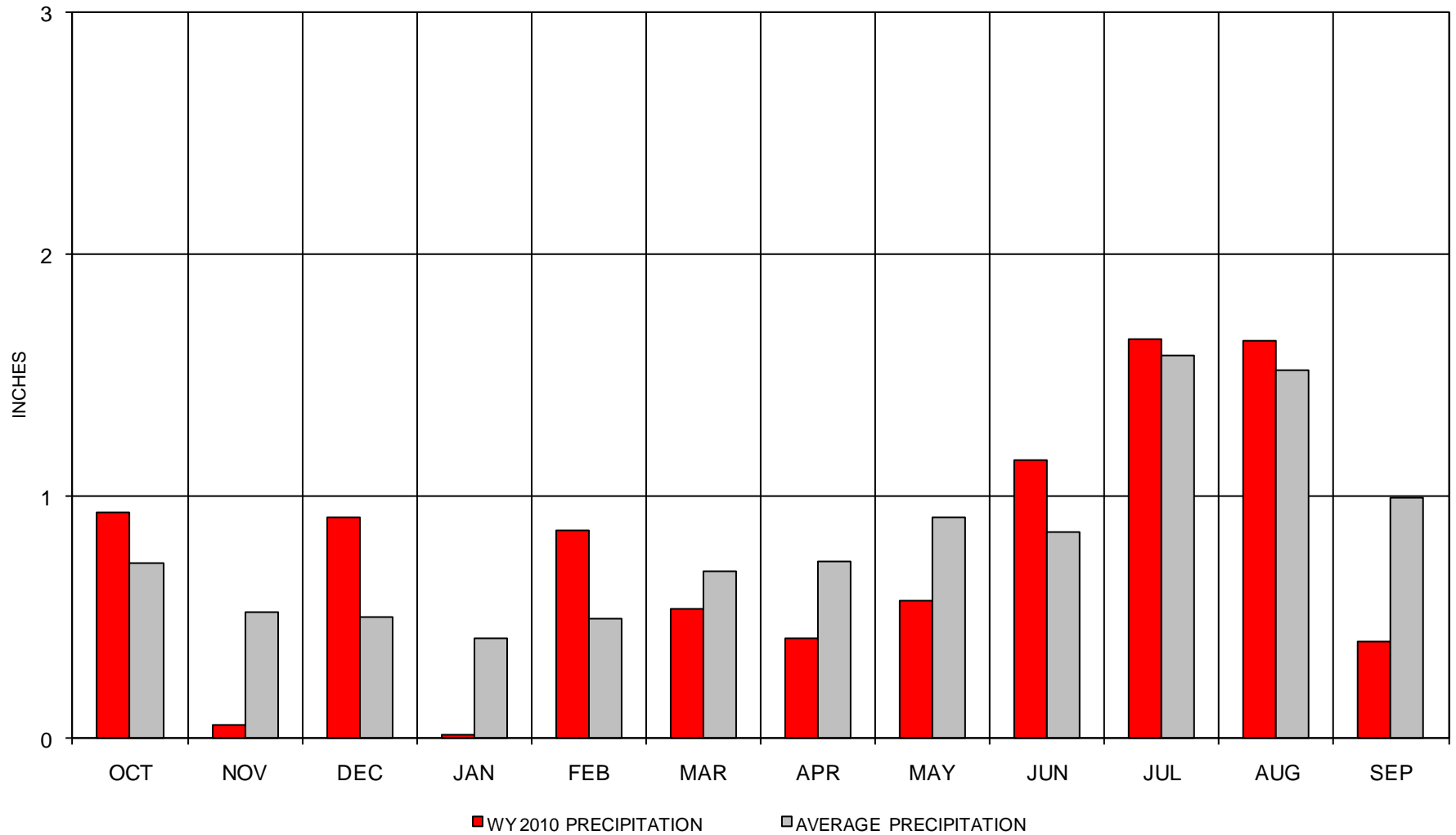
TURQUOISE LAKE WATER YEAR 2010 ACTUAL OPERATIONS



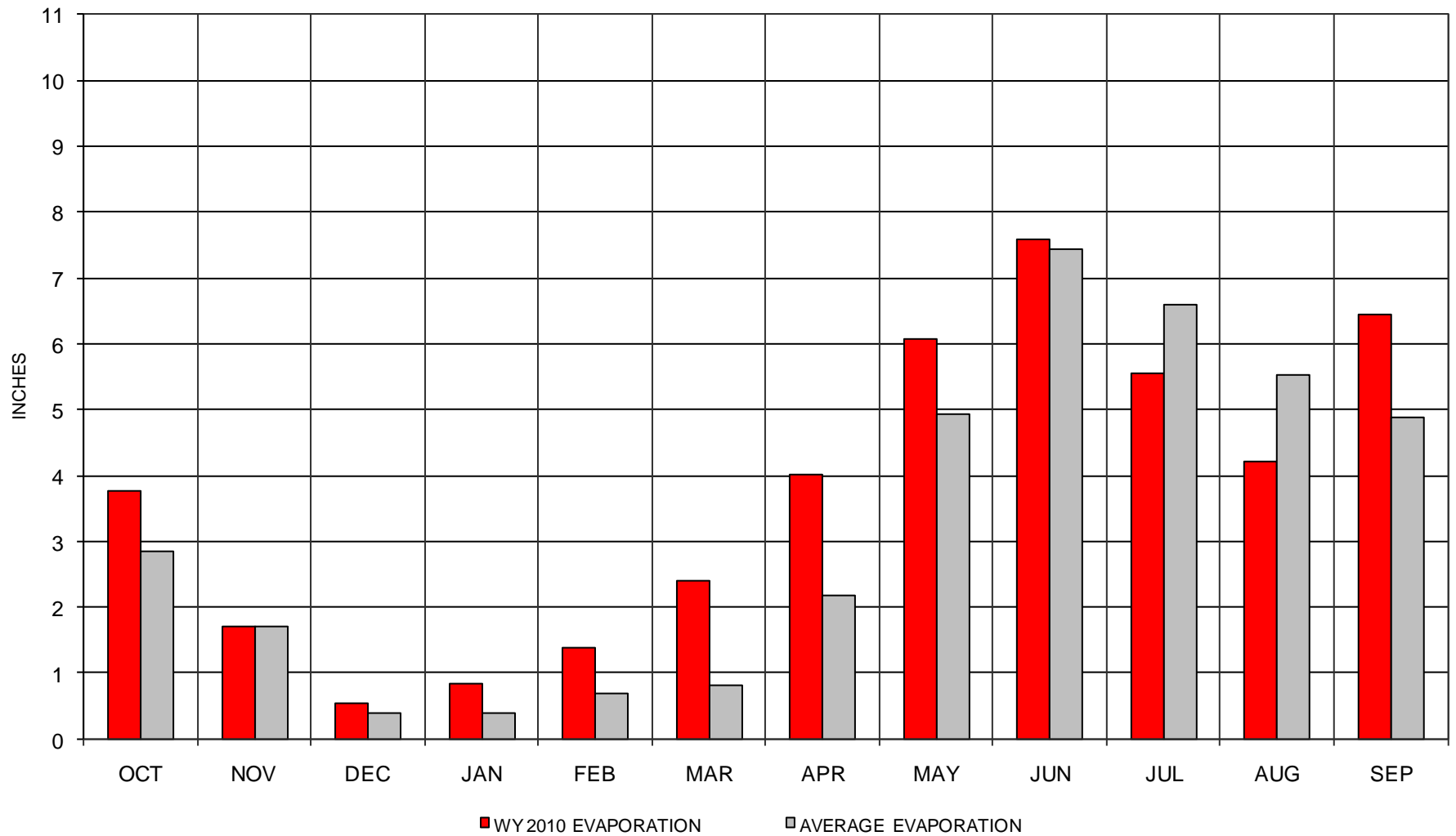
MT. ELBERT CONDUIT FLOW WATER YEAR 2010 ACTUAL OPERATIONS



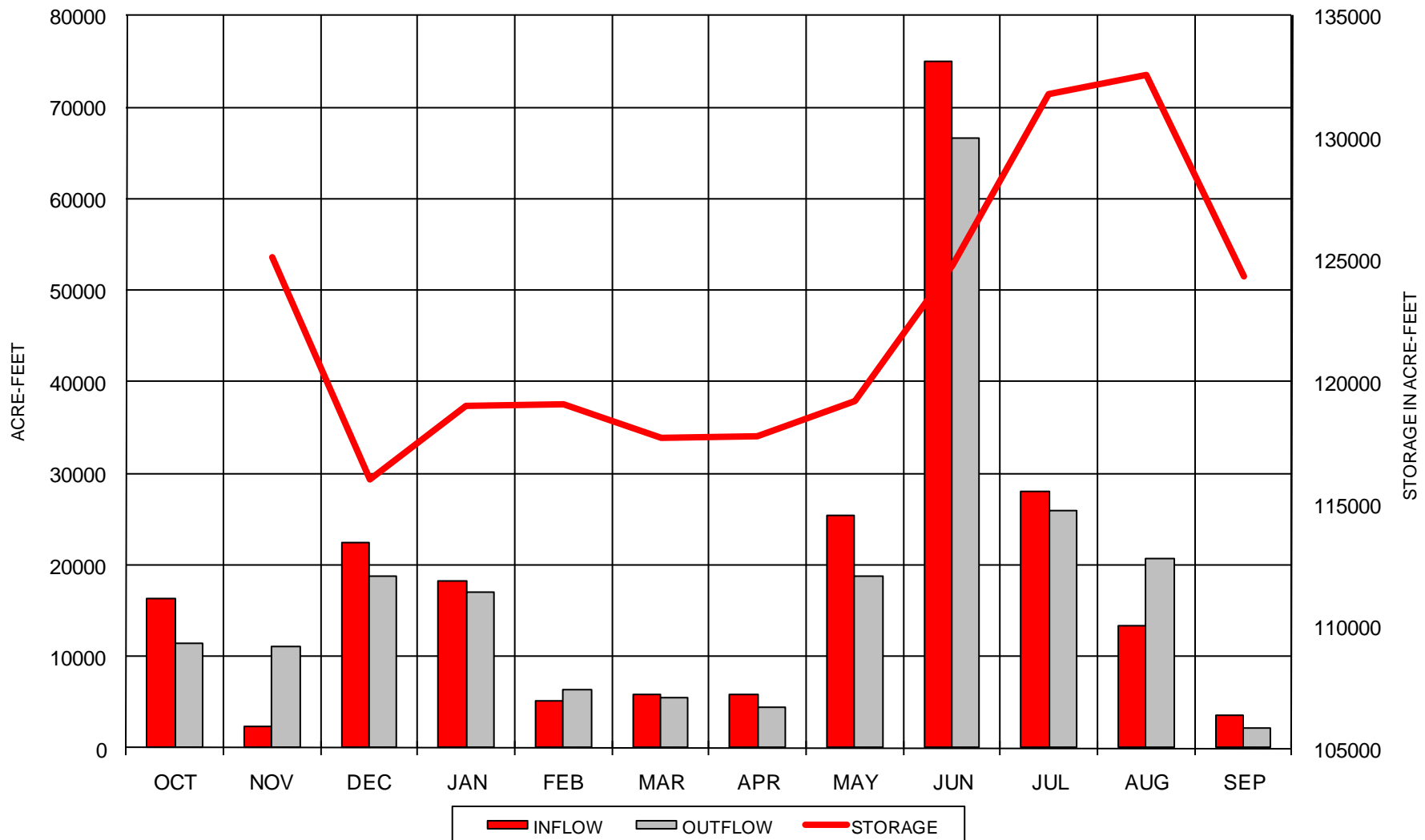
MONTHLY PRECIPITATION AT TWIN LAKES DAM WATER YEAR 2010



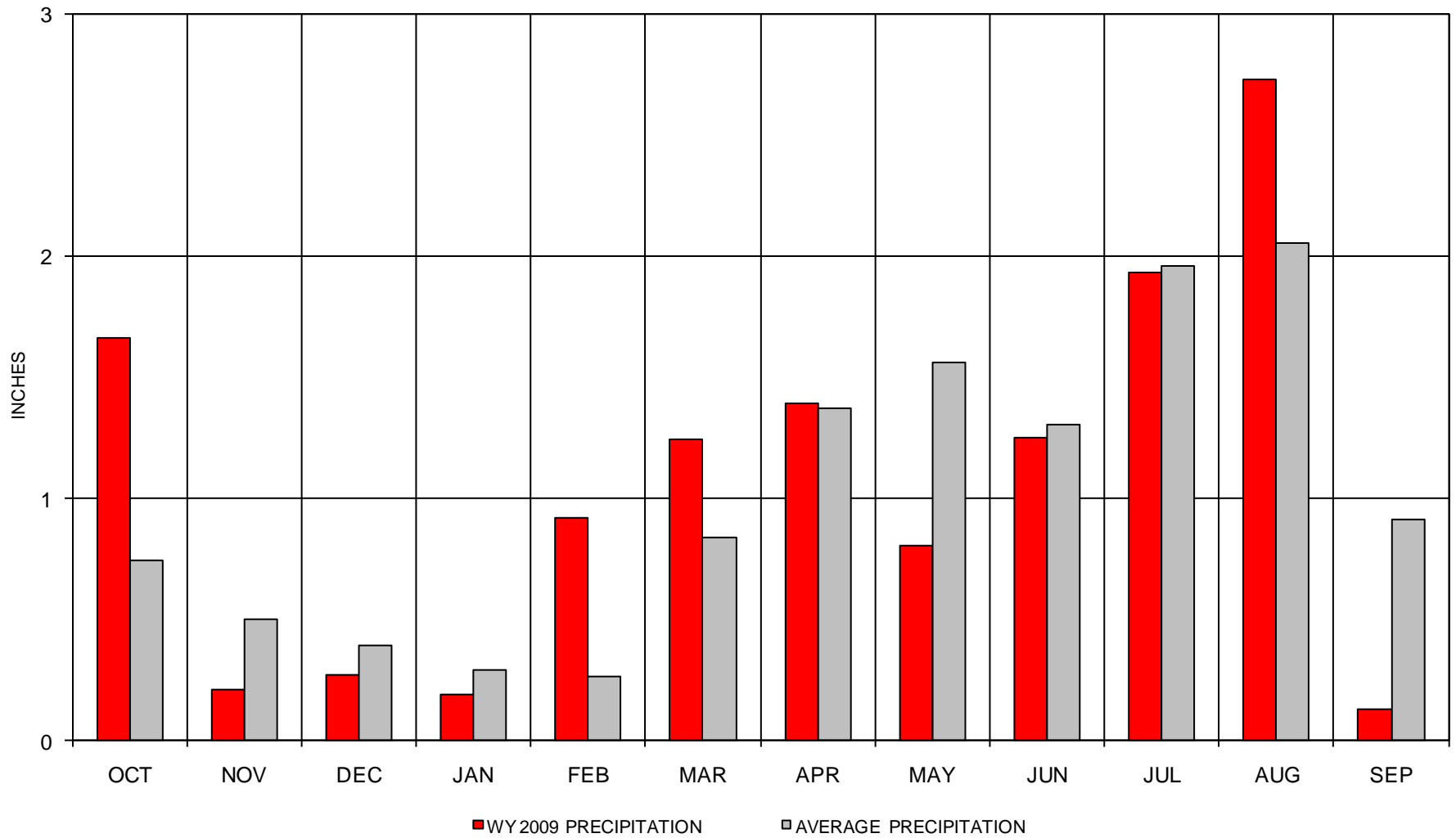
MONTHLY EVAPORATION AT TWIN LAKES DAM WATER YEAR 2010



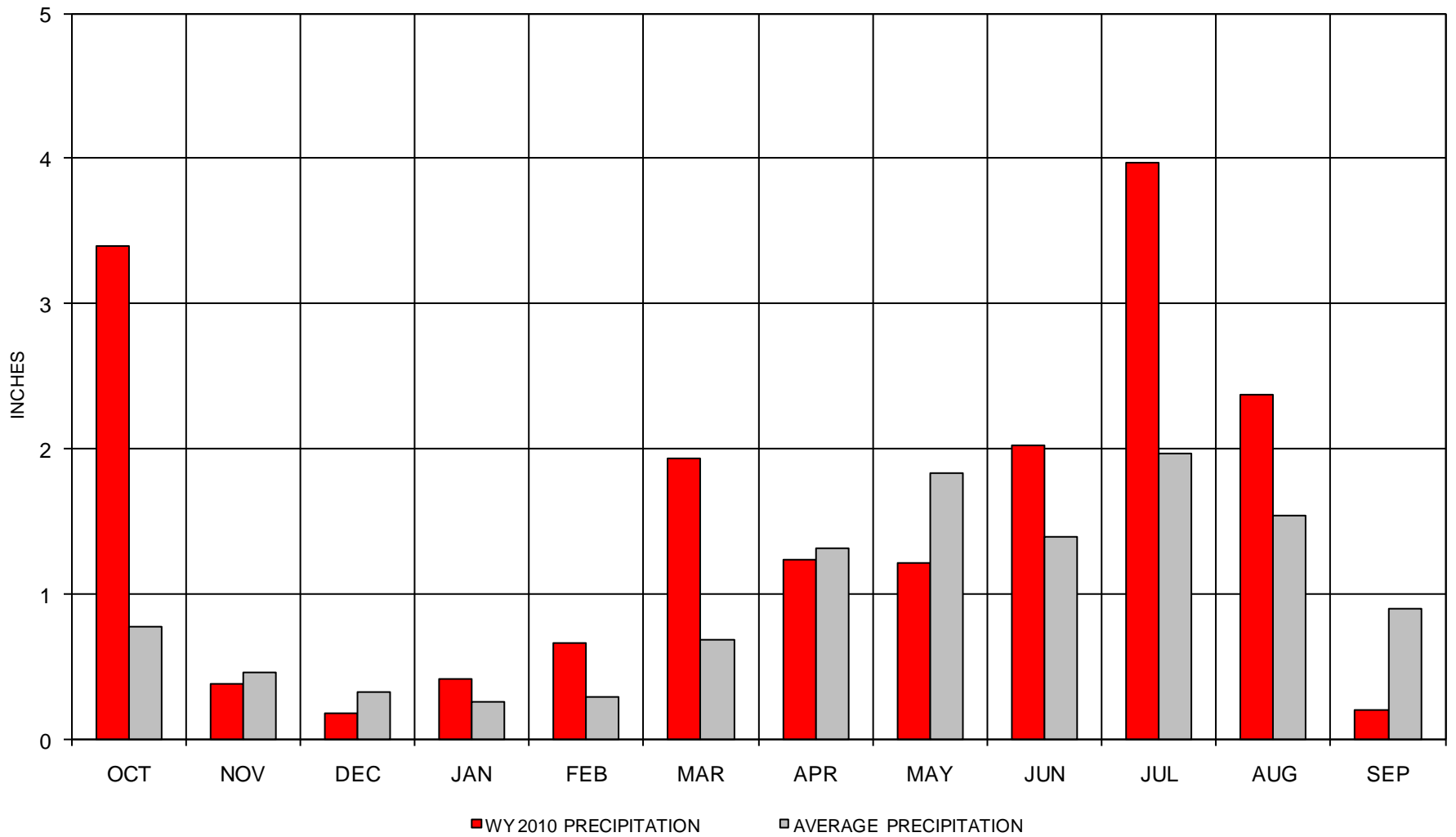
TWIN LAKES WATER YEAR 2010 ACTUAL OPERATIONS



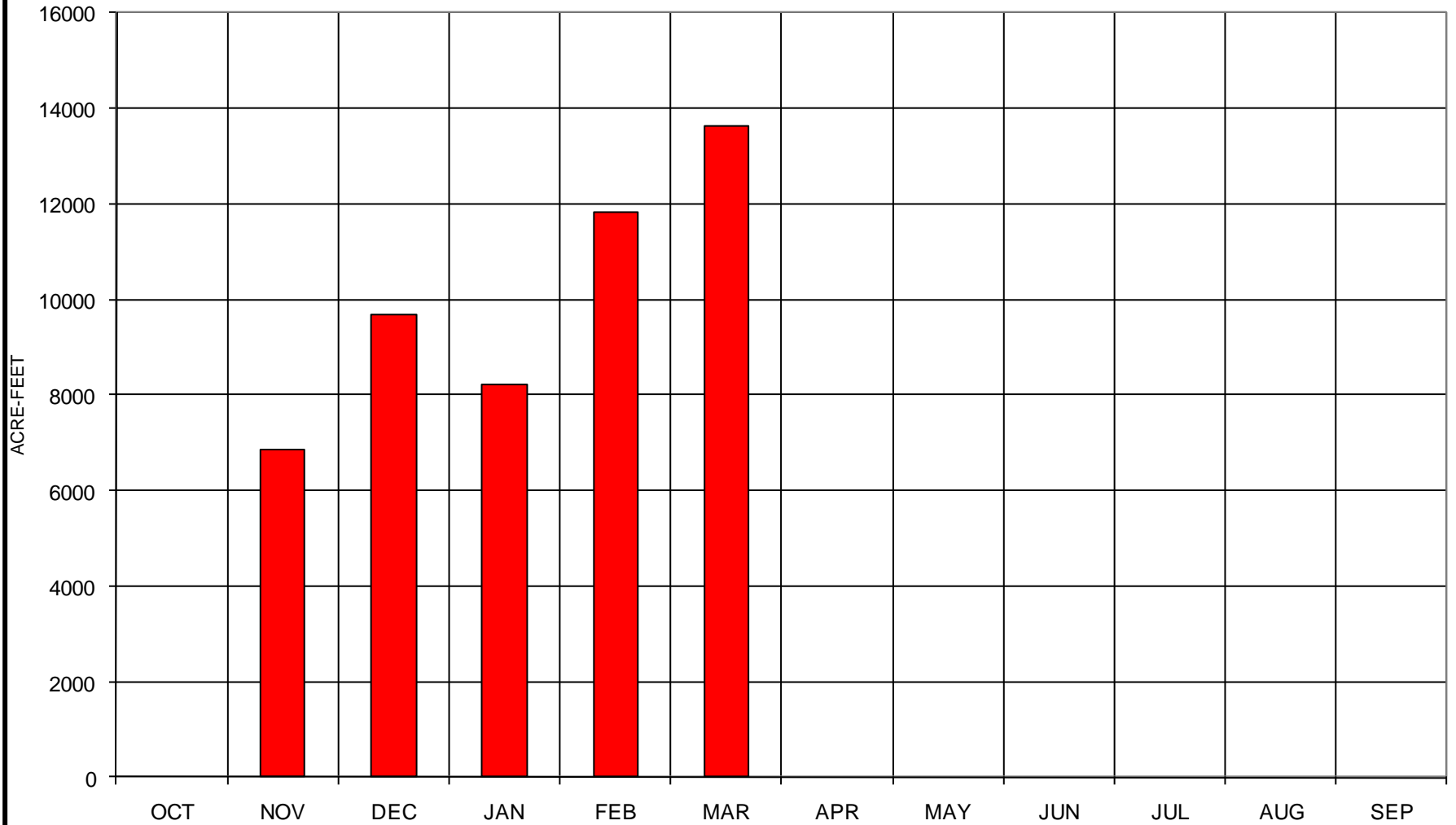
MONTHLY PRECIPITATION AT PUEBLO RESERVOIR WATER YEAR 2010



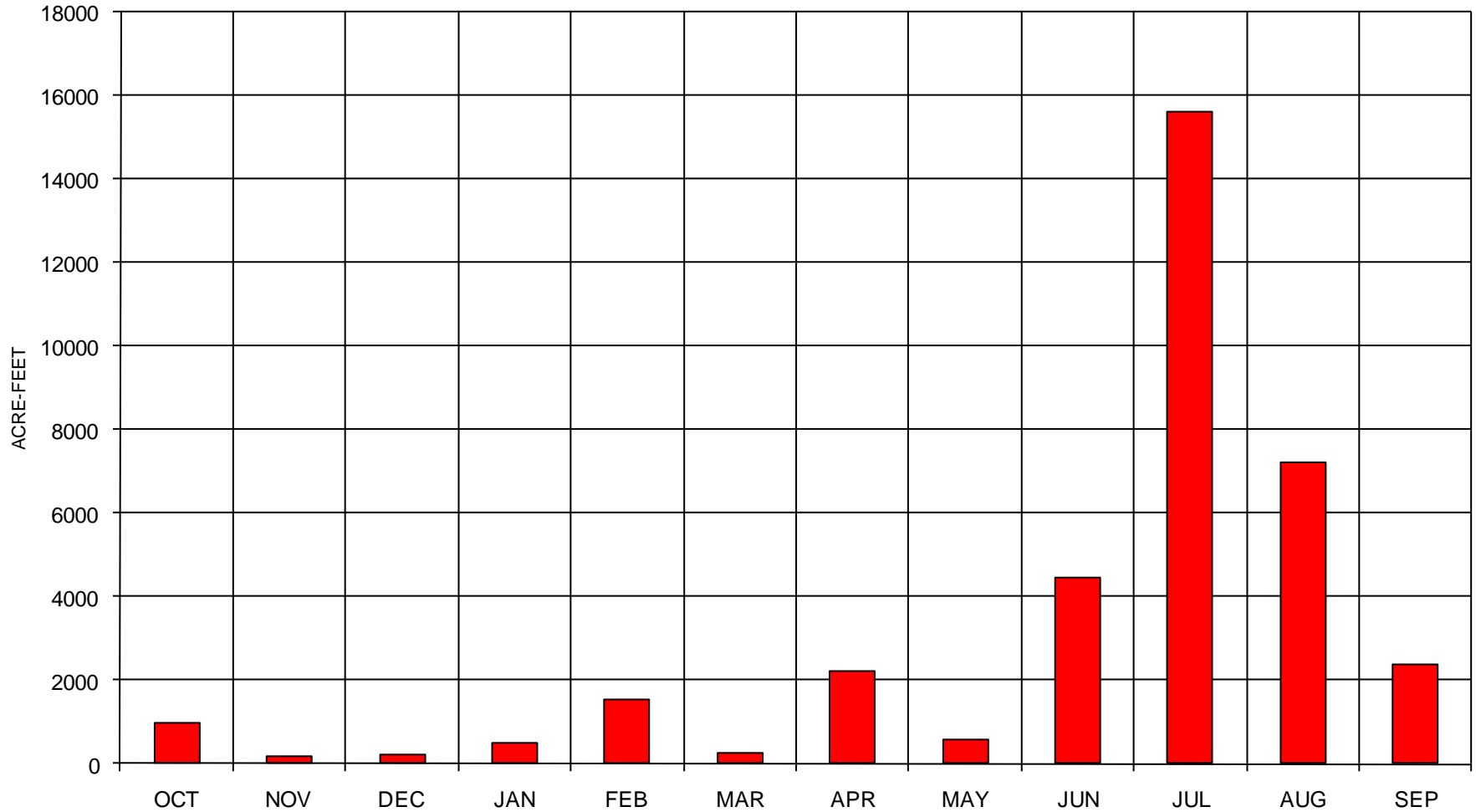
MONTHLY PRECIPITATION AT ROCKY FORD WATER YEAR 2010



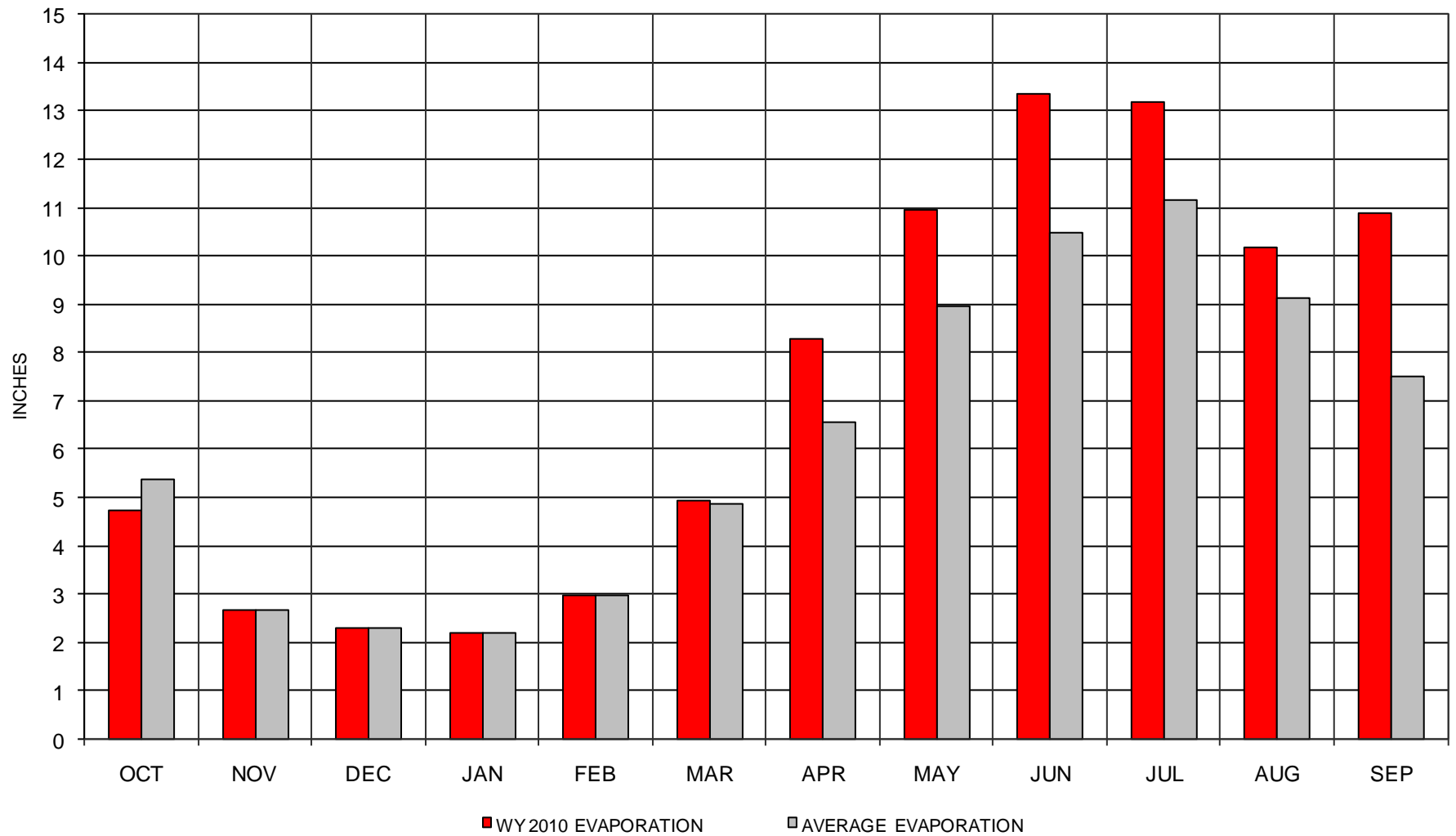
PUEBLO RESERVOIR WINTER WATER STORAGE WATER YEAR 2010



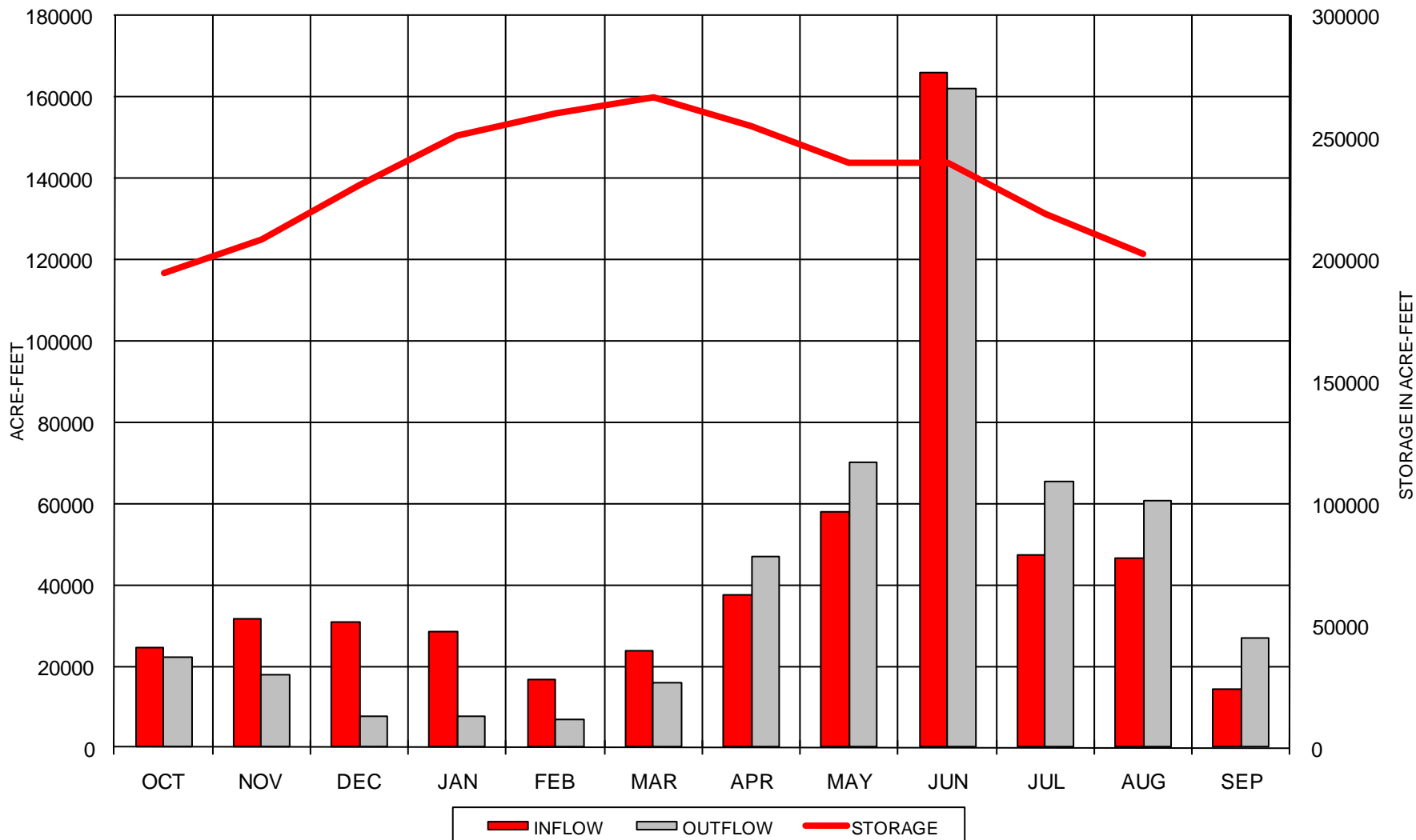
PUEBLO RESERVOIR PROJECT WATER RELEASES WATER YEAR 2010



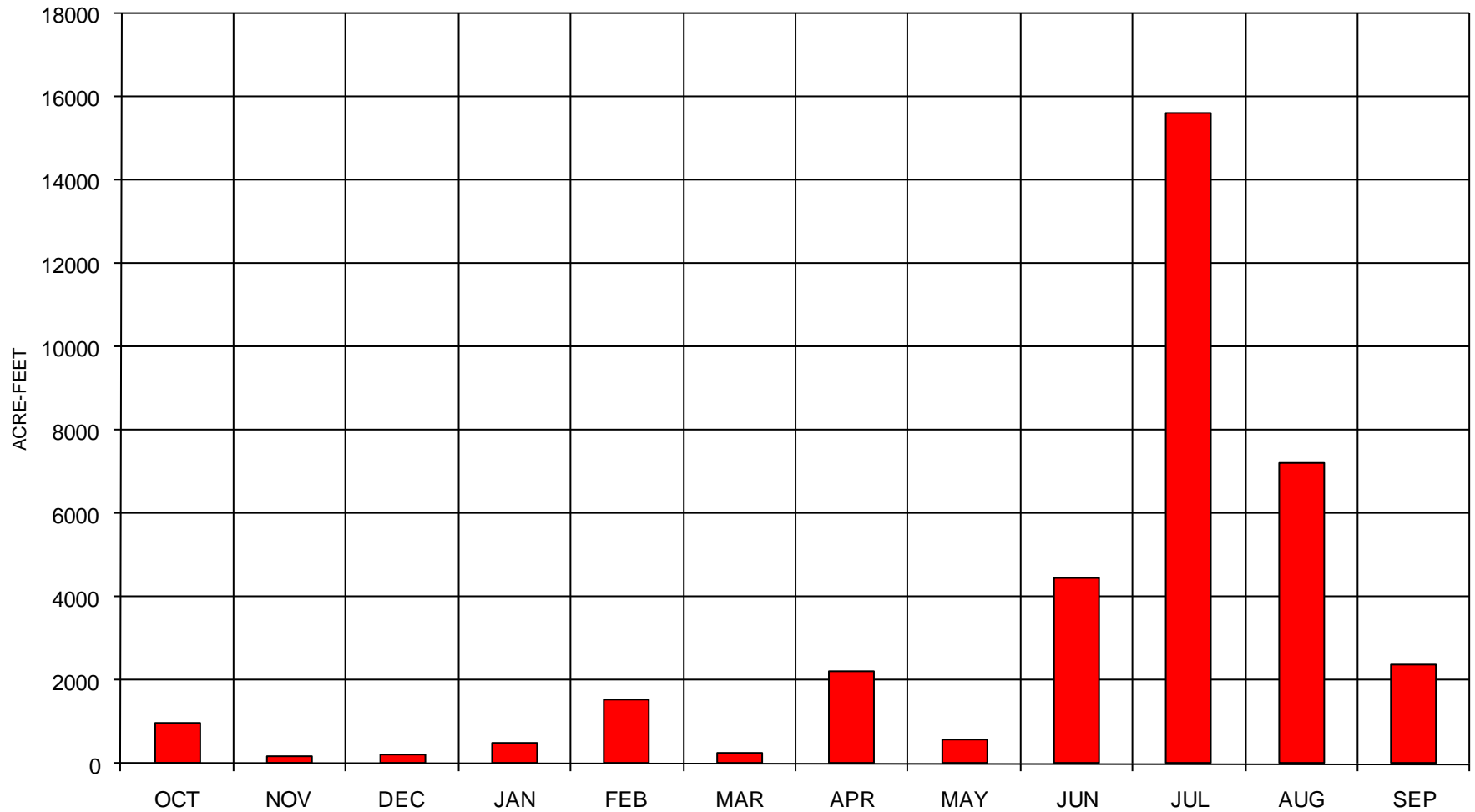
MONTHLY EVAPORATION AT PUEBLO DAM WATER YEAR 2010



PUEBLO RESERVOIR WATER YEAR 2010 ACTUAL OPERATIONS



PUEBLO RESERVOIR PROJECT WATER RELEASES WATER YEAR 2010



Twin Lakes Reservoir and Canal Company Exchange
with Fryingpan-Arkansas Project Water
2009-2010
Units = Acre-Feet

	Lincoln Creek below Grizzly Reservoir (1)	Roaring Fork River above Lost Man Creek (2)	Total (1 + 2) (3)(4)	Twin Lakes Storage (3) x 0.9913 ⁷
October	173	0	173	171
November	170	0	170	169
December	178	0	178	176
January	175	0	175	174
February	155	0	155	153
March	173	0	173	171
April	175	0	175	174
May	176	0	176	175
June	219	217	435	432
July	234	232	466	462
August	225	184	409	406
September	167	127	294	291
Total	2,220	760	2,980	2,954

⁷ .87% transit loss from the outlet of Twin Lakes Tunnel to Twin Lakes normally taken on all Twin Lakes Reservoir and Canal Company imported water.

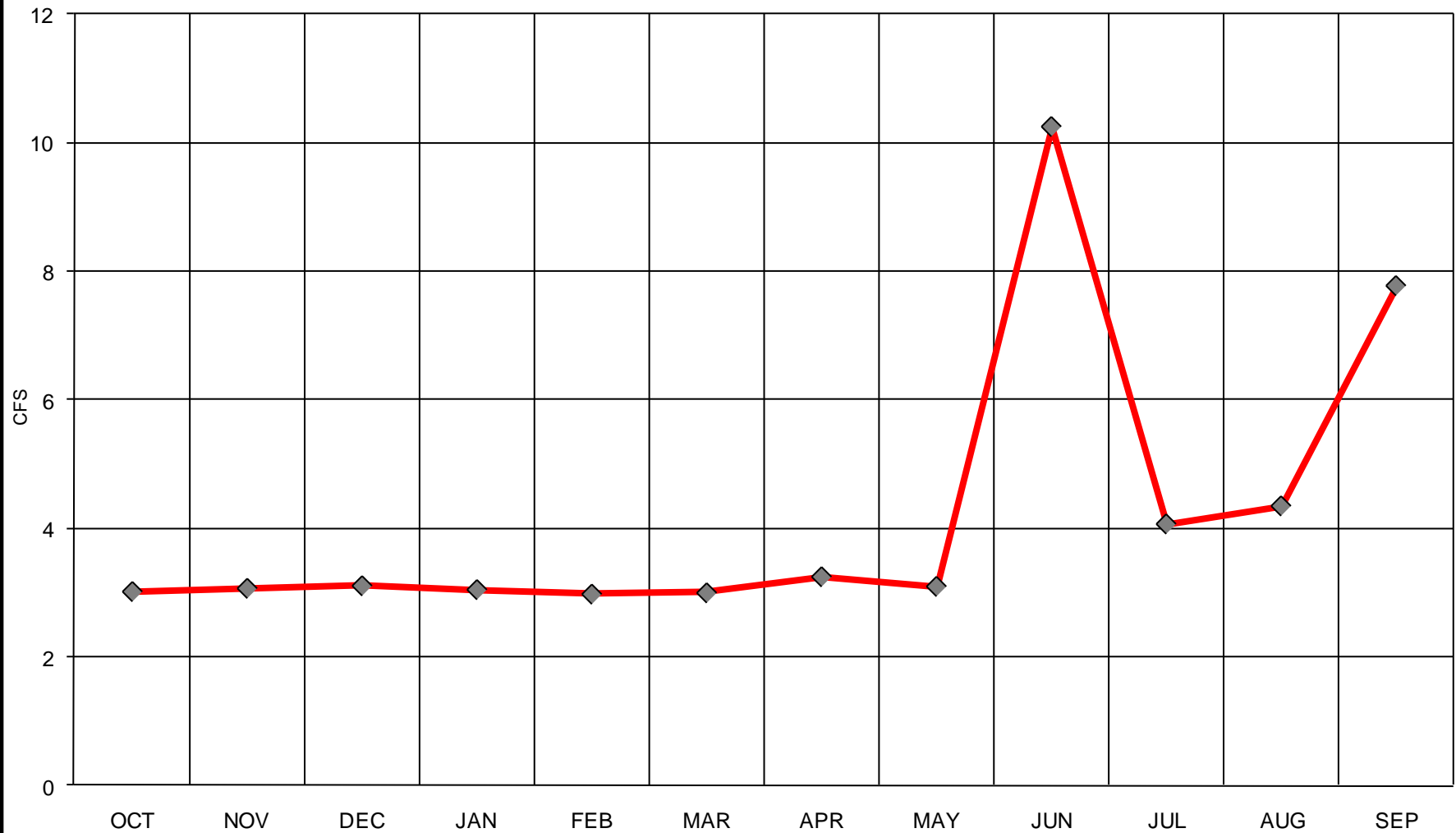
OPERATING CRITERIA

1. The water exchange will be implemented October 1 through September 30.
2. The releases to the Roaring Fork River at the Roaring Fork Diversion Dam and Lincoln Creek at the Grizzly Diversion Dam shall be accounted as follows:

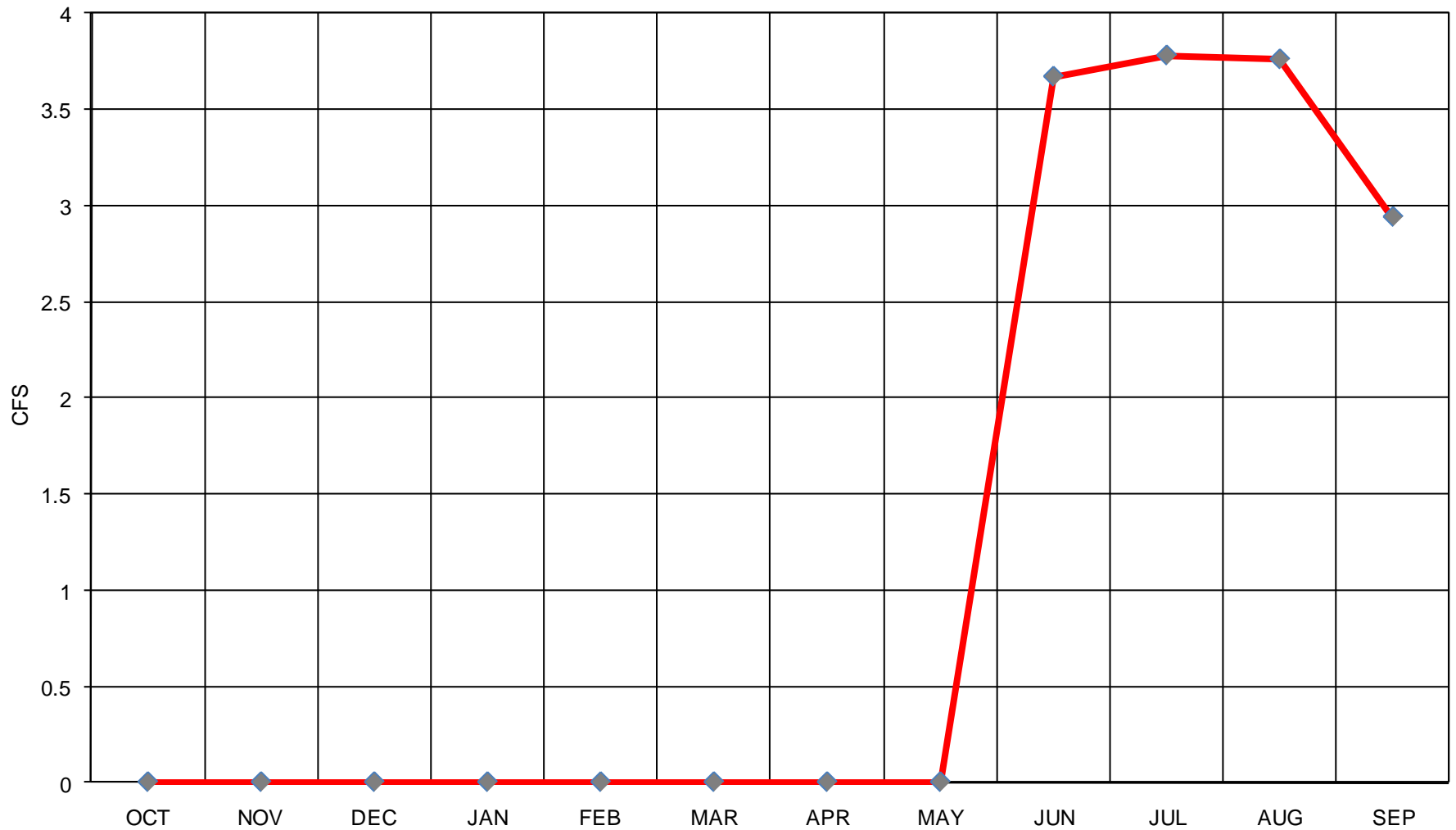
<u>Month</u> <u>Diversion(ft³/s)</u>	<u>Grizzly Diversion(ft³/s)</u>	<u>Roaring Fork</u>
October	3.0	0.0
November	3.0	0.0
December	3.0	0.0
January	3.0	0.0
February	3.0	0.0
March	3.0	0.0
April	3.0	0.0
May	3.0	0.0
June	4.0	4.0
July	4.0	4.0
August	4.0	3.0
September	4.0	3.0

3. At any time the Twin Lakes Reservoir and Canal Company (Company) is bypassing water, in addition to that designated above, it will be assumed that the Company could not have diverted that water and will not receive any credit for exchange in excess of the above amounts.
4. In the event less water than the above amounts is bypassed, only the amount actually bypassed will be credited.
5. The total volume of the release at both gages combined shall not exceed 3,000 acre-feet in any one water year.
6. No credit for exchange will be made on days when there is no documentation of such bypasses.
7. No credit will be given for water bypassed when diversions are called out by the State Engineer.

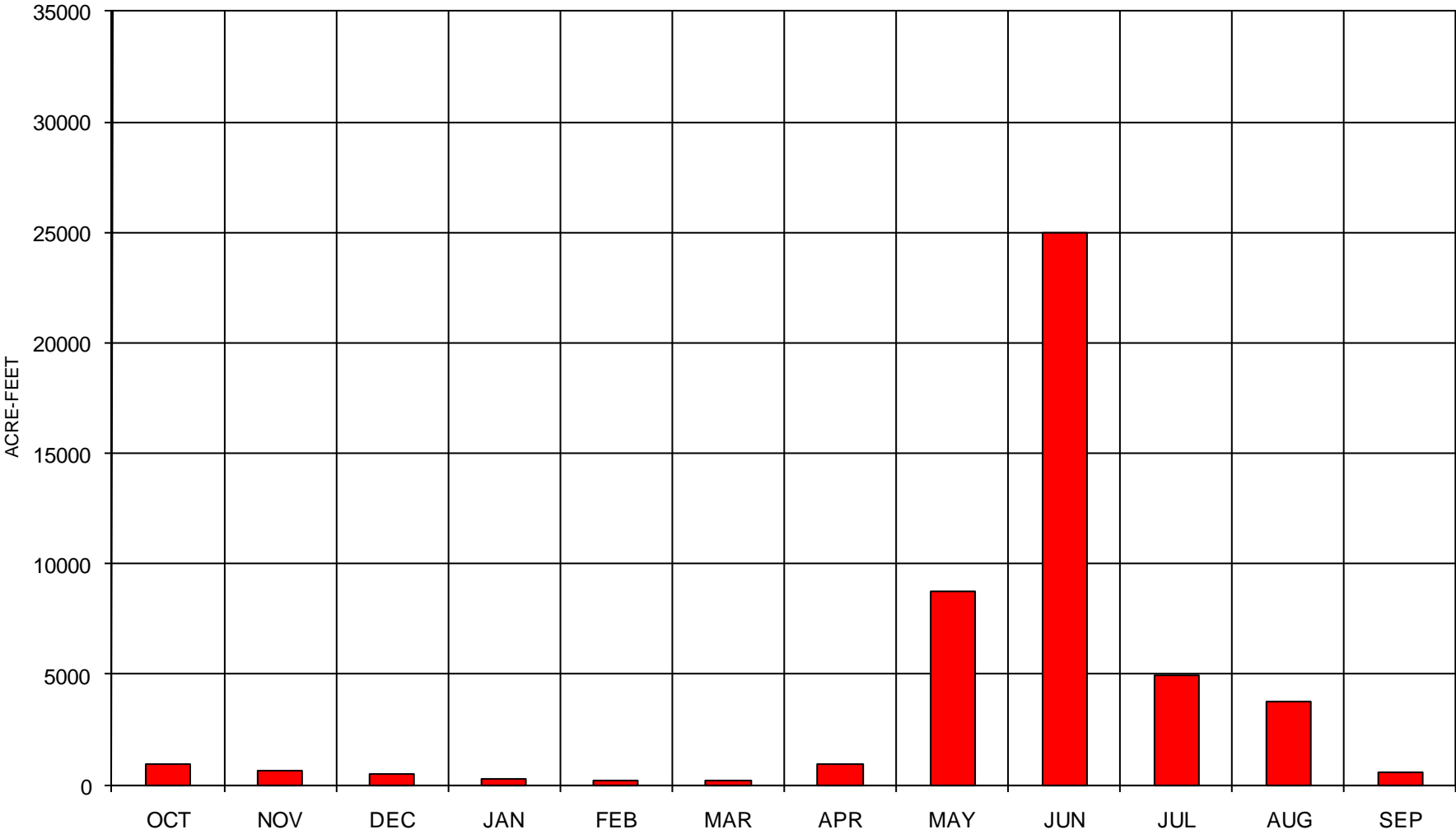
LINCOLN CREEK BELOW GRIZZLY RESERVOIR WATER YEAR 2010



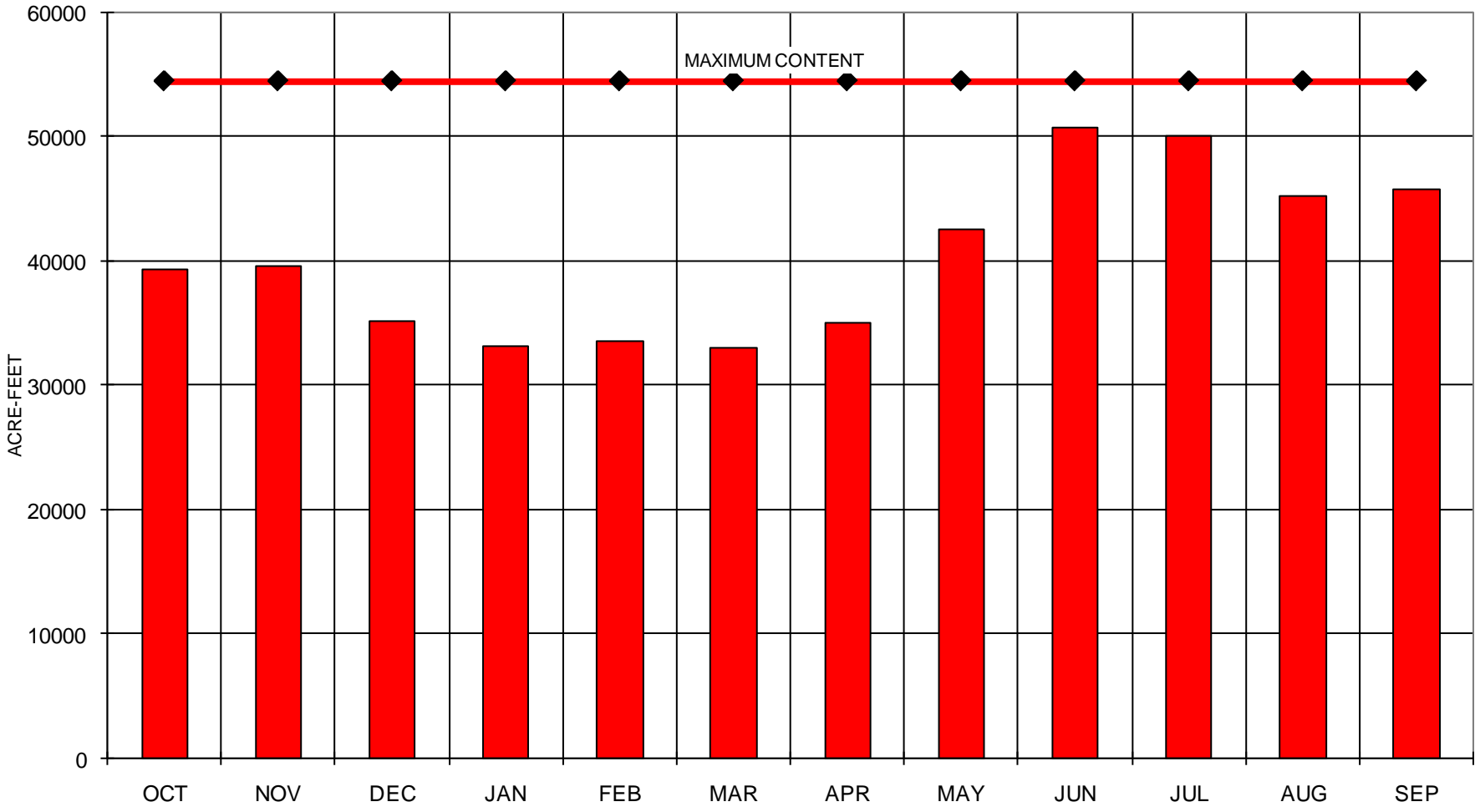
ROARING FORK ABOVE LOST MAN WATER YEAR 2010



TWIN LAKES TUNNEL IMPORTS WATER YEAR 2010



TWIN LAKES CANAL COMPANY STORAGE WATER YEAR 2010



Appendix D (1 of 15)
Carter Creek Feeder Conduit near Norrie, CO
Water Year 2010
Unit: Cubic Feet Per Second
Source: U.S. Bureau of Reclamation

<u>Day</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
1			52	16		
2			37	16	3	
3			34	14	8	
4			56	13	6	
5			33	11	4	
6			37	9	7	
7			54	8	4	
8			68	7	4	
9			64	8	3	
10			59	7	2	
11			48	8	1	
12			38	7	1	
13			34	6	1	
14			23	6	1	
15			17	6		
16			22	2		
17		2	27			
18		7	33			
19		8	37			
20		9	35			
21	1	9	32			
22	14	17	30			
23	7	21	28			
24	4	24	28			
25	2	12	27			
26		15	24			
27		59	21			
28		51	19			
29		56	20			
30		67	17			
31		54				
Total	28	411	1054	144	45	
Mean	6	27	35	9	3	
Max	14	67	68	16	8	
Min	1	2	17	2	1	
Acre-Feet	56	815	2091	286	89	

Water year total: 3,337 acre-feet

Maximum instantaneous peak: 83 cubic feet per second – June 8

Note: All blank spaces, recorder was not operated; no water was diverted.

Appendix D (2 of 15)
North Fork Fryingpan River Feeder Conduit near Norrie, CO
Water Year 2010
Unit: Cubic Feet Per Second
Source: U.S. Bureau of Reclamation

<u>Day</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
1			11	5		
2			10	4		
3			10	4		
4			7	3		
5			3	2		
6			3			
7			2			
8			2			
9			3			
10			4			
11			10			
12			11			
13			11			
14			9			
15			8			
16			9			
17			10			
18			10			
19			10			
20			10			
21			9			
22		2	9			
23		4	8			
24		5	8			
25		3	8			
26		2	7			
27		5	6			
28		9	6			
29		10	5			
30		11	5			
31		10				
Total		61	224	18		
Mean		6	7	4		
Max		11	11	5		
Min		2	2	2		
Acre-Feet		121	444	36		

Water year total: 601 acre-feet

Maximum instantaneous peak: 12 cubic feet per second – June 1

Note: All blank spaces, recorder was not operated; no water was diverted.

Appendix D (3 of 15)
Mormon Creek Feeder Conduit near Norrie, CO
Water Year 2010
Unit: Cubic Feet Per Second
Source: U.S. Bureau of Reclamation

<u>Day</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
1			54	12		
2			43	10	4	
3			41	9	8	
4			59	7	5	
5			60	6	5	
6			50	5	4	
7			47	4	3	
8			55	4	3	
9			58	4	2	
10			58	4	2	
11			52	4	1	
12			47	3	1	
13			40	2		
14			30	2		
15			27	1		
16			33			
17			37			
18		3	39			
19		5	38			
20		4	36			
21	1	9	33			
22	5	17	31			
23	3	23	28			
24	1	23	28			
25	1	12	24			
26		20	23			
27		41	20			
28		50	17			
29		33	15			
30		54	11			
31		53				
Total	11	347	1134	77	38	
Mean	2	25	38	5	3	
Max	5	54	60	12	8	
Min	1	3	11	1	1	
Acre-Feet	22	688	2249	153	75	

Water year total: 3,187 acre-feet

Maximum instantaneous peak: 62 cubic feet per second – June 4

Note: All blank spaces, recorder was not operated; no water was diverted.

Appendix D (4 of 15)
North Cunningham Feeder Conduit near Norrie, CO
Water Year 2010
Unit: Cubic Feet Per Second
Source: U.S. Bureau of Reclamation

<u>Day</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
1			26	6		
2			21	5		
3			19	4		
4			30	3		
5			28			
6			26			
7			26			
8			30			
9			37			
10			29			
11			24			
12			26			
13			20			
14			16			
15			15			
16			17			
17			21			
18		3	26			
19		4	20			
20		4	19			
21		8	18			
22	3	14	16			
23	5	18	15			
24		17	15			
25		9	13			
26		12	12			
27		22	10			
28		30	8			
29		29	7			
30		25	6			
31		25				
Total	8	220	596	18		
Mean	4	16	20	5		
Max	5	30	37	6		
Min	3	3	6	3		
Acre-Feet	16	436	1182	36		

Water year total: 1,670 acre-feet

Maximum instantaneous peak: 47 cubic feet per second – June 9

Note: All blank spaces, recorder was not operated; no water was diverted

.

Appendix D (5 of 15)
Middle Cunningham Feeder Conduit near Norrie, CO
Water Year 2010
Unit: Cubic Feet Per Second
Source: U.S. Bureau of Reclamation

<u>Day</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
1			33	6		
2			27	5		
3			26	4		
4			36	4		
5			23	3		
6			22	3		
7			42	2		
8			44	2		
9			44	2		
10			43	2		
11			38	2		
12			34	1		
13			29	1		
14			23	1		
15		7	21			
16		20	23			
17		7	23			
18		1	23			
19		2	23			
20	1	2	21			
21	1	4	19			
22	2	8	17			
23	2	13	15			
24	1	13	14			
25		7	12			
26		10	11			
27		20	10			
28		30	8			
29		26	7			
30		32	6			
31		32				
Total	7	234	717	38		
Mean	1	14	24	3		
Max	2	32	44	6		
Min	1	1	6	1		
Acre-Feet	14	464	1422	75		

Water year total: 1,975 acre-feet

Maximum instantaneous peak: 109 cubic feet per second – June 9

Note: All blank spaces, recorder was not operated; no water was diverted.

Appendix D (6 of 15)
Ivanhoe Creek Feeder Conduit near Norrie, CO
Water Year 2010
Unit: Cubic Feet Per Second
Source: U.S. Bureau of Reclamation

<u>Day</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
1			93	19		
2			109	17	1	
3			68	15	3	
4			95	14	2	
5			151	13	3	
6			163	11	3	
7			138	11	2	
8			145	11	2	
9			152	10	2	
10		5	144	8	1	
11		2	117	8		
12		5	99	7		
13		4	84	7		
14		3	61	7		
15		5	52	6		
16		4	57	2		
17		7	52			
18		14	48			
19		16	43			
20	4	16	41			
21	21	28	40			
22	29	49	37			
23	18	59	33			
24	14	48	28			
25	11	29	24			
26	8	40	23			
27	3	63	22			
28	2	94	21			
29	5	105	20			
30	1	90	18			
31		86				
Total	116	772	2178	166	19	
Mean	11	35	73	10	2	
Max	29	105	163	19	3	
Min	1	2	18	2	1	
Acre-Feet	230	1531	4320	329	38	

Water year total: 6,448 acre-feet

Maximum instantaneous peak: 241 cubic feet per second – June 6

Note: All blank spaces, recorder was not operated; no water was diverted.

Appendix D (7 of 15)
Lily Pad Creek Feeder Conduit near Norrie, CO
Water Year 2010
Unit: Cubic Feet Per Second
Source: U.S. Bureau of Reclamation

<u>Day</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
1			18	3		
2			20	2		
3			19	2		
4			18	2		
5			26	1		
6			37	1		
7			36	1		
8			25	2		
9			18	2		
10			14	1		
11			11	1		
12			10	1		
13			11	1		
14			9	1		
15		3	8	1		
16		3	7	1		
17		3	7	1		
18		4	7			
19		5	6			
20		7	6			
21		8	5			
22		10	5			
23		12	4			
24		13	4			
25		12	4			
26		14	4			
27		16	3			
28		15	3			
29		10	2			
30		12	2			
31		16				
Total		163	349	24		
Mean		10	12	1		
Max		16	37	3		
Min		3	2	1		
Acre-Feet		323	692	48		

Water year total: 1,063 acre-feet

Maximum instantaneous peak: 42 cubic feet per second – June 6

Note: All blank spaces, recorder was not operated; no water was diverted.

Appendix D (8 of 15)
Granite Creek Feeder Conduit near Norrie, CO
Water Year 2010
Unit: Cubic Feet Per Second
Source: U.S. Bureau of Reclamation

<u>Day</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
1			31			
2			27			
3			27			
4			35			
5			41			
6			46			
7			39			
8			34			
9			31			
10			28			
11			23			
12			25			
13			23			
14			19			
15			17			
16			17			
17			16			
18			16			
19			15			
20			14			
21		3	13			
22		4	12			
23		6	11			
24		9	11			
25		7	10			
26		11	10			
27		19	9			
28		42	8			
29		37	2			
30		32				
31		30				
Total		200	610			
Mean		18	21			
Max		42	46			
Min		3	2			
Acre-Feet		397	1210			

Water year total: 1,607 acre-feet

Maximum instantaneous peak: 67 cubic feet per second – June 6

Note: All blank spaces, recorder was not operated; no water was diverted

Appendix D (9 of 15)
No Name Creek Feeder Conduit near Norrie, CO
Water Year 2010
Unit: Cubic Feet Per Second
Source: U.S. Bureau of Reclamation

<u>Day</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
1			46	4		
2			40			
3			37			
4			48			
5			57			
6			62			
7			16			
8			1			
9			42			
10			15			
11			18			
12			37			
13			37			
14			29			
15			22			
16			23			
17			23			
18			21			
19			20			
20			19			
21	3	12	17			
22	5	24	14			
23		32	12			
24		34	10			
25		24	9			
26		39	9			
27		47	7			
28		25	5			
29		33	4			
30		48	4			
31		50				
Total	8	368	704	4		
Mean	4	33	23	4		
Max	5	50	62	4		
Min	3	12	1	4		
Acre-Feet	16	730	1396	8		

Water year total: 2,150 acre-feet

Maximum instantaneous peak: 86 cubic feet per second – June 6

Note: All blank spaces, recorder was not operated; no water was diverted

Appendix D (10 of 15)
Midway Creek Feeder Conduit near Norrie, CO
Water Year 2010
Unit: Cubic Feet Per Second
Source: U.S. Bureau of Reclamation

<u>Day</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
1			66	18		
2			74	16		
3			72	17		
4			59	12		
5			14			
6			73			
7			7			
8			15			
9			45			
10			17			
11			32			
12			61			
13			63			
14			51			
15			45			
16			54			
17			56			
18		3	56			
19		3	56			
20		4	54			
21	4	16	49			
22	7	27	43			
23		35	38			
24		35	36			
25		13	31			
26		42	27			
27		58	23			
28		35	19			
29		48	18			
30		74	17			
31		69				
Total	11	462	1271	63		
Mean	6	33	42	16		
Max	7	74	74	18		
Min	4	3	7	12		
Acre-Feet	22	916	2521	125		

Water year total: 3,584 acre-feet

Maximum instantaneous peak: 92 cubic feet per second – June 1

Note: All blank spaces, recorder was not operated; no water was diverted

Appendix D (11 of 15)
Hunter Creek Feeder Conduit near Norrie, CO
Water Year 2010
Unit: Cubic Feet Per Second
Source: U.S. Bureau of Reclamation

<u>Day</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
1			78	16		
2			69	9		
3			64	8		
4			64			
5			34			
6			17			
7						
8			2			
9			57			
10			16			
11			31			
12			62			
13			59			
14			43			
15			34			
16			49			
17			52			
18			53			
19			53			
20			49			
21		13	43			
22	11	33	35			
23		39	30			
24		37	29			
25		7	26			
26		40	26			
27		65	20			
28		87	16			
29		76	11			
30		89	11			
31		82				
Total	11	568	1133	33		
Mean	11	52	39	11		
Max	11	89	78	16		
Min	11	13	2	8		
Acre-Feet	22	1127	2247	65		

Water year total: 3,461 acre-feet

Maximum instantaneous peak: 130 cubic feet per second – May 28

Note: All blank spaces, recorder was not operated; no water was diverted.

Appendix D (12 of 15)
Sawyer Creek Feeder Conduit near Norrie, CO
Water Year 2010
Unit: Cubic Feet Per Second
Source: U.S. Bureau of Reclamation

<u>Day</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
1			43	17		
2			41	16	12	
3			39	16	10	
4			42	15	5	
5			46	14	10	
6			47	13	8	
7			44	12	7	
8			45	13	8	
9			45	14	6	
10			43	13	4	
11			38	12	3	
12			35	12	7	
13			33	11	7	
14			30	11	6	
15			27	10	6	
16	3	1	28	10	9	
17	2	3	30	9	9	
18	2	4	30			
19	3	4	31			
20		4	31			
21		6	29	12		
22		7	27	10		
23		10	25	10		
24		10	24			
25		10	23			
26		15	22			
27		22	20			
28		33	19			
29		43	18	10		
30		44	17	13		
31		44		13		
Total	10	260	972	286	117	
Mean	3	16	32	12	7	
Max	3	44	47	17	12	
Min	2	1	17	9	3	
Acre-Feet	20	516	1928	567	232	

Water year total: 3,263 acre-feet

Maximum instantaneous peak: 47 cubic feet per second – June 4

Note: All blank spaces, recorder was not operated; no water was diverted.

Appendix D (13 of 15)
Chapman Gulch Feeder Conduit near Norrie, CO
Water Year 2010
Unit: Cubic Feet Per Second
Source: U.S. Bureau of Reclamation

<u>Day</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
1			267	75		
2			265	59	12	
3			256	56	10	
4			265	40	5	
5			240	30	10	
6			295	19	8	
7			221	18	7	
8			188	20	8	
9			289	21	6	
10		6	192	18	4	
11		3	186	17	3	
12		4	247	16	7	
13		3	236	14	7	
14		2	188	13	6	
15		4	157	10	6	
16		3	191		9	
17		6	202		9	
18		14	202			
19		17	201			
20	5	17	188			
21	23	62	169			
22	43	121	150			
23	13	146	133			
24	7	156	127			
25	5	90	115			
26	4	161	110			
27	3	228	94			
28	4	252	81			
29	4	246	61			
30		281	37			
31		284				
Total	111	2106	5553	426	117	
Mean	11	96	185	28	7	
Max	43	284	295	75	12	
Min	3	2	37	10	3	
Acre-Feet	220	4177	11014	845	232	

Water year total: 16,488 acre-feet

Maximum instantaneous peak: 328 cubic feet per second – June 6

Note: All blank spaces, recorder was not operated; no water was diverted

Appendix D (14 of 15)
South Fork Fryingpan River Feeder Conduit near Norrie, CO
Water Year 2010
Unit: Cubic Feet Per Second
Source: U.S. Bureau of Reclamation

<u>Day</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
1			123	51		
2			100	46		
3			96	43		
4			117	35		
5			141	27		
6			144	18		
7			167	14		
8			166	15		
9			152	15		
10			151	12		
11			137	13		
12			121	15		
13			102	16		
14			82	15		
15			71	5		
16			84			
17			89			
18		4	88			
19		6	88			
20		7	84			
21	1	17	71			
22	3	31	64			
23	1	47	46			
24		44	42			
25		31	42			
26		55	46			
27		86	38			
28		119	26			
29		138	13			
30		128	15			
31		120				
Total	5	833	2706	340		
Mean	2	60	90	23		
Max	3	138	167	51		
Min	1	4	13	5		
Acre-Feet	10	1652	5367	674		

Water year total: 7,703 acre-feet

Maximum instantaneous peak: 212 cubic feet per second – June 8

Note: All blank spaces, recorder was not operated; no water was diverted.

Appendix D (15 of 15)
Fryingpan River Feeder Conduit near Norrie, CO
Water Year 2010
Unit: Cubic Feet Per Second
Source: U.S. Bureau of Reclamation

<u>Day</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>
1			190	61		
2			158	44	19	
3			145	35	38	
4			183	31	32	
5			278	21	35	
6			314	13	31	
7			318	10	25	
8			291	8	23	
9			276	7	21	
10		7	251	4	7	
11		5	198	2		
12		4	175	1		
13		2	151	2		
14		3	121	2		
15		8	101			
16		8	106			
17		16	101			
18		24	75			
19		24	72			
20	3	27	68			
21	12	49	58			
22	16	70	44			
23	11	93	26			
24	5	85	23			
25	3	67	11			
26	2	96				
27	1	141				
28	2	193				
29	2	223				
30	1	207	7			
31		193				
Total	58	1545	3741	241	231	
Mean	5	70	144	17	26	
Max	16	223	318	61	38	
Min	1	2	7	1	7	
Acre-Feet	115	3065	7420	478	458	

Water year total : 11,536 acre-feet

Maximum instantaneous peak: 406 cubic feet per second – June 6

Note: All blank spaces, recorder was not operated; no water was diverted.

OPERATING PRINCIPLES
FRYINGPAN-ARKANSAS PROJECT

ADOPTED BY THE STATE OF COLORADO

APRIL 30, 1959

(As amended December 30, 1959,
and December 9, 1960)

MARCH 15, 1961----Ordered to be printed

U. S. GOVERNMENT PRINTING OFFICE
WASHINGTON: 1961

H. RES. 91

In the House of Representatives, U. S.,
March 15, 1961.

Resolved, That there be printed as a House document the publication entitled “Operating Principles, Fryingpan-Arkansas Project, Adopted by the State of Colorado, April 30, 1959 (as amended December 30, 1959, and December 9, 1960)”, and that there be printed for the use of the Committee on Interior and Insular Affairs one thousand additional copies.

Attest:

Ralph R. Roberts, Clerk.

OPERATING PRINCIPLES, FRYINGPAN-ARKANSAS PROJECT

ADOPTED BY THE STATE OF COLORADO, APRIL 30, 1959

(As Amended December 30, 1959, and December 9, 1960)

The construction and operation of the project involve the diversion of water from the headwaters of the Fryingpan River and other tributaries of the Roaring Fork River to the Arkansas River Basin. The project contemplates—

- (a) The maximum conservation and use of water;
- (b) The protection of western Colorado water uses, both existing and potential, in accordance with the declared policy of the State of Colorado; and
- (c) The preservation of recreational values.

In order to accomplish such purposes, the project shall be operated by the United States in compliance with the Federal reclamation laws, the laws of the State of Colorado relating to the appropriation, use, or distribution of water, and the following operating principles:

1. As used herein:
 - (a) “Project” means that certain enterprise planned and designed by the Bureau of Reclamation, Department of the Interior, for the transmountain diversion of water from the headwaters of the Fryingpan River and other tributaries of the Roaring Fork River to the basin of the Arkansas River, together with all of its appurtenant works and facilities in both eastern and western Colorado.
 - (b) “Eastern Colorado” means that portion of the State of Colorado lying within the natural drainage basin of the Arkansas River.
 - (c) “Western Colorado” means that portion of the State of Colorado lying within the natural drainage basin of the Colorado River and served by diversions made from the Colorado River, or its tributaries, above its confluence with the Gunnison River.
 - (d) “Southeastern Colorado Water Conservancy District” means that entity created to contract for payment to the United States of an appropriate portion of project cost allocated to certain water uses in eastern Colorado.
 - (e) “Colorado River Water Conservation District” means that entity created by Colorado Revised Statutes 1953, 149-8, as amended.
 - (f) “Southwestern Water Conservation District” means that entity created by Colorado Revised Statutes 1953, 149-9, as amended.
 - (g) “Ruedi Reservoir” means the reservoir presently planned for construction on the Fryingpan River above the town of Basalt as part of the project.
 - (h) “Ashcroft Reservoir” means not only the reservoir contemplated for construction on Castle Creek, a tributary of the Roaring Fork River, but also, unless the context requires otherwise, any other reservoir that may be constructed in the Roaring Fork basin above the town of Aspen in lieu of that reservoir.
 - (i) “cfs” means cubic feet of water per second of time.

2. The Ruedi Reservoir shall be constructed and maintained on the Fryingpan River above the town of Basalt with an active capacity of not less than 100,000 acre-feet. In addition thereto and in order to offset adverse streamflow conditions on the Roaring Fork River above the town of Aspen which might occur as a result of the project enlargement of the Twin Lakes Reservoir, the Ashcroft Reservoir on Castle Creek, or some reservoir in lieu thereof, shall be constructed on the Roaring Fork drainage above Aspen to a capacity of approximately 5,000 acre-feet: Providing, However, That the Ashcroft Reservoir shall be constructed only if the Secretary of the Interior after appropriate study shall determine that its benefits exceed the costs: And providing further, That no part of the construction, operation, or maintenance of said Ashcroft Reservoir shall be chargeable to the Fryingpan-Arkansas project. All of such stored water shall be released under the conditions and limitations hereinafter set forth.
3. The receipts from the sale of water from Ruedi Reservoir, as permitted in paragraph 6(b) hereof, shall be applied solely to the operation and maintenance costs and to those reimbursable construction costs of said reservoir which exceed \$7,600,000. The cost of perpetual operation and maintenance of the Ruedi Reservoir shall be borne by users of project water and users of water stored in Ruedi Reservoir in such proportion as may be determined by the Secretary of the Interior.
4. The inclusion of the Ruedi Reservoir in the project shall not preclude the construction of any other replacement or regulatory reservoirs on the Colorado River or its tributaries above Cameo gaging station.
5. The Ruedi Reservoir shall be completed and in operation before any water is diverted to eastern Colorado by means of the project.
6. (a) The replacement capacity of Ruedi Reservoir, and any reservoir constructed in addition thereto, is that portion of the total reservoir capacity required to permit project diversions at times when such diversions could not otherwise be made because of simultaneous demands of senior diversions in western Colorado existing at the time of the adoption of these operating principles, and shall be so operated to accomplish this purpose. Water stored in such capacity shall be released by the United States, upon the request of the Colorado State engineer, to the extent that water would have been available to said decreed rights except for stream depletion resulting from diversions by this project to the Arkansas Valley.
- (b) The regulatory capacity of Ruedi Reservoir, and any reservoir constructed in addition thereto, is that portion of the total reservoir capacity not needed for replacement purposes. Water stored in such category may be sold or leased by the United States to water users in Colorado for any purpose recognized by the laws of the United States: Provided, That the sale of water for use outside the natural basin of the Colorado River can only be made with the consent of the Colorado River Water Conservation District. Charges for the use of such water shall be established by the Secretary of the Interior by appropriate contract in accordance with the payment ability of such water users.
7. The primary purpose of Ruedi Reservoir, and any reservoir constructed in addition thereto, is to furnish, to the extent of its capacity, in like manner as if the project were constructed by a water conservancy district organized pursuant to the laws of the State of Colorado, the water required for the protection of western Colorado water users by the provisions of Colorado

Revised Statutes 1953, 149-6-13, reading as follows:

However, any works or facilities planned and designed for the exportation of water from the natural basin of the Colorado River and its tributaries in Colorado, by any district created under this article, shall be subject to the provisions of the Colorado River Compact and the Boulder Canyon Project Act. Any such works or facilities shall be designed, constructed and operated in such a manner that the present appropriations of water, and in addition thereto prospective uses of water for irrigation and other beneficial consumptive use purposes, including consumptive uses for domestic, mining, and industrial purposes, within the natural basin of the Colorado River in the State of Colorado, from which water is exported, will not be impaired nor increased in cost at the expense of the water users within the natural basin. The facilities and other means for the accomplishment of said purpose shall be incorporated in, and made a part of any project plans for the exportation of water from said natural basin in Colorado.

8. Project diversions from Lime Creek shall be made only in the months of May and June of each year, unless the Colorado River Water Conservation District shall, by written communication, advise the Colorado State engineer that additional diversions can be made.
9. The respective decrees which may be or have been awarded to the parties hereto as a part of the Fryingpan-Arkansas project and Basalt project shall be administered by the proper officials of the State of Colorado, in accordance with the applicable laws of the State of Colorado, and with the following principles and procedures, to wit:

- (1) That the demand on the waters available under such decrees shall be allocated in the following sequence:

- (a) For diversion to the Arkansas Valley through the collection system and the facilities of the Fryingpan-Arkansas project in an amount not exceeding an aggregate of 120,000 acre-feet of water in any year, but not to exceed a total aggregate of 2,352,800 acre-feet in any period of 34 consecutive years reckoned in continuing progressive series starting with the first full year of diversions, both limitations herein being exclusive of Roaring Fork exchanges as provided in (c) below, and exclusive of diversions for the Busk-Ivanhoe decree; and with the further and absolute limitation that in order to protect existing and future beneficial uses of water in Western Colorado, including recreational and fishing values, the State engineer shall so regulate the transmountain diversions above referred to, to the end that no diversions shall be made which will reduce the remaining aggregate streamflows to less than either of the following minimum standards:

- (i) The Fryingpan collection system at the points of diversion collectively, exclusive of Lime Creek: 15 cfs October 1 through March 31; 30 cfs April 1 through September 30.

- (ii) Near Norrie (immediately below the junction of North Fork and Fryingpan River): 30 cfs October 1 through March 31; 100 cfs April 1 through April 30; 150 cfs May 1 through May 31; 200 cfs June 1 through June 30; 100 cfs July 1 through July 31; 75 cfs August 1 through August 31; 65 cfs September 1 through September 30.

In maintaining the above minimum standards, the project diversions shall be regulated, so far as is practicable, in such a manner that the North Fork of the Fryingpan River, the Fryingpan River, and each of the tributaries of those streams, shall contribute to the residual streamflows required by

those minimum standards quantities of water in proportion to their natural contributions.

- (b) For storage in Ruedi Reservoir to the extent of its actual capacity, which is to be not less than 100,000 acre-feet.
 - (c) For 3,000 acre-feet annually, to the extent that it is available in excess of (a) and (b) above, or such part thereof as may be required, to be delivered to the Twin Lakes Reservoir and Canal Company in exchange for equivalent releases from the headwaters of the Roaring Fork River which would otherwise be diverted through such Twin Lakes Reservoir and Canal Company collection and diversion system.
 - (d) For any other beneficial use in western Colorado in accordance with court decree, but not herein contemplated.
- (2) The effectuation of the above principles requires concurrent Fryingpan-Arkansas project diversion and Ruedi Reservoir storage to be accomplished in the manner following: The State engineer annually shall collect pertinent data, including information pertaining to snowpack and all other available evidence, and shall thereafter so divide and apportion the surface runoff as to achieve, as nearly as possible, the foregoing division of water and the maximum of concurrent diversions and storage. The diversions herein contemplated shall be on the basis of a water year hereby defined as that interim of October 1 through the following September 30.
10. For the protection of recreational values, including fishing, on the Fryingpan River below Ruedi Reservoir, releases of water from said reservoir, not to exceed the stream inflow, shall be made so that the streamflow immediately below the junction of the Fryingpan River and Rocky Fork shall not be reduced below 39 cfs from November 1 to April 30, and 110 cfs from May 1 to October 30, or as actual experience or court decree hereafter dictate.
11. An appropriate written contract may be made whereby Twin Lakes Reservoir and Canal Company shall refrain from diverting water whenever the natural flow of the Roaring Fork River and its tributaries shall be only sufficient to maintain a flow equal to or less than that required to maintain the recommended average flows in the Roaring Fork River immediately above its confluence with Difficult Creek in a quantity proportionate to the respective natural flow of the Roaring Fork River. The recommended average flows above mentioned are flows in quantities equal to those recommended as a minimum immediately above its confluence with Difficult Creek according to the following schedule submitted by the United States Fish and Wildlife Service and the Colorado Game and Fish Commission:

Month	Average Second-feet	Acre-feet (thousands)	Month	Average Second-feet	Acre-feet (thousands)
October	44	2.7	May	100	6.2
November	35	2.1	June	120	7.1
December	29	1.8	July	100	6.2
January	26	1.6	August	63	3.9
February	25	1.4	September	44	<u>2.6</u>
March	24	1.5			
April	64	3.8	Total	----	40.9

In maintaining the above averages, at no time shall the flow be reduced below 15 cfs during the months of August to April, inclusive, or below 60 cfs during the months of May to July, inclusive, providing the natural flow during said period is not less than these amounts.

The obligation to supply the minimum streamflow as set forth in the above table on the Roaring Fork River shall, to the extent of 3,000 acre-feet annually, be a project obligation to be supplied from any waters diverted from the south tributaries of Hunter Creek, Lime Creek, Last Chance Creek, or any of them.

The Twin Lakes Reservoir and Canal Company shall not be required to refrain from diverting water under its existing decrees from the Roaring Fork River except to the extent that a like quantity of replacement water is furnished to said company without charge therefore through and by means of project diversions and storage.

If by reason of storage capacity in the Ruedi Reservoir, or any reservoir constructed in addition thereto, the Twin Lakes Reservoir and Canal Company derives additional water or other benefits or advantages it would not have realized had this project not been constructed, then nothing herein contained shall prevent the project from making appropriate charges for such water or other benefits or advantages. All revenues derived from the use of water stored in Ashcroft Reservoir shall be used to assist in the repayment of the construction, operation, and maintenance costs of that reservoir, or any reservoir constructed in lieu thereof, as may be determined by the Secretary of the Interior.

12. All lands acquired and held for project construction and operation and water surfaces of project reservoirs will be open to the public for recreational purposes, excepting those areas reserved by the operating agency.
13. The project will be operated in such a manner that those in eastern Colorado using project water imported from the Colorado River Basin for domestic purposes shall have preference over those claiming or using water for any other purpose.
14. The project is to be operated in such a manner as to secure the greatest benefit from the use and reuse of imported project waters within project boundaries in the State of Colorado
15. Any and all benefits and rights of western Colorado water users in and to water stored in Green Mountain Reservoir, as described and defined in Senate Document 80, 75th Congress, 1st session, shall not be impaired or diminished by this project.
16. The project, its operation, maintenance, and use shall be subject to the provisions of the Upper Colorado River Basin Compact of October 11, 1948 (Public Law 37, 81st Congress, 1st session), and the Colorado River Compact of November 24, 1922 (House Document 605, 67th Congress, 4th session).
17. The Colorado River Water Conservation District of the State of Colorado shall acquire title to storage of water in Ruedi Reservoir and any reservoir constructed in addition thereto, by appropriate proceedings in the courts of the State of Colorado. The Southeastern Colorado Water Conservancy District of the State of Colorado shall likewise acquire title to the water required by the project for diversion to the Arkansas Valley. The Secretary of the Interior shall at any time after the authorization of the project have the option to obtain or require the transfer to the United States of any and all rights initiated or acquired by appropriation as herein set forth: Provided, however, That the rights so taken shall be subject to a beneficial use of such water as may be provided in the repayment contract or contracts, and subject to all the operating principles herein set forth.

18. No transmountain diversion of water shall ever be made through the collection and diversion system of the Fryingpan-Arkansas Project in excess of the quantitative limitations and conditions established by this document: Provided, however, That when under the laws of the State of Colorado, there may be additional water available for such collection and diversion which is not at the time of diversion required for beneficial use in western Colorado or for filling interstate water compact agreements, then such water may be collected and diverted for beneficial use in the Arkansas Valley: Provided further, That such additional diversion shall only be made with the mutual consent of each of the following agencies of the State of Colorado, to wit: the Colorado Water Conservation Board, the Southwestern Water Conservation District, the Colorado River Water Conservation District, and the Southeastern Colorado Water Conservancy District.
19. To assure project operation in conformity with the operating principle heretofore stated, to provide a means for the collection and interchange of information, and to provide a method for the continued study of project operations to the end that, if the stated operating principles may be improved upon, recommendations for changes may be made to the contracting parties, a commission shall be created in an appropriate manner to be composed of one representative of the Southeastern Colorado Water Conservancy District, one representative of the Colorado River Water Conservation District, two representatives of the United States, and one representative of the State of Colorado appointed by the Colorado Water Conservation Board after consultation with the Colorado Game and Fish Commission. The powers of such commission shall be limited to the collection of data, the making of findings of fact, and the suggestion of changes in operating principles.

These operating principles shall be deemed to have amended and take the place of those operating principles signed and executed on April 30, 1959. These operating principles shall be and do constitute a contract between the signatory parties, and shall inure to the benefit of and shall be and remain binding upon said parties, their respective successors and assigns.

Executed as amended at Denver, Colorado, this 9th day of December 1960.

COLORADO WATER CONSERVATION BOARD

Steve McNichols, Chairman;
Governor, State of Colorado

Attest:

Felix L. Sparks,
Director and Secretary

SOUTHEASTERN COLORADO WATER CONSERVANCY
DISTRICT

By J. Selby Young, President

Attest:

J. G. Shoun,
Secretary

COLORADO RIVER WATER CONSERVATION DISTRICT
By A. Allen Brown, President

Attest:
Philip P. Smith,
Secretary

SOUTHWESTERN WATER CONSERVATION DISTRICT
By Ira E. Kelly, President

Attest:
Archie B. Toner,
Secretary