BUREAU OF RECLAMATION

Fryingpan-Arkansas Project

Summary of Actual Operations
Water Year 2021

Annual Operating Plans

Ruedi Reservoir, Colorado

Eastern Colorado Area Office
Missouri Basin Region

U.S. Department of the Interior

April 2022

Mission Statements

The Department of the Interior (DOI) conserves and manages the Nation's natural resources and cultural heritage for the benefit and enjoyment of the American people, provides scientific and other information about natural resources and natural hazards to address societal challenges and create opportunities for the American people, and honors the Nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities to help them prosper.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Fryingpan-Arkansas Project

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Cover Photo: Morning view of Ruedi Reservoir in Colorado. Photo credit: Gary Barsness

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Project Highlights

Date	Event
August 16, 1962	Project authorized under Public Law 87-590.
August 1964	Construction began on Ruedi Dam.
November 2, 1965	Started excavating Charles H. Boustead Tunnel.
December 1965	Construction began on Sugar Loaf Dam.
April 15, 1968	Breached old Sugar Loaf Dam.
May 1968	Began storing water in Ruedi Reservoir.
June 15, 1969	Charles H. Boustead Tunnel "holed through".
July 1970	Construction began on Pueblo Dam - first contract.
May 16, 1972	Initial Project diversion from Chapman, South Fork, and Fryingpan diversion sites.
June 7, 1972	Initial diversion from Sawyer Creek.
July 1972	Construction began on Pueblo Dam - second contract.
July 1972	First sale of Project trans-mountain water.
January 9, 1974	Began storing water in Pueblo Reservoir.
May 6, 1974	Initial diversion from Lily Pad Creek.
May 4, 1976	Initial diversion from Ivanhoe Creek.
May 1977	First replacement water released from Ruedi Reservoir.
June 1977	First sale of water from Ruedi Reservoir.
November 22, 1977	Adopted the recommended bypass flow of 15 cfs or natural inflow, whichever is less on Lake Creek below Twin Lakes Dam.
June 1, 1979	Initial diversion from Middle Cunningham Creek.
June 4, 1979	Initial diversion from Mormon Creek.
June 14, 1979	Initial diversion from North Cunningham Creek.
May 8, 1980	Initial diversion from Hunter, Midway and No Name Creeks.
June 4, 1980	Initial diversion from North Fork and South Cunningham Creeks.

December 8, 1980	Federal Register notification of availability of water from Ruedi Reservoir.
April 28, 1981	Initial diversion from Carter Creek.
May 6, 1981	Initial diversion from Granite Creek.
June 1, 1981	Assume operation at Twin Lakes Dam.
June 23, 1981	Mt. Elbert Forebay filled.
September 29, 1981	Mt. Elbert Power Plant dedicated.
October 1, 1981	Mt. Elbert Unit #1 was made commercially available to Western Area Power Administration (WAPA) for their use.
May 5, 1982	Initial diversion from Halfmoon Creek.
July 29, 1982	Turquoise Lake filled for first time.
September 14, 1983	Initial diversion from south outlet works at Pueblo Dam for Pueblo West, CO.
August 9, 1984	Mt. Elbert Unit #2 was made commercially available to WAPA for their use.
May 24, 1985	Began storing water under Arkansas River Decree.
July 1, 1985	Initial diversion through Fountain Valley Conduit.
August 1985	Ruedi Hydroplant began operations.
November 27, 1985	Twin Lakes pipeline began operations.
May 7, 1986	Sugar Loaf Hydroplant began operations.
June 1986	Imports restricted due to high east slope storage.
November 10, 1987	Winter water storage decree approved and signed.
November 17, 1989	Initial release from Twin Lakes Reservoir for recreational benefits on the Arkansas River.
August 14, 1990	Initial release from Ruedi Reservoir for endangered fish (conservation flows pursuant to the biological opinion) in the Colorado River's "15-mile reach" for the U.S. Fish & Wildlife Service from water leased by the Colorado Water Conservation Board.
September 28, 1990	Dedication of Pueblo Fish Hatchery and the completion of construction on the Fryingpan-Arkansas Project ceremony.
November 1990	Final winter storage decree signed by court.
July 21, 1992	Dedication of Leadville Mine Drainage Tunnel Water Treatment Plant.

September 29, 1994	Transfer of Phase II of the Pueblo Fish Hatchery at Pueblo Reservoir to Colorado Division of Wildlife.
May 15, 1995	Final transfer of recreational facilities at Pueblo to the Department of Parks and Outdoor Recreation.
July 7, 1995	Began storing water under Arkansas River Decree.
July 18, 1995	All Project space filled with Project water. Imports curtailed.
July 1997	Reservoir level at Pueblo Reservoir restricted after a routine risk assessment of Pueblo Dam was completed and raised concern about the foundation below the spillway section of the dam.
May 1999	Pueblo Reservoir restriction lifted.
July 2000	Risk Analysis Study for Pueblo Dam completed.
July 11, 2000	Long-term contract between United States government and the Pueblo Board of Water Works executed.
September 11, 2001	As a result of the terrorist attacks on September 11, 2001, all Fryingpan-Arkansas Project facilities were closed to the public. The facilities remained closed until security measures to safeguard the federal investment were implemented. Reclamation has maintained a heightened level of security at Fry-Ark facilities since that time.
July 23, 2002	Initial release of water through Pueblo Board of Water Works South Outlet Works joint-use manifold.
September 12, 2007	Long-Term Contract between the United States Government and the city of Aurora executed.
May 2010	The upgrade to the control and monitoring system for the Fryingpan-Arkansas collection system was completed.
September 2012	Fiberoptic control of west slope systems from the east slope.
April 28, 2016	Southern Delivery System began water deliveries.
August 10, 2016	Lease of Power Privilege signed with SECWCD for the construction, operation, maintenance and replacement associated with hydropower at Pueblo Dam.
October 1, 2016	If and When Master Contract in effect.
May 14, 2019	Southeastern Colorado Conservancy District's James W. Broderick Hydropower Plant begins production of electricity at Pueblo Dam.

Annual Operating Plan Fryingpan-Arkansas Project Water Year 2021 Operation

General Overview

This is the 53rd annual operating plan (AOP) 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 power plant, 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 (WY) 2021 (October 1, 2020 through September 30, 2021). All tables can be found in Appendix A and all exhibits can be found in Appendix B.

Project Features in Operation during Water Year 2021

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 (AF) at a water surface elevation of 7,766.0 feet. The reservoir is operated on an annual cycle. Steady winter releases draft the reservoir such that it can be 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 and wildlife habitat.

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 eight 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 AF at a water surface elevation of 9,869.4 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. 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 Power Plant, 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. The Sugarloaf Powerplant, a privately-operated electrical generation station, runs when water is being conveyed from Sugarloaf Dam to the Mt. Elbert Conduit. All conduit flow which reaches the Mt. Elbert Forebay is used to generate electricity at the Mt. Elbert Power Plant 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 AF 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 (WAPA), 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 surveyed capacity of 140,855 AF at a maximum water surface elevation of 9,200 feet. Water surface elevations are measured with respect to mean sea level. The morning glory spillway is slightly tilted which reduces the active storage space by 498 AF. During construction, the dead pool (the elevation below which water cannot physically be released) was determined to be 9,157.5 feet (54,955 AF).

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 338,374 AF at a water surface elevation of 4,898.7 feet. The upper 26,990 AF of storage space are reserved exclusively for flood control at all times, while an additional 66,011 AF of space are reserved for flood control seasonally from April 15 through November 1. Pueblo Reservoir is also operated to provide for recreation, wildlife habitat, and flood control.

Non-project water may be stored in the reservoir under contract with Reclamation. 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.

Most water deliveries are made from the reservoir. The Fountain Valley Authority, the Pueblo West Metropolitan District, and the Pueblo Board of Water Works can take direct delivery of municipal water through the south outlet works and joint-use manifold. The Southern Delivery System (SDS) in the north outlet works delivers water to the Fountain Valley Authority and Pueblo West. A direct irrigation delivery is made to the Bessemer Ditch. Releases from the fish hatchery outlet at Pueblo Dam support the Pueblo Fish Hatchery. Other project and contract deliveries are made as releases to the Arkansas River for diversion downstream.

Southeastern Colorado Water Conservancy District (SECWCD) signed a Lease of Power Privilege contract with the Bureau to construct, operate, maintain and replace the James W. Broderick Hydroelectric Power Plant below Pueblo Dam. The design uses an existing hydropower bifurcation at the North Outlet Works Southern Delivery System connection. Initial construction began in 2017 and power production began in 2019.

Hydrologic Conditions and Weather Events in Water Year 2021

Precipitation over the collection system in Roaring Fork and Fryingpan watersheds was below average for almost all the months in WY2021. Cumulative precipitation started out the year below average in October and then in November increased to slightly above average. Both December and January were below average with January receiving 52 percent of average. Then in February precipitation increased significantly ending the month at 128 percent of average. March also received above average precipitation but not as significant of an increase as in February. Precipitation then plummeted in April receiving only 37 percent of average. May was slightly better than April at 83 percent of average and then in June and July precipitation returned to above average. July saw significant increases from monsoonal rain events and recorded 153 percent of average. Then in August and September precipitation reduced significantly with September only measuring 57 percent of average precipitation in the basin. Total precipitation for the year finished out at 88 percent of average at the end of September.

Snow pack accumulation in the watershed above Ruedi was similar to precipitation in that it remained below median for the majority of the snow accumulation season. Snow accumulation started out above median in October but tapered off in November through January. January was the worst month of the winter with the snowpack at only 55 percent of median. However, in February the basin received above median snow accumulation measured in the Fryingpan basin group of SNOTEL sites which include: Fremont Pass, Independence Pass, Brumley, and Kiln. February snow accumulation was 127 percent of median by the end of the month. This trend was quickly reversed in March wheen the snowpack only measured 25 percent of median. Then in April temperatures started warming and the snowpack started melting. In April the snowpack

decreased faster than the historic median rates, losing snowpack at twice the normal rate. On average, all the SNOTEL sites in the Fryingpan basin group melted out by June 15, five days earlier than normal.

The combined snow water equivalent (SWE) compared to average is shown in Exhibit 1.

The monthly temperatures measured at the group of SNOTEL sites in the upper Fryingpan River basin were above average for every month in WY2021. The average basin temperatures in October started out the year at four degrees above average. It wasn't until February and March that temperatures cooled down to near average. With both February and March slightly less than one degree above average. Then after March every month except July was at least one degree above average. The fall months had the warmest temperatures with September the warmest month of the year at 4.1 degrees above average. The seasons of the year averaged the following temperature deviations above average: autumn 4.0, winter 1.7, spring 1.4, and summer 1.9 degrees above average. Overall, the year averaged 2.2 degrees above average.

Import forecasts were made using the PyForecast software package. The forecasts for 2021 were: February 40,200 AF; March 44,100 AF; April 46,300 AF; May 38,000 AF. The total water through the Boustead Tunnel was 34,418 AF. Total imports in WY2021 were 31,920 AF.

The collection system began diverting in mid-April. Runoff began April 30.

The flows through Boustead Tunnel can only be stored when the flow at the Fryingpan River near Thomasville gage is above a minimum flow. When flows are below the minimum, any imports from seepage are considered developed water and treated as native. Water is diverted from the collection system to the Fryingpan to keep the flow above minimum. See Exhibit 5 for flows at the Thomasville gage.

Report on Operations during Water Year 2021

A. Ruedi Reservoir

Ruedi Reservoir started out WY2021 with a storage content of 70,271 AF, which was 88 percent of average. During the winter months Ruedi Reservoir was drawn down, reaching its lowest storage content for the year of 58,388 AF on April 27. In Late-October the release from Ruedi was decreased to the winter flow target of 45 cfs and was held at this rate until January when it was increased to 60 cfs for a few months. This increase in flow was because the Colorado Water Conservation Board (CWCB) leased water to be released during the coldest months of the winter to alleviate anchor ice in the lower Fryingpan River. All releases during the winter months were made through the city of Aspen's hydroelectric powerplant.

In January, the first forecast of undepleted inflow to Ruedi was computed. This forecast indicated that the runoff resulting from snowpack melt in the basin would be 72 percent of average resulting in an April through July runoff volume of 100 kaf. Reservoir storage was below average at the beginning of the month and modeling of reservoir futures based on the January undepleted inflow forecast suggested that continuing at the current release would not fill the reservoir by July. The only change of reservoir release in January was for the anchor ice mitigation contract release.

In February, the undepleted inflow forecast decreased to 64 percent of average. This predicted that the undepleted inflow volume would be 88.4 kaf for the April through July period. Reservoir

storage remained below average and the release from the reservoir was held constant at 60 cfs throughout the month until the anchor ice mitigation contract water ran out and the release was returned to 45 cfs. Modeling of reservoir futures based on the February undepleted inflow forecast indicated that the reservoir would not fill as normal in July.

In March, the undepleted inflow forecast increased slightly to 71 percent of average. The resulting April through July undepleted inflow volume was projected to be 98.6 kaf. The reservoir storage continued to be below average. Modeling of reservoir futures indicated that the reservoir would not fill under the most probable assumptions. Therefore, no changes were made to the reservoir release in March.

In April, the forecast of undepleted inflow for the April through July period predicted 111.5 kaf, 80 percent of average. This forecast projected that Ruedi would not fill under the most probable and the minimum reasonable scenarios, however, under the max reasonable scenario the reservoir was projected to achieve a physical fill. Because of the warm and dry conditions in the Colorado River Basin irrigation started early and flows in the Colorado River were not enough to satisfy the demands in the lower valley. As a result, the Colorado Department of Water Resources (CODWR), Division 5, placed the Cameo call which required Ruedi bypass all inflow and release water for augmentation contracts. Ruedi bypassed inflow from April 13th though April 29th when the Cameo call was in force.

Runoff started to increase in early May and releases from the reservoir were increased to the minimum required flow of 110 cfs. The most probable forecast of undepleted inflow dropped from the April forecast down to 81.9 kaf or 59 percent of average over the April to July period. This forecast indicated that the reservoir would not fill under all three modeling scenarios. With this extremely low runoff forecast the operations model projected that there would not be enough water to make Coordinated Reservoir Operations (CROS) releases, fill the 4 out of 5 endangered fish pool, and therefore fill the reservoir.

On May 6, the annual conference call took place as required under stipulation 1.7.b of Case Numbers 02CW324 & 02CW365 between the following parties: BOR; Southeastern Colorado Water Conservancy District (SECWCD); CODNR Division 5; and the Colorado River District. A consensus was reached that Ruedi would not fill under all operations model scenarios which would disallow Reclamation from diverting the additional 45 cfs through the Boustead Tunnel in accordance with stipulation 5 of the above-mentioned Case Numbers. The representatives for each of the parties were BOR: Tim Miller, Terry Dawson, Michael Holmberg and Roy Vaughan; SECWCD: Garrett Markus; CODWR: James Heath, Alan Martellaro and Bill Blakeslee; Colorado River District: Don Meyer. As a result of the consensus, on May 6 the Colorado River District placed a call on the Ruedi senior fill right with the State of Colorado Division of Water Resources Division 5. After this call was placed, the Boustead Tunnel was limited to 900 cfs of Fryingpan River diversions

In June, the forecast of remaining inflow continued to decrease, with the projected April through July volume decreasing to 75.7 kaf or 55 percent of average.

Depleted inflows to Ruedi Reservoir were below average for every month of WY2021. The total depleted inflow volume for the April through July runoff period was 48,633 AF which was 57 percent of average and was the fourth lowest runoff volume for the period of record starting in 1975. Reservoir storage reached a maximum physical content of 83,255 AF on July 11. This storage content represented 81 percent of the total capacity of the reservoir.

Ruedi Reservoir was in priority for the majority of WY2021 and allowed to store all inflow except during the following periods when the reservoirs fill right was called out: April 13- 29, July 11- July 14, July 17- July 31 and August 8- October 19. During these times, Ruedi was required to release all inflow, make contract releases, and provide Boustead Tunnel replacement releases to the Colorado River. Ruedi Reservoir released 529 AF of water for out-of-priority Boustead Tunnel diversions and 5,381 AF for regular Round I and Round II contracts.

Ruedi Reservoir did not participate in the CROS operations for WY2021and beginning on July 21 contracted water was released to support fish recovery efforts in the 15-mile reach of the Colorado River. These releases are designed to enhance habitat for endangered fish in the Colorado River. A total of 17,762.5 AF of water was released between July 21 and October 16 for endangered fish recovery. This total includes the following: 7,350 AF water leased from the Colorado River District, Ute Water, the Town of Palisade, Caerus Piceance LLC, and Garfield County; 10,412.5 AF of water which includes both 5000 AF from the firm endangered fish pool and 5,412.5 AF from the mitigation fish pool. The 5000 AF 4-out-of-5 fish pool was not available in WY2021 because Ruedi did not physically fill. Ruedi also released 3,500 AF for anchor ice prevention in the lower Fryingpan River from January 1 through the end of February. This water was leased from the Colorado River District by the CWCB. In addition to this, Ruedi released 1,539 AF from the Ruedi Insurance Pool to supplement impacts from the dry up of the Red Top Valley Ditch for the 10,825 water. The dry up of the ditch resulted in reduced Colorado River base flow and increased the Green Mountain Reservoir replacement obligations. The Ruedi Insurance Pool mitigates this injury by providing up to 2,000 AF of contracted water annually during years when the cities of Denver and Colorado Springs owe water towards Green Mountain Reservoir's storage water right. Reservoir storage reached a maximum physical content of 83,256 AF on July 11. This storage content represented 95 percent of the total capacity of the reservoir.

Ruedi ended the water year at a water surface elevation of 7,718.96 feet which equates to 62,096 AF of storage. That volume was 78 percent of average for September 30.

Ruedi releases for contracts are shown in Table 2. Releases for endangered fish are shown in Table 3. Monthly precipitation data and evaporation data for Ruedi can be found in Exhibit 2 and Exhibit 3 respectively.

B. West Slope Collection System and Project Diversions

The most probable forecasts for the first of February, March, April, and May were 40,200 AF, 44,100 AF, 46,300 AF, and 38,000 AF, respectively. There was a significant decrease in precipitation along with warm temperatures leading to early snowmelt in May as noted above. Runoff peaked in June with most of the flow coming from snow melt and very little from precipitation. A total of 34,418 AF of the water diverted through the Boustead Tunnel and 31,920 AF of water was stored during the WY2020. The imports were 57 percent of average for the period from WY1972 to WY2021 and 84 percent of the May 2021 forecast.

The import of project water through the Boustead Tunnel began on April 30. The maximum mean daily import through Boustead Tunnel was 771 cfs on June 6. The diversion system was shut down in early August. Boustead Tunnel seepage was recorded whenever the Fry-Ark Project water rights were in priority. There was 1,242 AF of Busk-Ivanhoe water conveyed through the Boustead Tunnel. The daily discharge record for the diversion structures is included as Appendix D. An aggregated discharge record is shown on Table 4. The 48 years of accumulated imports total 2,637,900 AF, for an unimpeded average of 55,545 AF per year, shown on Table 5. A plot of the

Boustead Tunnel imports during WY2021 is shown on Exhibit 6.

Since Ruedi Reservoir was not forecast to fill this year imports through the Boustead Tunnel were constrained to a maximum of 900 cfs plus half of the daily flow from Hunter system.

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 (TLCC). The total amount of the TLCC exchange was 3,000 AF. The operating criteria and the monthly summary of the exchange are shown in Appendix C.

D. Turquoise Lake

On September 30, 2020 there was 94,026 AF of water (elevation 9,848.73 feet) stored in Turquoise Lake, 88 percent of average. The high point for storage was 103,817 AF of water (elevation 9854.64 feet) on July 23. Releases made down Lake Fork Creek and to Twin Lakes drafted Turquoise Lake to 61,383 AF (9,827.25 feet), the lowest storage of the water year, on May 9. On September 30, 2021 there was 79,153 AF, an elevation 9839.38 feet, 74 percent of average. Exhibits 8 and 9 show the precipitation and pan evaporation at Turquoise Lake. Table 6 and Exhibit 10 depict the monthly operation of Turquoise Lake during WY2021.

There was 27,771 AF imported through Homestake Tunnel to the account in Turquoise Reservoir.

Busk-Ivanhoe imports through the Carlton Tunnel stored totaled 3,006 AF. Pueblo Water received 865 AF and the City of Aurora received 2,097 AF. Pueblo Water imported 1,242 AF from Ivanhoe Reservoir through the Boustead Tunnel.

Project water imports through the Boustead Tunnel totaled 31,921 AF.

Exhibit 6, Exhibit 7, and Exhibit 8 show the monthly imports through the Boustead, Homestake, and Busk- Ivanhoe Tunnels, respectively.

E. Mt. Elbert Conduit/Halfmoon Creek Diversion

Between October 1 and September 30 there was 76,791 AF of water released from Turquoise Lake through the sleeve valves and into Mt. Elbert Conduit. The Sugarloaf Powerplant was not in operation this year. There was 4,550 AF of water released through the bypass and into the conduit. There was 11,192 AF of water diverted from Halfmoon Creek and conveyed through the Mt. Elbert Conduit to the Mt. Elbert Forebay, and subsequently to Twin Lakes through the Mt. Elbert Power Plant. An additional 3,909 AF of water were released into the conduit from Turquoise Lake for use by the Leadville Federal Fish Hatchery. The water was diverted from the conduit and delivered to the hatchery. It was then returned to the Arkansas River and stored in Pueblo Reservoir. The conduit operations are shown in Exhibit 11.

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

On September 30, 2020 Twin Lakes had 102,976 AF of water stored (elevation 9184.41 feet) and Mt. Elbert Forebay had 8,834 AF in storage (elevation 9637.04feet). The Twin Lakes/Mt. Elbert Forebay combined water storage reached a low point of 87,708 AF on March 5 and was at its high point of 130,854 on June 24. The storage in Twin Lakes was 111,954 AF and in Mt. Elbert Forebay was 9,091 AF of water (Twin Lakes elevation 9,188.51 feet and Mt. Elbert Forebay elevation 9,638.03 feet) on September 30, 2021, 98 percent of average.

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

The native inflow of 3,432 AF was stored in the Twin Lakes Canal Company (TLCC) storage space from November 15 through March 15 as winter water storage. A total of 7,027 AF of project water was released to Lake Creek during this time.

Exhibit 13 and Exhibit 14 show the precipitation and pan evaporation at Twin Lakes. Table 7 and Exhibit 15 depict the monthly operation of Twin Lakes during WY2021.

A total of 10,000 AF of Fry-Ark Project water was made available at the beginning of the season to the Upper Arkansas Voluntary Flow Management Program (VFMP) to augment flows at the gage Arkansas River at Wellsville. Colorado Parks and Wildlife called for 8,433 AF. While the Bureau of Reclamation is not a party to the agreement between Southeastern Colorado Water Conservancy District; Colorado Parks and Wildlife; Chafee County; the Arkansas River Outfitters Association; and Trout Unlimited, project water is made available when possible to support this agreement. Water may be called for year-round to support fishery flows at 250 cfs. Recreational flows may be provided from July 1 to August 15 if the flow at Wellsville is below 700 cfs. The flows may be ramped down to prevent streambank erosion after August 15.

A total of 217,416 megawatt hours of energy was generated at the power plant, with 578,617 AF of water; 94,659 AF came through the Mt. Elbert Conduit; and 489,602 AF were first pumped to the Mt. Elbert Forebay from Twin Lakes during off-peak electric demand hours. Table 8 depicts the monthly power plant operation for WY2021.

G. Pueblo Reservoir

The water storage content of Pueblo Reservoir was 180,328 AF (elevation 4,864.01 feet) on September 30, 2020. The reservoir reached a high point in storage of 211,500 AF (elevation 4,872.31 feet) on April 1 and a low point on October 24 of 177,199 AF (elevation 4,864.01 feet). On September 30, 2021, there was 181,798 AF in storage at elevation 4864.42 feet, which was 113 percent of average.

A total of 59,046 AF of native inflow was stored in the reservoir under the Pueblo Reservoir winter water storage program between November 15, 2020 and March 14, 2021. This program allows agricultural entities to store native flows during the winter to be used during irrigation season. On March 14, it was distributed to agricultural entities.

Table 9 and Exhibit 19 depict Pueblo Reservoir monthly operations during Water Year 2021. The 2020-2021 winter water storage is shown on Exhibit 16, and the winter water releases are shown on Exhibit 17. The precipitation and evaporation at the reservoir are shown on Exhibits 15 and 18. Project water releases are shown on Exhibit 20.

H. Storage Contracts

There were four long term storage contracts for a total of 57,416 AF of non-project storage in Turquoise Lake, one for 54,452 AF in Twin Lakes and eight for 59,924 AF in Pueblo Reservoir.

There were six short-term if-and-when contracts totaling 3,740 AF for 1-year contracts in Pueblo Reservoir. Sixteen contracts totaling 6,575 AF under the Master Contract were used for “if-and-when” storage. Under "if and when" contracts, non-project water may be stored in project storage space if that storage space is not required for project water.

I. Project Water Sales and Deliveries

There was 25,775 AF of Fryingpan-Arkansas Project water made available to the Southeastern Colorado Water Conservancy District (SECWCD) during WY2021 for allocation based on an expected import of 38,000 AF. Municipal and industrial accounts received a total of 10,785 AF and agricultural accounts received 7,334 AF. Entities called for 10,548 AF of project and 5,997 project carryover water during the year.

Evaporation reduced the project carryover water in storage by 8,955 AF. By the end of the water year, the District had 11,946 AF of WY2021 allocated water and 114,928 AF of carryover water remaining in storage. The monthly release of project water from Pueblo Reservoir is shown on Exhibit 19.

J. Reservoir Storage Allocation Data

Table 10 presents the reservoir storage allocations for the five project reservoirs.

K. Reservoir Evaporation and Precipitation

Table 12 and Table 13 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 11. The assumption is that there is no evaporation from a reservoir water surface when ice completely covers the reservoir.

L. Flood Control Benefits

The Army Corps of Engineers estimated that the operations at Ruedi Reservoir or Pueblo Reservoir during WY2021 did not prevent flood damages.

Table 14 shows the historic flood control benefits provided by Pueblo and Ruedi Dams.

Appendix A: Tables

Table 1: Ruedi Reservoir Operations WY2021Fryingpan-Arkansas Project (Units = 1,000 AF).

Month	Inflow	Evaporation	Outflow	End of Month Content	Water Surface Elevation (feet)
OCT 20	2.20	0.10	8.80	63.90	7,721.50
NOV 20	1.70	0.00	2.30	63.30	7,720.66
DEC 20	1.50	0.00	2.40	62.30	7,719.22
JAN 21	1.40	0.00	3.40	60.30	7,716.46
FEB 21	1.70	0.00	3.30	58.70	7,714.19
MAR 21	1.90	0.00	2.20	58.40	7,713.74
APR 21	4.90	0.00	3.90	59.40	7,715.14
MAY 21	15.20	0.20	6.20	68.40	7,727.37
JUN 21	20.20	0.50	6.00	82.00	7,744.09
JUL 21	8.20	0.50	8.50	81.20	7,743.17
AUG 21	7.40	0.40	12.50	75.70	7,736.67
SEP 21	2.80	0.20	16.30	62.10	7,718.96
Total* (acre-feet)	**69,065**	**1,847**	**75,825**	-	-

*Rounding may introduce discrepancies between monthly and yearly totals

Table 2: Ruedi Reservoir Releases for Contracts WY 2021 (Units = AF).

Month	Round 1	Round 2: Non-fish	Round 2: Fish
Oct 20	-	-	-
Nov 20	-	-	-
Dec 20	-	-	-
Jan 21	-	1,981	-
Feb 21	-	1,519	-
Mar 21	-	-	-
Apr 21	66	236	-
May 21	-	-	-
Jun 21	-	-	-
Jul 21	165	703	512
Aug 21	340	1,308	4,096
Sep 21	246	1,432	10,019
Oct 21	111	774	3,136
TOTAL	**927**	**7,953**	**17,762**

Table 3: Ruedi Reservoir Releases for Endangered Fish WY2021.

FRYINGPAN-ARKANSAS PROJECT
RUEDI RESERVOIR
RELEASES FOR ENDANGERED FISH
WATER YEAR 2021
April

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? (Y= YES) (N= NO)	REQUIRED MIN FLOW BELOW RUEDI w/o FISH REL (CFS)	REQUIRED FISH RELEASE (CFS)	CUMULATIVE FISH RELEASE (AC-FT)	PALISADE GAGE (CFS)
THU	4/1/2021	7,713.75	58,395	46	-	42	2	45	N	39	-	-	1,324
FRI	4/2/2021	7,713.79	58,423	56	-	42	3	45	N	39	-	-	1,302
SAT	4/3/2021	7,713.82	58,443	53	-	42	3	45	N	39	-	-	1,192
SUN	4/4/2021	7,713.89	58,492	67	-	42	3	45	N	39	-	-	1,278
MON	4/5/2021	7,713.99	58,562	77	-	42	3	45	N	39	-	-	1,205
TUE	4/6/2021	7,714.14	58,667	94	-	41	3	44	N	39	-	-	1,285
WED	4/7/2021	7,714.28	58,765	90	-	41	3	44	N	39	-	-	1,348
THU	4/8/2021	7,714.43	58,871	94	-	41	3	44	N	39	-	-	1,160
FRI	4/9/2021	7,714.57	58,969	91	-	41	3	44	N	39	-	-	866
SAT	4/10/2021	7,714.69	59,053	84	-	41	3	44	N	39	-	-	620
SUN	4/11/2021	7,714.83	59,151	90	-	40	3	44	N	39	-	-	473
MON	4/12/2021	7,714.98	59,257	93	-	40	4	44	N	39	-	-	545
TUE	4/13/2021	7,715.14	59,370	97	-	40	4	44	Y	100	-	-	528
WED	4/14/2021	7,715.24	59,440	93	-	57	4	61	Y	96	-	-	512
THU	4/15/2021	7,715.23	59,433	98	-	102	4	106	Y	102	-	-	460
FRI	4/16/2021	7,715.16	59,384	84	-	109	4	113	Y	88	-	-	484
SAT	4/17/2021	7,715.08	59,327	80	-	109	4	113	Y	85	-	-	493
SUN	4/18/2021	7,714.96	59,243	66	-	109	4	113	Y	70	-	-	479
MON	4/19/2021	7,714.90	59,201	66	-	87	4	91	Y	70	-	-	482
TUE	4/20/2021	7,714.89	59,194	67	-	70	4	74	Y	71	-	-	517
WED	4/21/2021	7,714.89	59,194	70	-	70	4	74	Y	74	-	-	506
THU	4/22/2021	7,714.89	59,194	70	-	70	4	74	Y	74	-	-	437
FRI	4/23/2021	7,714.87	59,180	63	-	70	4	74	Y	67	-	-	460
SAT	4/24/2021	7,714.83	59,151	56	-	70	4	74	Y	59	-	-	462
SUN	4/25/2021	7,714.84	59,158	73	-	70	4	74	Y	77	-	-	438
MON	4/26/2021	7,714.92	59,215	98	-	70	4	74	Y	102	-	-	450
TUE	4/27/2021	7,714.99	59,264	100	-	75	4	78	Y	103	-	-	418
WED	4/28/2021	7,715.05	59,306	105	-	83	4	87	Y	108	-	-	382
THU	4/29/2021	7,715.05	59,306	89	-	89	4	92	Y	92	-	-	432
FRI	4/30/2021	7,715.14	59,370	140	-	108	4	112	N	39	-	-	459
Averages		7,714.71	59,066	82	-	65	3	69		65	-		700
Totals (acft)				4,861	-	3,879	207	4,086		3,862	-	-	41,649

NOTES: Releases of water to support 15-Mile Reach target started 7/21 and ceased 10/17. A total of 17,762.5 acre-feet was released to support Recovery Program target flows.

FRYINGPAN-ARKANSAS PROJECT
RUEDI RESERVOIR
RELEASES FOR ENDANGERED FISH
WATER YEAR 2021
May

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? (Y= YES) (N= NO)	REQUIRED MIN FLOW BELOW RUEDI w/o FISH REL (CFS)	ENDANGERED FISH RELEASE (CFS)	CUMULATIVE FISH RELEASE (AC-FT)	PALISADE GAGE (CFS)
SAT	5/1/2021	7,715.41	59,560	208	3	109	4	112	N	110	-	-	610
SUN	5/2/2021	7,715.81	59,843	255	3	109	4	113	N	110	-	-	922
MON	5/3/2021	7,716.19	60,112	247	3	109	4	113	N	110	-	-	1,386
TUE	5/4/2021	7,716.50	60,332	223	3	109	5	114	N	110	-	-	1,411
WED	5/5/2021	7,716.70	60,475	183	3	108	6	114	N	110	-	-	1,116
THU	5/6/2021	7,716.88	60,603	175	3	107	6	113	N	110	-	-	700
FRI	5/7/2021	7,717.17	60,810	214	3	107	6	113	N	110	-	-	562
SAT	5/8/2021	7,717.51	61,053	232	3	107	6	113	N	110	-	-	601
SUN	5/9/2021	7,717.84	61,290	229	3	107	7	114	N	110	-	-	1,119
MON	5/10/2021	7,718.13	61,498	215	3	107	7	114	N	110	-	-	1,169
TUE	5/11/2021	7,718.35	61,656	189	3	106	8	114	N	110	-	-	981
WED	5/12/2021	7,718.49	61,757	158	3	104	8	112	N	110	-	-	716
THU	5/13/2021	7,718.62	61,851	154	3	103	8	111	N	110	-	-	544
FRI	5/14/2021	7,718.79	61,974	169	3	104	7	111	N	110	-	-	457
SAT	5/15/2021	7,719.09	62,190	216	3	104	7	111	N	110	-	-	428
SUN	5/16/2021	7,719.44	62,444	235	3	104	7	111	N	110	-	-	595
MON	5/17/2021	7,719.86	62,749	261	3	104	7	111	N	110	-	-	1,149
TUE	5/18/2021	7,720.33	63,092	280	3	104	8	113	N	110	-	-	1,609
WED	5/19/2021	7,720.83	63,457	291	3	104	10	114	N	110	-	-	1,555
THU	5/20/2021	7,721.39	63,868	314	3	104	11	115	N	110	-	-	1,817
FRI	5/21/2021	7,721.97	64,295	323	3	104	14	118	N	110	-	-	2,466
SAT	5/22/2021	7,722.55	64,723	324	3	105	17	122	N	110	-	-	2,848
SUN	5/23/2021	7,723.18	65,190	343	3	104	19	123	N	110	-	-	2,743
MON	5/24/2021	7,723.62	65,518	273	3	104	17	121	N	110	-	-	3,197
TUE	5/25/2021	7,724.08	65,861	281	3	105	16	120	N	110	-	-	2,661
WED	5/26/2021	7,724.63	66,273	315	3	104	16	120	N	110	-	-	2,734
THU	5/27/2021	7,725.10	66,626	285	3	104	16	119	N	110	-	-	2,924
FRI	5/28/2021	7,725.64	67,034	307	3	98	16	114	N	110	-	-	2,668
SAT	5/29/2021	7,726.19	67,450	307	3	93	17	110	N	110	-	-	3,259
SUN	5/30/2021	7,726.77	67,892	320	3	95	17	112	N	110	-	-	3,496
MON	5/31/2021	7,727.37	68,351	330	3	95	17	112	N	110	-	-	3,471
Averages		7,720.46	63,220	253	3	104	10	114		110	-		1,675
Totals (acft)				15,578	194	6,403	631	7,034		6,764	-	-	102,969

NOTES: Releases of water to support 15-Mile Reach target started 7/21 and ceased 10/17. A total of 17,762.5 acre-feet was released to support Recovery Program target flows.

FRYINGPAN-ARKANSAS PROJECT
RUEDI RESERVOIR
RELEASES FOR ENDANGERED FISH
WATER YEAR 2021
June

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? (Y= YES) (N= NO)	REQUIRED MIN FLOW BELOW RUEDI w/o FISH REL (CFS)	ENDANGERED FISH RELEASE (CFS)	CUMULATIVE FISH RELEASE (AC-FT)	PALISADE GAGE (CFS)
TUE	6/1/2021	7,728.00	68,835	348	8	96	16	112	N	110	-	-	3,150
WED	6/2/2021	7,728.64	69,329	354	8	96	16	112	N	110	-	-	3,093
THU	6/3/2021	7,729.33	69,865	375	8	96	16	112	N	110	-	-	3,107
FRI	6/4/2021	7,730.12	70,483	416	8	97	16	113	N	110	-	-	3,723
SAT	6/5/2021	7,730.99	71,167	450	8	97	17	114	N	110	-	-	4,955
SUN	6/6/2021	7,731.83	71,832	440	8	96	18	114	N	110	-	-	5,532
MON	6/7/2021	7,732.56	72,413	398	8	97	18	115	N	110	-	-	5,282
TUE	6/8/2021	7,733.32	73,021	413	9	98	18	115	N	110	-	-	5,171
WED	6/9/2021	7,734.01	73,576	386	9	98	18	115	N	110	-	-	4,739
THU	6/10/2021	7,734.66	74,103	372	9	98	17	115	N	110	-	-	4,316
FRI	6/11/2021	7,735.27	74,598	357	9	98	16	114	N	110	-	-	3,812
SAT	6/12/2021	7,735.86	75,080	350	9	98	15	113	N	110	-	-	3,483
SUN	6/13/2021	7,736.44	75,555	347	9	99	14	113	N	110	-	-	3,123
MON	6/14/2021	7,737.02	76,032	348	9	99	13	112	N	110	-	-	2,864
TUE	6/15/2021	7,737.59	76,503	345	9	99	13	112	N	110	-	-	2,548
WED	6/16/2021	7,738.11	76,934	325	9	98	12	110	N	110	-	-	2,330
THU	6/17/2021	7,738.62	77,358	321	9	98	11	109	N	110	-	-	2,187
FRI	6/18/2021	7,739.09	77,750	306	9	99	10	110	N	110	-	-	2,140
SAT	6/19/2021	7,739.63	78,203	340	9	103	10	114	N	110	-	-	1,901
SUN	6/20/2021	7,740.10	78,598	311	9	103	10	113	N	110	-	-	1,787
MON	6/21/2021	7,740.53	78,960	295	9	104	9	113	N	110	-	-	1,554
TUE	6/22/2021	7,740.93	79,298	284	9	104	8	113	N	110	-	-	1,313
WED	6/23/2021	7,741.35	79,654	294	9	105	7	113	N	110	-	-	1,181
THU	6/24/2021	7,741.79	80,029	304	9	106	5	112	N	110	-	-	1,020
FRI	6/25/2021	7,742.34	80,498	352	9	107	6	112	N	110	-	-	1,037
SAT	6/26/2021	7,742.80	80,892	315	9	107	6	113	N	110	-	-	1,502
SUN	6/27/2021	7,743.22	81,253	298	9	107	5	112	N	110	-	-	1,447
MON	6/28/2021	7,743.55	81,537	258	9	106	5	111	N	110	-	-	1,304
TUE	6/29/2021	7,743.85	81,796	246	9	106	5	111	N	110	-	-	1,019
WED	6/30/2021	7,744.09	82,003	220	9	106	5	111	N	110	-	-	894
Averages		7,737.19	76,238	339	9	101	12	113		110	-		2,717
Totals (acft)				20,169	521	5,996	706	6,701		6,546	-	-	161,680

NOTES: Releases of water to support 15-Mile Reach target started 7/21 and ceased 10/17. A total of 17,762.5 acre-feet was released to support Recovery Program target flows.

FRYINGPAN-ARKANSAS PROJECT
RUEDI RESERVOIR
RELEASES FOR ENDANGERED FISH
WATER YEAR 2021
July

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? (Y= YES) (N= NO)	REQUIRED MIN FLOW BELOW RUEDI w/o FISH REL (CFS)	ENDANGERED FISH RELEASE (CFS)	CUMULATIVE FISH RELEASE (AC-FT)	PALISADE GAGE (CFS)
THU	7/1/2021	7,744.31	82,194	211	8	106	5	111	N	110	-	-	921
FRI	7/2/2021	7,744.51	82,367	202	8	106	5	111	N	110	-	-	988
SAT	7/3/2021	7,744.65	82,489	176	8	106	5	111	N	110	-	-	1,022
SUN	7/4/2021	7,744.82	82,637	189	8	107	4	111	N	110	-	-	898
MON	7/5/2021	7,744.98	82,776	185	8	107	4	111	N	110	-	-	832
TUE	7/6/2021	7,745.13	82,907	181	8	107	4	111	N	110	-	-	651
WED	7/7/2021	7,745.26	83,020	173	8	107	4	111	N	110	-	-	752
THU	7/8/2021	7,745.36	83,107	160	8	107	4	111	N	110	-	-	693
FRI	7/9/2021	7,745.45	83,186	156	8	108	3	111	N	110	-	-	565
SAT	7/10/2021	7,745.50	83,230	137	8	107	3	110	N	110	-	-	437
SUN	7/11/2021	7,745.53	83,256	138	8	117	3	120	Y	141	-	-	379
MON	7/12/2021	7,745.41	83,151	121	8	165	3	168	Y	124	-	-	375
TUE	7/13/2021	7,745.29	83,046	121	8	165	3	168	Y	123	-	-	357
WED	7/14/2021	7,745.20	82,968	129	8	160	3	163	Y	131	-	-	469
THU	7/15/2021	7,745.22	82,985	161	8	143	3	146	N	110	-	-	615
FRI	7/16/2021	7,745.19	82,959	138	8	143	3	146	N	110	-	-	734
SAT	7/17/2021	7,745.14	82,916	130	8	143	3	146	Y	132	-	-	693
SUN	7/18/2021	7,745.07	82,854	121	8	144	2	146	Y	123	-	-	542
MON	7/19/2021	7,744.97	82,768	108	8	144	2	146	Y	111	-	-	445
TUE	7/20/2021	7,744.86	82,672	103	8	143	2	146	Y	106	-	-	300
WED	7/21/2021	7,744.73	82,559	102	8	151	2	153	Y	104	8	17	234
THU	7/22/2021	7,744.50	82,359	71	8	164	2	166	Y	73	25	66	
FRI	7/23/2021	7,744.52	82,376	181	8	164	2	166	Y	183	25	116	475
SAT	7/24/2021	7,744.36	82,237	102	8	164	2	166	Y	104	25	165	713
SUN	7/25/2021	7,744.22	82,116	111	8	164	2	166	Y	113	25	215	733
MON	7/26/2021	7,744.07	81,986	106	8	164	2	166	Y	108	25	264	611
TUE	7/27/2021	7,743.89	81,831	93	8	164	2	166	Y	96	25	314	489
WED	7/28/2021	7,743.69	81,658	84	8	163	2	166	Y	87	25	364	531
THU	7/29/2021	7,743.49	81,485	85	8	163	2	165	Y	87	25	413	524
FRI	7/30/2021	7,743.29	81,313	78	8	156	2	158	Y	80	25	463	470
SAT	7/31/2021	7,743.17	81,210	100	8	144	2	146	Y	102	25	512	796
Averages		7,744.70	82,536	134	8	139	3	141		111	8		588
Totals (acft)				8,237	510	8,521	179	8,700		6,841	512	512	36,182

NOTES: Releases of water to support 15-Mile Reach target started 7/21 and ceased 10/17. A total of 17,762.5 acre-feet was released to support Recovery Program target flows.

FRYINGPAN-ARKANSAS PROJECT
RUEDI RESERVOIR
RELEASES FOR ENDANGERED FISH
WATER YEAR 2021
August

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? (Y= YES) (N= NO)	REQUIRED MIN FLOW BELOW RUEDI w/o FISH REL (CFS)	ENDANGERED FISH RELEASE (CFS)	CUMULATIVE FISH RELEASE (AC-FT)	PALISADE GAGE (CFS)
SUN	8/1/2021	7,743.18	81,218	154	6	144	2	146	N	110	25	562	1,025
MON	8/2/2021	7,743.29	81,313	197	6	144	2	145	N	110	25	612	933
TUE	8/3/2021	7,743.80	81,752	372	6	144	2	146	N	110	25	661	1,060
WED	8/4/2021	7,744.37	82,246	403	6	148	2	150	Y	405	25	711	761
THU	8/5/2021	7,744.56	82,411	252	6	163	2	165	Y	254	25	760	1,371
FRI	8/6/2021	7,744.59	82,437	182	6	163	2	165	Y	184	25	810	866
SAT	8/7/2021	7,744.59	82,437	170	6	164	2	166	Y	172	25	860	701
SUN	8/8/2021	7,744.51	82,367	136	6	165	2	167	Y	138	25	909	584
MON	8/9/2021	7,744.38	82,255	123	6	174	2	176	Y	125	25	959	512
TUE	8/10/2021	7,744.18	82,081	114	6	195	2	197	Y	116	25	1,008	457
WED	8/11/2021	7,743.95	81,882	99	6	193	2	196	Y	101	25	1,058	412
THU	8/12/2021	7,743.68	81,649	93	6	204	2	207	Y	95	25	1,107	384
FRI	8/13/2021	7,743.40	81,407	87	6	202	2	205	Y	89	25	1,157	392
SAT	8/14/2021	7,743.12	81,167	87	6	203	2	205	Y	89	22	1,200	358
SUN	8/15/2021	7,742.76	80,857	86	6	236	2	238	Y	88	25	1,250	396
MON	8/16/2021	7,742.24	80,413	84	6	302	2	304	Y	86	75	1,398	357
TUE	8/17/2021	7,741.71	79,960	81	6	303	2	305	Y	83	75	1,547	441
WED	8/18/2021	7,741.34	79,646	75	6	227	2	229	Y	76	100	1,745	452
THU	8/19/2021	7,741.08	79,425	103	6	208	2	210	Y	105	100	1,944	643
FRI	8/20/2021	7,740.85	79,231	116	6	208	2	210	Y	118	100	2,142	846
SAT	8/21/2021	7,740.55	78,977	86	6	208	2	210	Y	88	100	2,341	1,066
SUN	8/22/2021	7,740.24	78,716	82	6	208	2	210	Y	84	100	2,539	947
MON	8/23/2021	7,739.93	78,455	82	6	208	2	209	Y	84	100	2,737	867
TUE	8/24/2021	7,739.60	78,178	74	6	208	2	210	Y	76	100	2,936	788
WED	8/25/2021	7,739.25	77,884	65	6	207	2	209	Y	66	100	3,134	671
THU	8/26/2021	7,738.83	77,533	61	6	232	2	234	Y	63	118	3,368	656
FRI	8/27/2021	7,738.42	77,192	67	6	234	2	236	Y	69	125	3,616	645
SAT	8/28/2021	7,737.99	76,835	59	6	233	2	235	Y	61	125	3,864	604
SUN	8/29/2021	7,737.56	76,478	59	6	233	2	235	Y	61	125	4,112	569
MON	8/30/2021	7,737.11	76,106	50	6	232	2	234	Y	52	125	4,360	503
TUE	8/31/2021	7,736.67	75,744	55	6	232	2	234	Y	57	125	4,608	446
Averages		7,741.67	79,944	121	6	204	2	206		110	67		668
Totals (acft)				7,443	359	12,550	121	12,671		6,773	4,096	4,608	41,082

NOTES: Releases of water to support 15-Mile Reach target started 7/21 and ceased 10/17. A total of 17,762.5 acre-feet was released to support Recovery Program target flows.

FRYINGPAN-ARKANSAS PROJECT
RUEDI RESERVOIR
RELEASES FOR ENDANGERED FISH
WATER YEAR 2021
September

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? (Y= YES) (N= NO)	REQUIRED MIN FLOW BELOW RUEDI w/o FISH REL (CFS)	ENDANGERED FISH RELEASE (CFS)	CUMULATIVE FISH RELEASE (AC-FT)	PALISADE GAGE (CFS)
WED	9/1/2021	7,736.25	75,399	60	3	230	2	232	Y	62	125	4,856	436
THU	9/2/2021	7,735.79	75,023	63	3	249	2	251	Y	65	150	5,154	623
FRI	9/3/2021	7,735.33	74,647	72	3	257	2	259	Y	73	150	5,451	723
SAT	9/4/2021	7,734.84	74,248	60	3	258	2	259	Y	62	150	5,749	811
SUN	9/5/2021	7,734.32	73,827	50	3	259	2	261	Y	52	150	6,046	822
MON	9/6/2021	7,733.80	73,407	52	3	260	2	261	Y	53	150	6,344	799
TUE	9/7/2021	7,733.26	72,973	45	3	261	2	262	Y	47	175	6,691	738
WED	9/8/2021	7,732.73	72,548	50	3	261	2	263	Y	52	175	7,038	623
THU	9/9/2021	7,732.19	72,118	47	3	261	2	262	Y	48	175	7,385	562
FRI	9/10/2021	7,731.64	71,681	44	3	261	2	262	Y	45	175	7,732	535
SAT	9/11/2021	7,731.09	71,245	44	3	260	2	262	Y	46	175	8,079	510
SUN	9/12/2021	7,730.54	70,812	45	3	260	2	262	Y	47	175	8,426	549
MON	9/13/2021	7,729.98	70,373	41	3	259	2	261	Y	43	175	8,773	546
TUE	9/14/2021	7,729.36	69,889	45	3	286	2	288	Y	47	175	9,120	479
WED	9/15/2021	7,728.71	69,384	42	3	294	2	295	Y	44	175	9,468	442
THU	9/16/2021	7,728.04	68,866	35	3	293	2	294	Y	37	175	9,815	441
FRI	9/17/2021	7,727.38	68,358	40	3	292	2	294	Y	41	175	10,162	411
SAT	9/18/2021	7,726.72	67,854	40	3	291	2	293	Y	41	175	10,509	377
SUN	9/19/2021	7,726.11	67,389	60	3	291	2	292	Y	61	175	10,856	438
MON	9/20/2021	7,725.45	66,890	42	3	291	2	292	Y	44	175	11,203	432
TUE	9/21/2021	7,724.80	66,401	46	3	290	2	292	Y	48	175	11,550	380
WED	9/22/2021	7,724.13	65,898	39	3	289	2	291	Y	41	175	11,897	350
THU	9/23/2021	7,723.45	65,391	35	3	288	2	290	Y	37	175	12,244	317
FRI	9/24/2021	7,722.78	64,893	39	3	287	2	289	Y	41	175	12,592	283
SAT	9/25/2021	7,722.10	64,390	36	3	287	2	288	Y	38	175	12,939	291
SUN	9/26/2021	7,721.40	63,875	30	3	287	2	288	Y	31	175	13,286	289
MON	9/27/2021	7,720.71	63,369	34	3	286	2	287	Y	36	175	13,633	262
TUE	9/28/2021	7,720.08	62,909	56	3	285	2	287	Y	58	175	13,980	246
WED	9/29/2021	7,719.48	62,473	67	3	284	2	285	Y	68	176	14,329	1,158
THU	9/30/2021	7,718.96	62,096	55	3	242	2	243	Y	56	150	14,627	740
Averages		7,728.05	68,954	47	3	273	2	275		49	168		520
Totals (acft)				2,803	192	16,259	98	16,357		2,901	10,019	14,627	30,970

NOTES: Releases of water to support 15-Mile Reach target started 7/21 and ceased 10/17. A total of 17,762.5 acre-feet was released to support Recovery Program target flows.

FRYINGPAN-ARKANSAS PROJECT
RUEDI RESERVOIR
RELEASES FOR ENDANGERED FISH
WATER YEAR 2021
October

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? (Y= YES) (N= NO)	REQUIRED MIN FLOW BELOW RUEDI w/o FISH REL (CFS)	ENDANGERED FISH RELEASE (CFS)	CUMULATIVE FISH RELEASE (AC-FT)	PALISADE GAGE (CFS)
FRI	10/1/2021	7,718.47	61,743	53	1	230	2	232	Y	55	150	14,924	684
SAT	10/2/2021	7,717.98	61,390	53	1	230	2	232	Y	55	150	15,222	643
SUN	10/3/2021	7,717.47	61,025	47	1	230	2	232	Y	49	150	15,519	596
MON	10/4/2021	7,716.95	60,653	44	1	230	2	232	Y	46	150	15,817	571
TUE	10/5/2021	7,716.47	60,311	33	1	204	2	206	Y	34	150	16,114	569
WED	10/6/2021	7,716.11	60,055	48	1	175	2	177	Y	49	150	16,412	552
THU	10/7/2021	7,715.88	59,892	49	1	130	2	132	Y	51	75	16,560	516
FRI	10/8/2021	7,715.65	59,730	49	1	130	2	132	Y	51	75	16,709	469
SAT	10/9/2021	7,715.51	59,631	81	1	130	2	131	Y	83	75	16,858	537
SUN	10/10/2021	7,715.37	59,532	79	1	127	2	129	Y	80	75	17,007	619
MON	10/11/2021	7,715.18	59,398	61	1	127	2	129	Y	62	75	17,155	743
TUE	10/12/2021	7,714.98	59,257	57	1	127	2	129	Y	59	75	17,304	763
WED	10/13/2021	7,714.78	59,116	57	1	127	2	129	Y	59	75	17,453	837
THU	10/14/2021	7,714.58	58,976	57	1	127	2	129	Y	59	75	17,602	899
FRI	10/15/2021	7,714.38	58,835	57	1	127	2	129	Y	59	75	17,750	892
SAT	10/16/2021	7,714.17	58,688	53	1	126	2	128	Y	55	6	17,763	882
SUN	10/17/2021	7,713.98	58,555	54	1	120	2	122	Y	56	-	17,763	865
MON	10/18/2021	7,713.94	58,527	57	1	70	2	72	Y	59	-	17,763	798
TUE	10/19/2021	7,713.88	58,485	58	1	78	2	80	Y	59	-	17,763	874
WED	10/20/2021	7,713.80	58,429	52	1	79	2	81	N	54	-	17,763	792
THU	10/21/2021	7,713.71	58,367	48	1	79	2	81	N	50	-	17,763	806
FRI	10/22/2021	7,713.66	58,332	49	1	65	2	67	N	50	-	17,763	787
SAT	10/23/2021	7,713.65	58,325	45	1	47	2	49	N	47	-	17,763	727
SUN	10/24/2021	7,713.66	58,332	52	1	47	2	49	N	54	-	17,763	712
MON	10/25/2021	7,713.64	58,318	46	1	52	2	54	N	48	-	17,763	723
TUE	10/26/2021	7,713.63	58,311	52	1	54	2	56	N	54	-	17,763	1,141
WED	10/27/2021	7,713.62	58,304	52	1	54	2	56	N	54	-	17,763	1,065
THU	10/28/2021	7,713.64	58,318	62	1	54	2	56	N	64	-	17,763	915
FRI	10/29/2021	7,713.61	58,297	45	1	54	2	56	N	46	-	17,763	1,304
SAT	10/30/2021	7,713.60	58,290	52	1	54	2	56	N	54	-	17,763	1,491
SUN	10/31/2021	7,713.60	58,290	55	1	54	2	56	N	57	-	17,763	1,434
Averages		7,714.82	59,152	53	1	114	2	116		55	51		813
Totals (acft)				3,285	67	7,024	110	7,134		3,395	3,136	17,762.5	49,993

NOTES: Releases of water to support 15-Mile Reach target started 7/21 and ceased 10/17. A total of 17,762.5 acre-feet was released to support Recovery Program target flows.

Table 4: Fryingpan- Arkansas Project Transmountain Diversions WY2021 (Units = AF).

	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
South Fork	8	1,549	2,266	240	0	0	4,063
No Name	0	557	930	6	0	0	1,493
Midway	0	875	2,475	99	0	0	3,449
Hunter	0	845	2,265	97	0	0	3,207
Sawyer	6	347	950	121	0	0	1,424
Chapman[1]	0	807	866	414	0	0	2,087
Subtotal	**14**	**4980**	**9752**	**977**	**0**	**0**	**15723**
Carter	8	863	1,160	1	0	0	2,031
North Fork	1	219	365	0	0	0	585
Mormon	0	895	1,104	0	0	0	1,999
North Cunningham	4	496	545	0	0	0	1,045
Middle Cunningham[2]	1	460	898	6	0	0	1,364
Ivanhoe	3	1,155	2,097	37	0	0	3,291
Granite	0	312	959	153	0	0	1,424
Fryingpan	24	1,603	2,971	209	0	0	4,806
Lily Pad	2	1,960	593	285	0	0	2,839
Subtotal	**41**	**7,962**	**10,691**	**690**	**0**	**0**	**19,385**
Total	**55**	**12,942**	**20,443**	**1,667**	**0**	**0**	**35,108**
Boustead Tunnel[3]	**Oct-Apr 966**	**11,447**	**20,565**	**1,146**	**129**	**125**	**34,378**

[1] Does not include No Name, Hunter, Sawyer and Midway
[2] Includes South Cunningham
[3] The difference between the west slope diversion and Charles H. Boustead Tunnel diversion results from the accuracy limitations of the measurement, rounding and seepage

Table 5: Fryingpan-Arkansas Project Imports - Charles H. Boustead Tunnel Outlet (Units = 1,000 AF).

Water Year	Imports	Accumulated Imports	Twin Lakes Exchange	Available to SECWCD
1972	32	32	0	0
1973	36.8	68.8	0	16
1974	34.1	102.9	0	18.6
1975	37.2	140.1	0	25
1976	26.9	167	0	24
1977	11.4	178.4	0	25
1978	49.2	227.6	0	25
1979	53.7	281.3	0	25.6
1980	55.7	337	0	70
1981	34.6	371.6	0	25
1982	75.2	446.8	2.7	68
1983	90.8	537.6	0.3	125
1984	110.1	647.7	1.9	210
1985[1]	70.2	717.9	1.7	289.9
1986[1]	30.3	748.2	1.5	300.3
1987[1]	2.2	750.4	1.1	288
1988[1]	13.4	763.8	2	247.8
1989	36.2	800	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	1047.1	2.3	70.1
1994	52.2	1099.3	1.3	51.7
1995	90.5	1189.8	2.3	55
1996[1]	36.9	1226.7	1.8	110
1997	78.6	1305.3	1.8	116
1998	51.3	1356.6	2.6	102
1999[1]	40.8	1397.4	2.1	127.5
2000	44.8	1442.2	1.7	171.6
2001	45.3	1487.5	2.1	67.5
2002	13.2	1500.7	1.5	8.5
2003	54.9	1555.6	2.4	37.5

Water Year	Imports	Accumulated Imports	Twin Lakes Exchange	Available to SECWCD
2004	27.4	1583	1.3	15.3
2005	54.6	1637.6	3	40.8
2006	61.2	1698.8	3	49.2
2007	54.2	1753	3	40.4
2008	90	1843	3	83
2009	82.7	1925.7	3	78
2010	56.5	1982.2	3	44
2011	98.9	2081.1	2.3	75
2012	13.4	2094.5	1.5	9.9
2013	46.7	2141.2	2.8	37.6
2014	80.3	2221.5	3	56
2015	72.2	2293.7	1.9	67.9
2016	59.2	2353	2.5	39.1
2017	67	2420	2	46.3
2018	39.2	2459.2	3	41.3
2019	95.8	2555	0.1	42.6
2020	51	2606	2.7	62.9
2021	31.9	2637.9	3	25.8

[1]Imports impeded
Restriction: Not to exceed 120 KAF in 1 year
Not to exceed 2,352.8 KAF in 34 consecutive years. The
imports between 1988 and 2021 are 1887.4 KAF
1983 includes 3,120 AF imported through the Twin Lakes Tunnel

Table 6: Turquoise Lake Operations WY2021 (Units = 1,000 AF).

Month	Busk-Ivanhoe Imports through Carlton Tunnel	Busk-Ivanhoe Imports through Boustead Tunnel	Imports through Homestake Tunnel	Project Imports	Native Inflow	Total Inflow	Evap	Total Outflow	End of Month Content	Water Surface Elevation (feet)
OCT 2020	0.0	0.0	0.0	0.0	0.4	0.4	0.4	4.3	89.7	9,846.1
NOV 2020	0.0	0.0	0.0	0.0	0.0	0.0	0.2	8.1	80.4	9,840.2
DEC 2020	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	75.8	9,837.2
JAN 2021	0.0	0.0	0.0	0.0	0.4	0.4	0.0	1.2	75.0	9,836.7
FEB 2021	0.0	0.0	16.5	0.0	1.1	17.6	0.0	5.4	87.2	9,844.5
MAR 2021	0.0	0.0	11.2	0.0	1.2	12.3	0.0	18.5	81.0	9,840.6
APR 2021	0.0	0.0	0.0	0.1	0.8	0.9	0.0	19.4	62.5	9,828.1
MAY 2021	1.0	0.1	0.0	11.1	5.3	17.5	0.2	4.0	75.9	9,837.3
JUN 2021	1.3	1.2	0.0	20.4	6.1	29.0	0.6	1.8	102.4	9,853.8
JUL 2021	0.4	0.0	0.0	1.0	2.1	3.5	0.6	1.6	103.7	9,854.6
AUG 2021	0.2	0.0	0.0	0.0	0.0	0.0	0.5	18.2	84.6	9,842.9
SEP 2021	0.0	0.0	0.0	0.0	0.0	0.0	0.5	4.9	79.2	9,839.4
Total* (acre-feet)	**2,963**	**1,124**	**27,742**	**31,921**	**-**	**79,780**	**3,023**	**91,629**	-	-

*Rounding may introduce discrepancies between monthly and yearly totals

Table 7: Twin Lakes/Mt. Elbert Forebay Water Year 2021 Operations (Units = 1,000 Acre-feet).

	Twin Lakes Canal Company			Mt. Elbert Conduit				Twin Lakes					
Date	**Imports**	**Winter Water**	**Priority/ Native**	**Leadville Fish Hatchery[4]**	**Halfmoon**	**Sugarloaf Bypass**	**Sugarloaf Powerplant/ Sleeve Valve**	**Native Inflow**	**Total Inflow**	**Evap[2]**	**Total Outflow**	**End of Month Content [2]**	**Water Elevation [3] (feet)**
OCT 20	0.2	0.0	0.0	0.3	0.0	0.6	3.2	1.3	5.2	0.7	1.2	115.1	9,185.95
NOV 20	0.5	0.5	0.0	0.3	0.0	0.3	7.5	2.1	10.2	0.2	13.7	111.4	9,184.23
DEC 20	0.5	0.9	0.0	0.3	0.0	0.4	3.4	1.8	6.0	0.0	13.4	104.0	9,180.67
JAN 21	0.4	0.7	0.0	0.3	0.0	0.6	0.0	0.9	1.9	0.0	11.8	94.1	9,175.55
FEB 21	0.3	0.7	0.0	0.3	0.0	0.5	4.1	0.4	5.6	0.0	10.6	89.1	9,173.90
MAR 21	0.3	0.4	0.3	0.3	0.0	0.6	17.3	0.7	18.9	0.0	13.1	95.0	9,176.09
APR 21	0.6	0.1	0.4	0.3	0.0	0.6	18.3	0.8	20.3	0.2	16.0	99.1	9,178.37
MAY 21	8.4	0.1	8.6	0.3	1.7	0.6	2.3	9.3	22.3	0.8	9.7	110.9	9,183.86
JUN 21	16.5	0.0	12.9	0.3	6.4	0.6	0.0	22.7	46.2	1.0	28.0	128.1	9,191.94
JUL 21	2.6	0.0	0.0	0.3	1.9	0.6	0.0	8.8	14.0	0.9	26.8	114.3	9,185.56
AUG 21	1.6	0.0	0.0	0.3	1.1	0.6	16.9	6.4	26.5	0.9	23.3	116.7	9,186.75
SEP 21	0.0	0.0	0.0	0.3	0.1	0.6	3.8	2.4	7.0	0.8	1.7	121.1	9,188.51
TOTAL[1] (acre-feet)	31,990	3,432	22,197	3,909	11,192	6,630	76,662	57,615	184,163	5,543	169,302	-	-

[1] Rounding may introduce discrepancies between monthly and yearly totals
[2] Both Twin Lakes and Mt. Elbert Forebay
[3] Elevation of Twin Lakes
[4] Leadville Fish Hatchery diverts from Mt Elbert Conduit

Table 8: Mt. Elbert Pumped-Storage Power Plant WY2021 Operations.

Month	Year	Net Generation (MWH)	Gross Generation (MWH)	Inflow to Mt. Elbert (KAF)	Water Through Generator (KAF)	Water Pumped From Twin Lakes To Forebay (KAF)
OCT	2020	16,276	16,518.6	3.7	44.7	41.4
NOV	2020	21,102	21,520.4	7.7	56.4	50.4
DEC	2020	19,973	20,395.2	3.8	53.2	49.5
JAN	2021	17,413	17,752.4	0.6	46.6	45.7
FEB	2021	13,693	14,009.5	4.2	36.3	30.2
MAR	2021	12,373	12,638.4	18.2	33.9	17.5
APR	2021	18,158	18,376.3	19.2	50.1	30.9
MAY	2021	14,513	14,804.9	4.6	40.1	37.0
JUN	2021	23,068	23,357.0	7.1	61.2	55.5
JUL	2021	24,891	25,144.2	3.4	65.3	62.9
AUG	2021	29,967	30,132.1	17.8	75.5	57.0
SEP	2021	5,989	6,030.1	4.5	15.3	11.2
	TOTALS	217,416	220,679.1	94.7	578.6	489.1

Table 9: Pueblo Reservoir WY2021 Operations (Units = 1,000 AF).

Month	Inflow				Evap	Total Outflow	End of Month Content	Water Surface Elevation (feet)
	Project	Contract	Native[2]	Total				
OCT 20	1	3.6	12.3	16.9	1.5	18.1	177.6	4,863.24
NOV 20	3.1	3.4	19.1	25.6	0.8	17.9	184.5	4,865.18
DEC 20	2.9	2.9	17.3	23.1	0.5	13.2	194	4,867.74
JAN 21	1.3	.6	16.4	18.3	0.5	10.7	201.1	4,869.65
FEB 21	.8	.1	13.3	14.2	0.5	7	207.8	4,871.37
MAR 21	1.1	2.4	18.9	22.4	1.1	17.7	211.4	4,872.29
APR 21	5.1	3.9	16.1	25.1	1.8	25.2	209.5	4,871.80
MAY 21	.6	8.8	53.5	62.9	1.8	69.7	200.9	4,869.59
JUN 21	.3	22.6	100.8	123.7	2.6	123	199.1	4,869.10
JUL 21	1	11.7	76.8	89.5	2.5	91.9	194.2	4,867.81
AUG 21	8.2	5.5	45.1	58.8	2.9	61.4	188.7	4,866.31
SEP 21	.8	2.4	9.7	12.9	2.1	17.7	181.8	4,864.42
Total[1] (acre-feet)	26,096	93,926	373,651	493,673	18,570	473,633		

[1] Rounding may introduce discrepancies

[2] Native inflows are the total inflows less the account and project inflow. If the result is negative because of exchanges, 0 is recorded.

Table 10: Reservoir Storage Allocation Data (Unit = Acre-feet).

Reservoir	Dead	Inactive	Active Conservation	Joint Use	Exclusive Flood Control	Total Capacity Storage
Ruedi [1]	63	1,095	101,278	0	0	102,373
Turquoise [1]	2,810	8,920	120,478	0	0	129,398
Twin Lakes [1]	63,324	72,938	67,917	0	0	140,855 [2]
Mt. Elbert [1] Forebay	561	3,825	3,493	0	0	11,143
Pueblo [3]	1,895	25,601	219,772	66,011	26,990	469,878

[1] Area Capacity Table from 1984
[2] The top of the active conservation pool at Twin Lakes corresponds to 140,855 acre-feet. A tilted morning glory spillway reduces the actual storage available to 140,357 acre-feet
[3] Area Capacity Table from 2012
Note: Inactive includes dead storage

Table 11: Monthly Evaporation Factors.

Month	Ruedi	Turquoise	Twin Lakes	Pueblo
OCT	0.0530	0.1217	0.1217	0.1366
NOV	0	0.0566	0.0566	0.0886
DEC	0	0.0171	0.0171	0.0735
JAN	0	0.0274	0.0274	0.07078
FEB	0	0.0497	0.0497	0.10592
MAR	0	0.0771	0.0771	0.1548
APR	0	0.1337	0.1337	0.1760
MAY	0.1470	0.2006	0.2006	---
JUN	0.3605	0.2554	0.2554	---
JUL	0.3244	0.2246	0.2246	---
AUG	0.2332	0.1766	0.1766	---
SEP	0.1419	0.1663	0.1663	---

Note: These factors are used only when the pan is frozen or unavailable. Ruedi doesn't have a pan. Factor is derived from ((the average monthly evaporation volume*12)/0.7) / (# days in month)
Evaporation in acre-feet=monthly factor*surface area of the lake*(1-% ice cover)

Table 12: Monthly Evaporation for Fryingpan-Arkansas Project (Unit = Acre-feet).

Month	Ruedi		Turquoise		Twin Lakes		Pueblo	
	AVG	WY 2021	AVG	WY 2021	AVG	WY 2021	AVG	WY 2021
OCT 2020	56	72	363	435	525	616	1,115	1,515
NOV 2020	0	0	162	157	229	212	575	763
DEC 2020	0	0	15	15	25	20	453	489
JAN 2021	0	0	0	0	2	5	418	466
FEB 2021	0	0	0	0	3	7	608	530
MAR 2021	0	0	0	0	22	11	1,280	1,085
APR 2021	6	0	10	0	193	170	1,754	1,834
MAY 2021	164	194	262	224	829	750	2,165	1,767
JUN 2021	473	521	713	610	1,193	890	2,727	2,597
JUL 2021	513	510	601	594	961	787	2,538	2,456
AUG 2021	317	359	487	535	773	791	2,123	2,934
SEP 2021	176	192	432	453	697	702	1,735	2,135

Average between 1996 and 2021

Table 13: Monthly Precipitation Data for Fryingpan-Arkansas Project (Unit = Inches).

MONTH	CHAPMAN[1] NEAR RUEDI		TURQUOISE		TWIN LAKES		PUEBLO	
	AVG	WY 2020	AVG	WY 2020	AVG	WY 2020	AVG	WY 2020
OCT 20	2.4	0.8	1.14	0.75	0.87	0.40	0.85	0.73
NOV 20	2.2	2.2	1.27	0.58	0.50	0.81	0.33	0.00
DEC 20	3.2	2.6	1.42	1.02	0.47	0.11	0.28	0.11
JAN 21	2.9	0.8	1.61	0.45	0.48	0.11	0.35	0.55
FEB 21	2.7	4.4	1.56	2.12	0.49	0.68	0.39	0.56
MAR 21	3.2	3.5	1.50	1.53	0.62	1.06	0.84	1.20
APR 21	3.6	1.3	1.71	1.01	0.89	0.42	1.67	0.38
MAY 21	3.1	2.2	1.51	1.28	0.91	1.04	1.56	4.52
JUN 21	1.1	2.1	0.86	1.25	0.75	1.08	0.92	0.84
JUL 21	2.6	2.1	1.99	1.51	1.83	2.34	1.93	3.82
AUG 21	2.5	3.2	2.01	1.71	1.46	0.80	2.00	0.12
SEP 21	1.9	1.5	1.44	0.86	1.12	0.62	0.74	1.05
TOTAL	31.4	26.7	18.02	14.07	10.39	9.47	11.86	13.82
Max. Annual	40.9	(2011)	25.95	(1957)	17.27	(1952)	20.32	(2007)

[1] The USGS weather station at Ruedi was out of service for WY2021. The precipitation averages and totals from the Chapman SNOTEL have been substituted. The SNOTEL has been in operation since 2008

Table 14: Flood Control Benefits of the Fryingpan-Arkansas Project.

WY	Ruedi Benefits	Ruedi Benefits Cumulative	Pueblo Benefits	Pueblo Benefits Cumulative
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

WY	Ruedi Benefits	Ruedi Benefits Cumulative	Pueblo Benefits	Pueblo Benefits Cumulative
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
2011	$3,002,000	$18,316,400	$0	$31,476,200
2012	$0	$18,316,400	$0	$31,476,200
2013	$0	$18,316,400	$383,900	$31,860,100
2014	$0	$18,316,400	$431,900	$32,292,000
2015	$1,402,300	$19,718,700	$4,493,000	$36,785,000
2016	$0	$19,718,700	$0	$36,785,000
2017	$0	$19,718,700	$0	$36,785,000
2018	$0	$19,718,700	$0	$36,785,000
2019	$0	$19,718,700	$189,100	$36,974,100
2020	$0	$19,718,700	$0	$36,974,100
2021	$0	$19,718,700	$0	$36,974,100

Appendix B: Exhibits

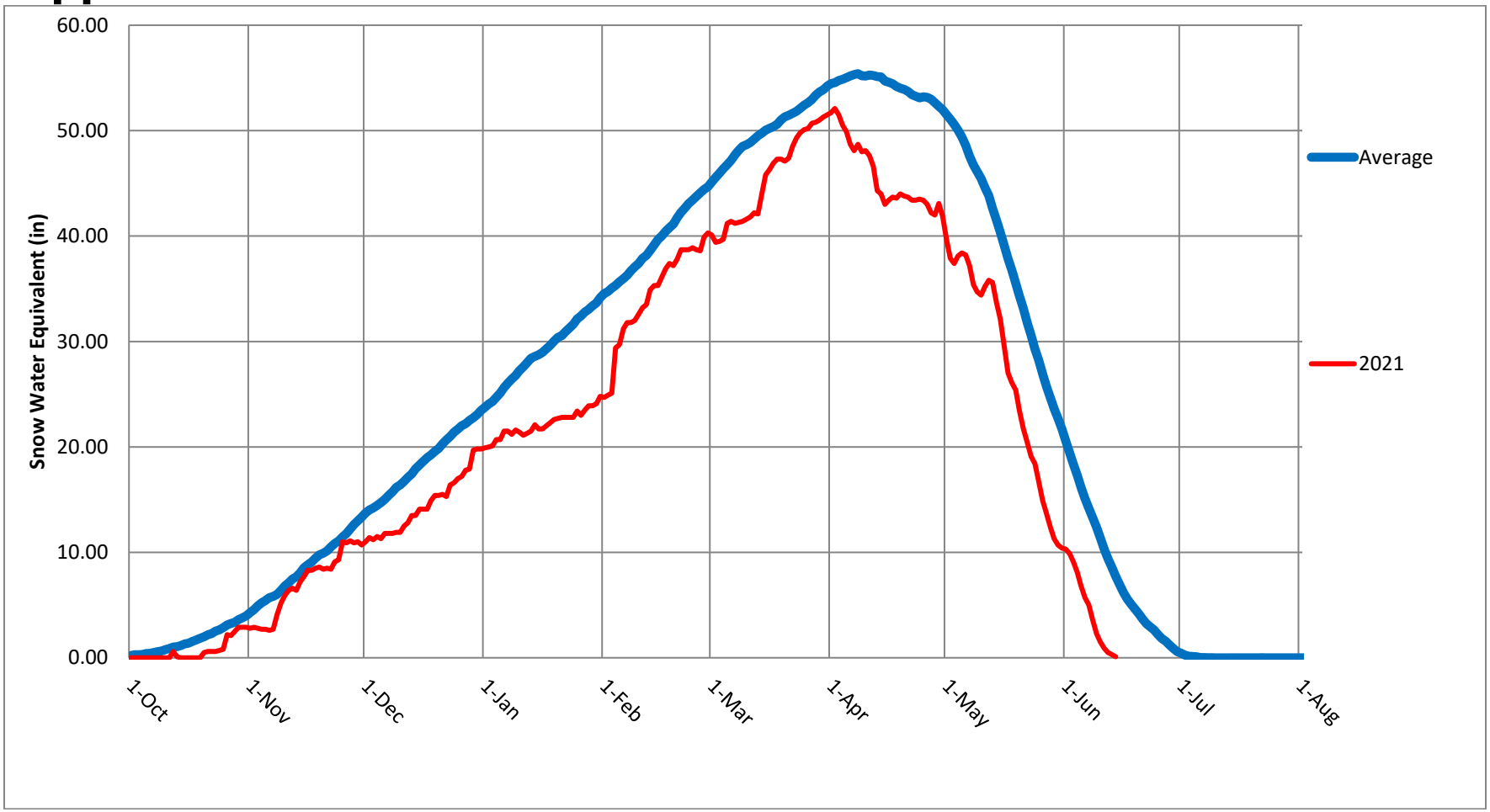

Exhibit 1: Combined Snow Water Equivalent of Fremont Pass, Independence Pass, Ivanhoe Lake and Nast SNOTEL sites.

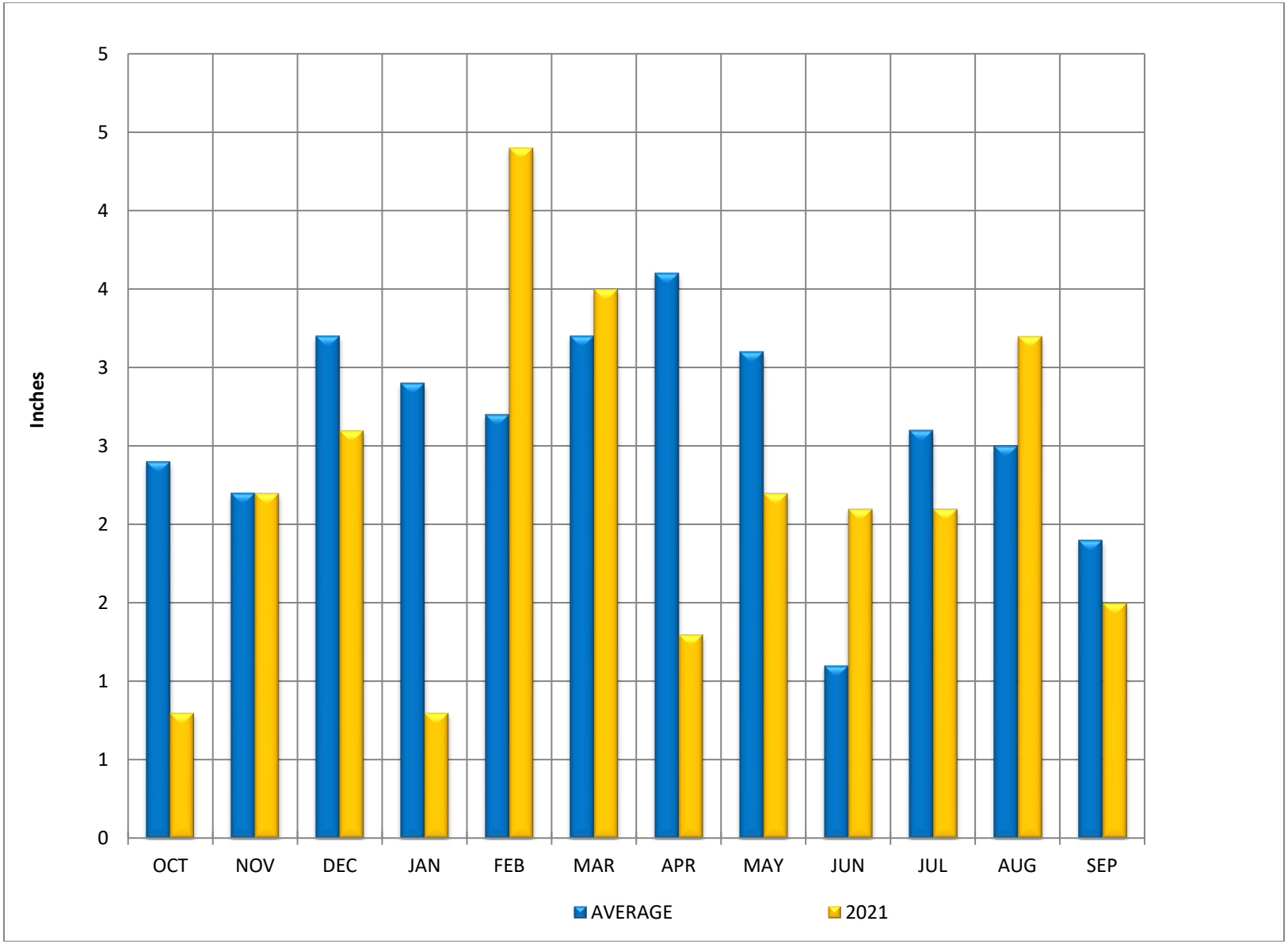

Exhibit 2: Chapman SNOTEL Monthly Precipitation WY2021.

The weather station at Ruedi was out of service for the year. These precipitation values are from the Chapman SNOTEL gage.

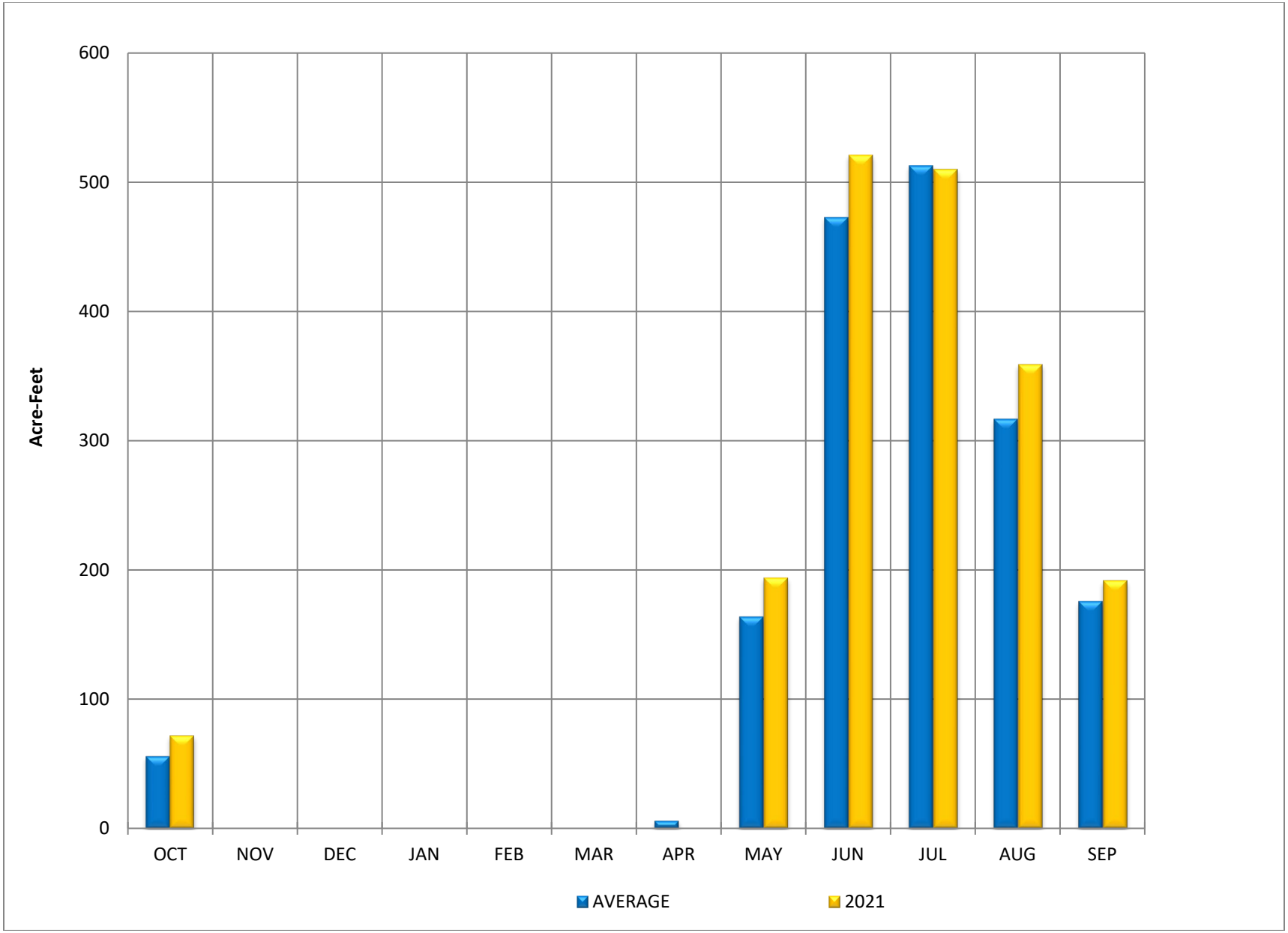

Exhibit 3: Ruedi Reservoir Monthly Evaporation WY2021.

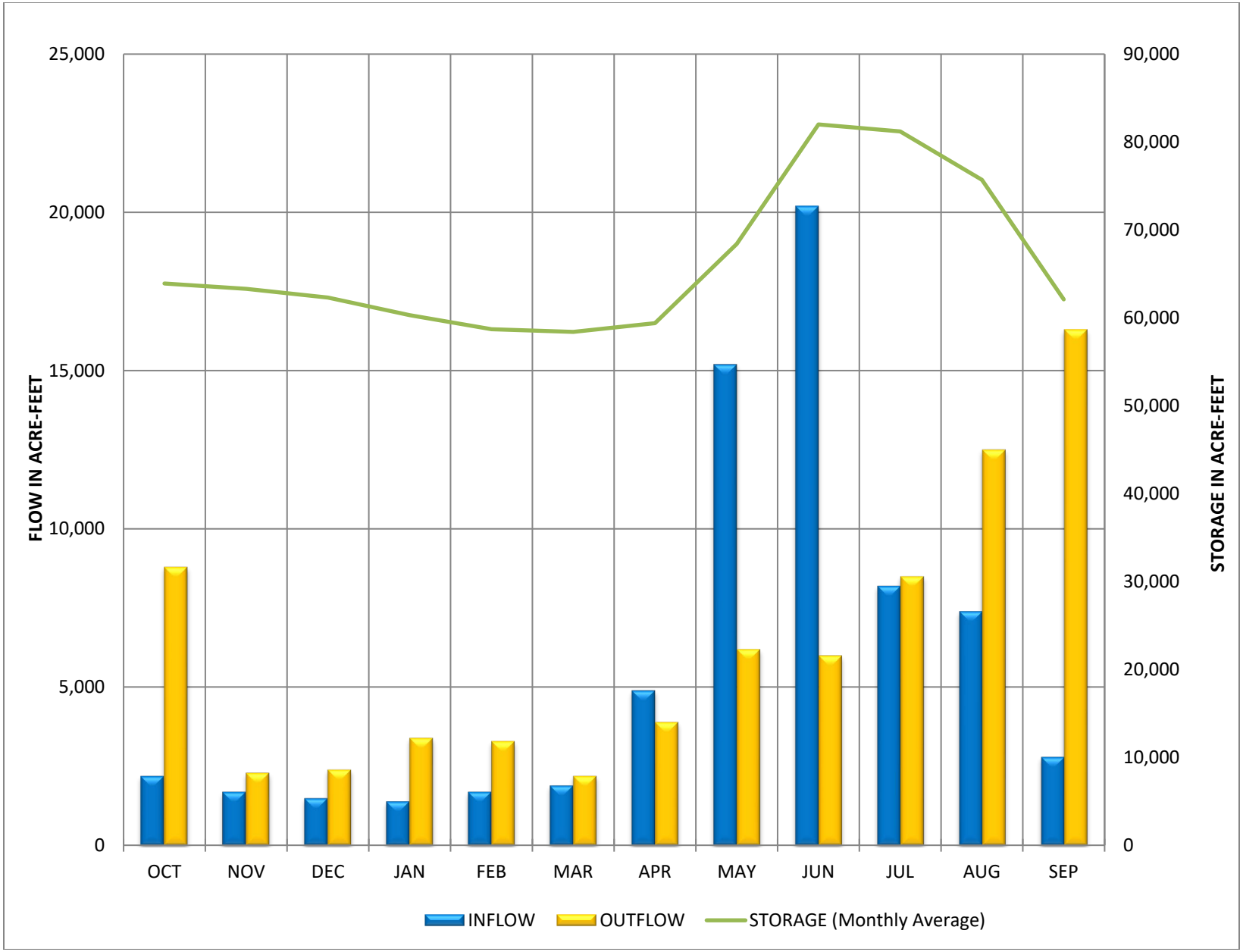

Exhibit 4: Ruedi Reservoir Actual Operations WY2021.

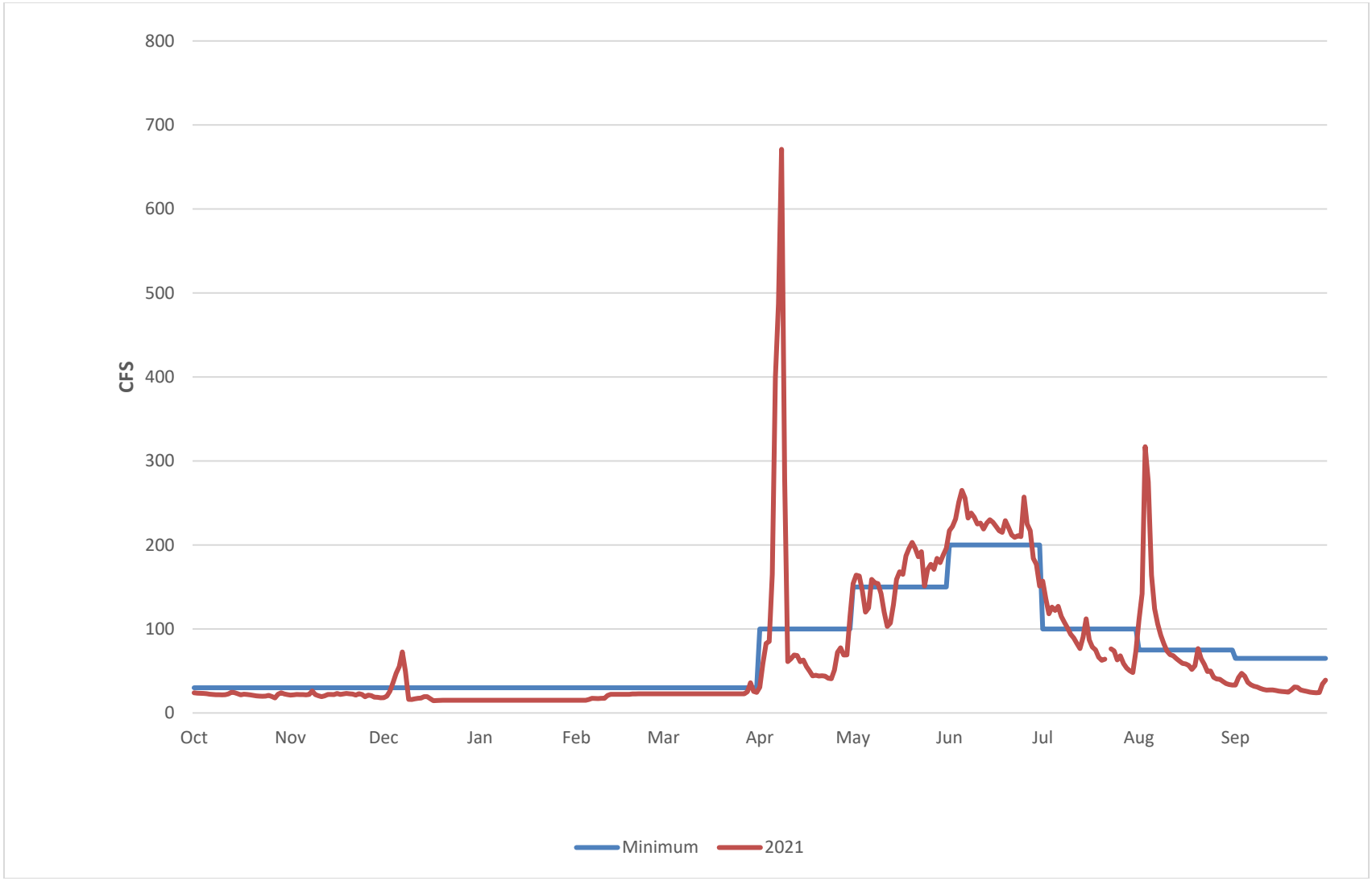

Exhibit 5: Fryingpan River near Thomasville Daily Discharge WY2021.

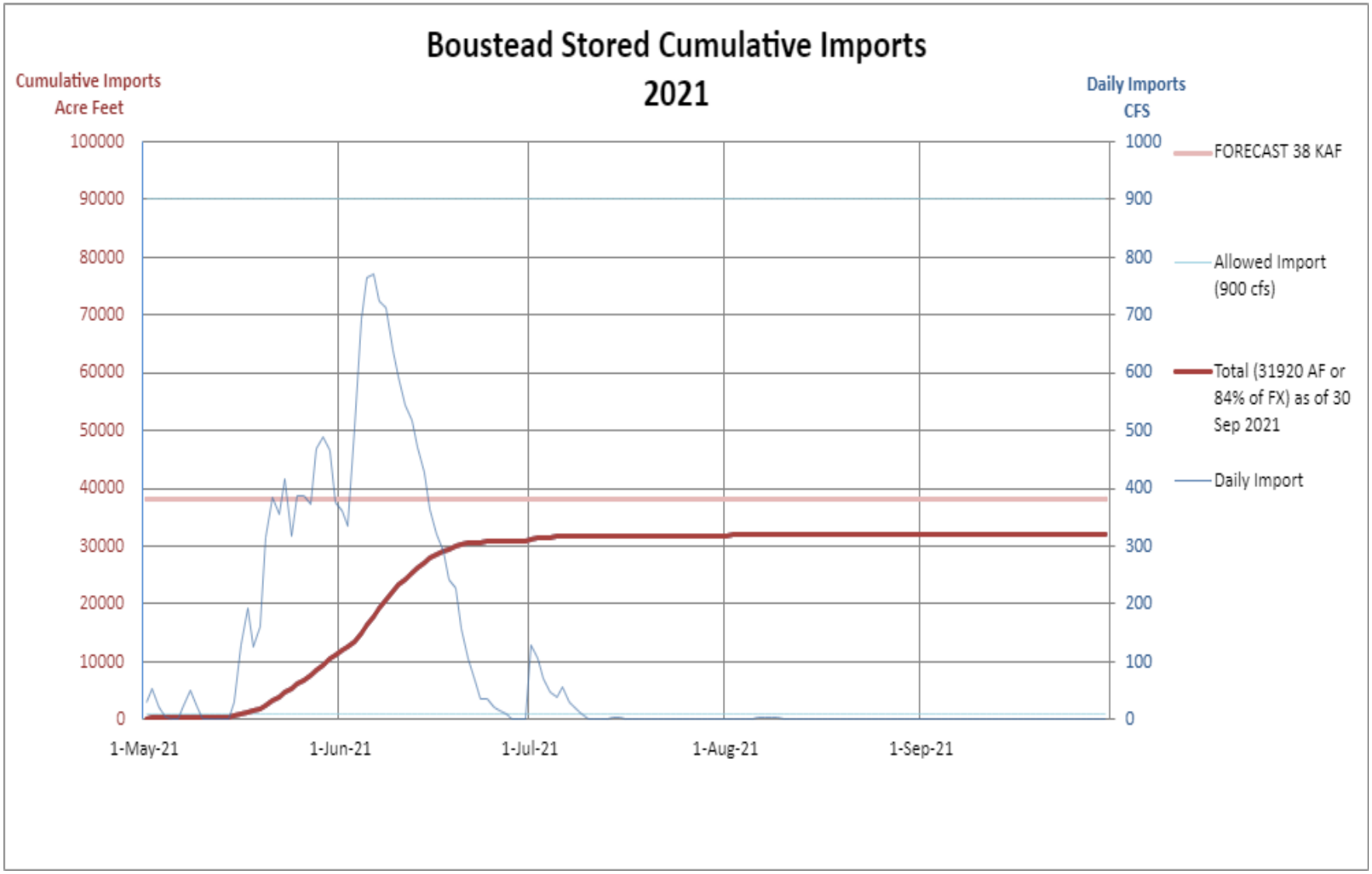

Exhibit 6: Boustead Tunnel Actual Operations WY2021.

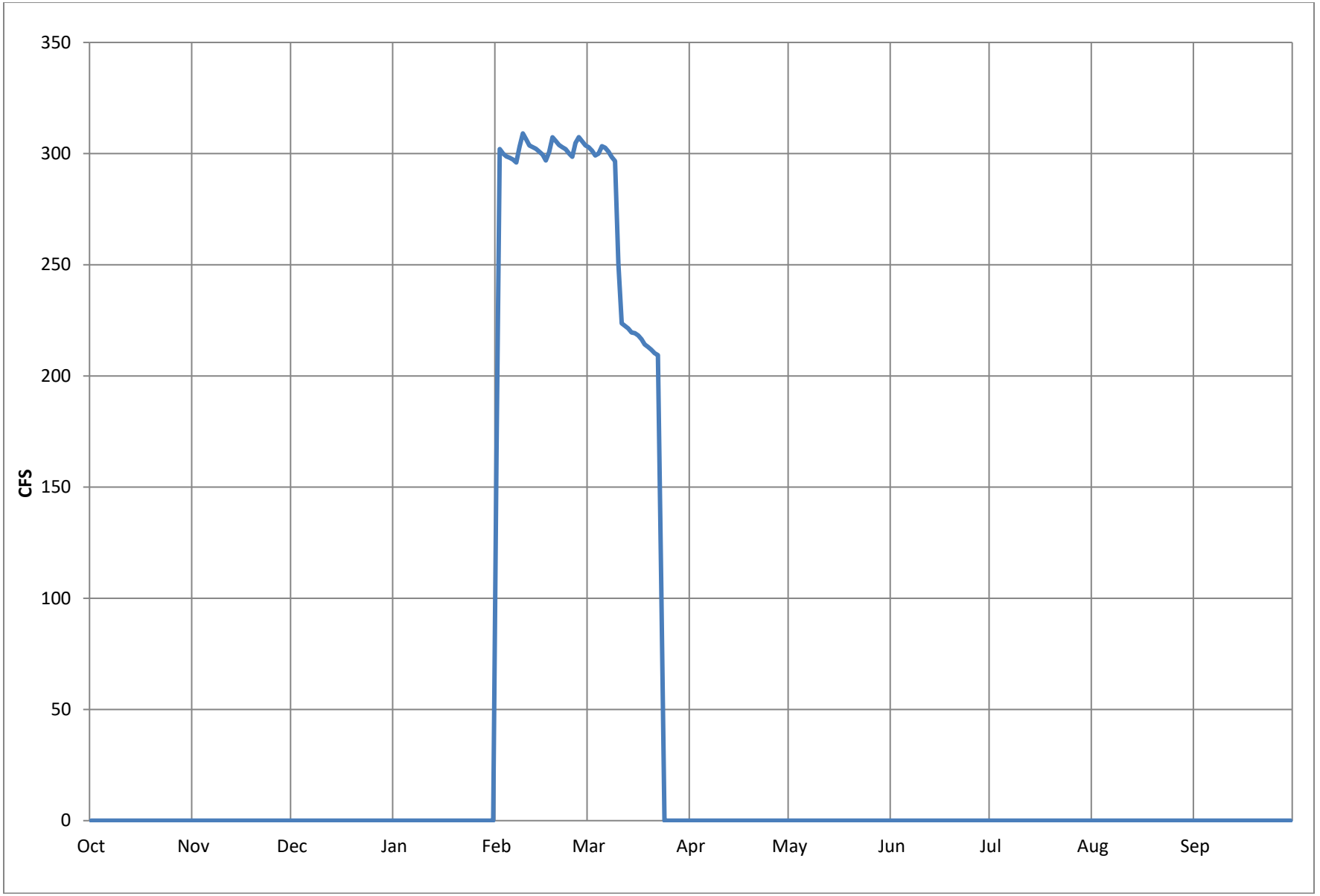

Exhibit 7: Homestake Tunnel Actual Operations WY2021.

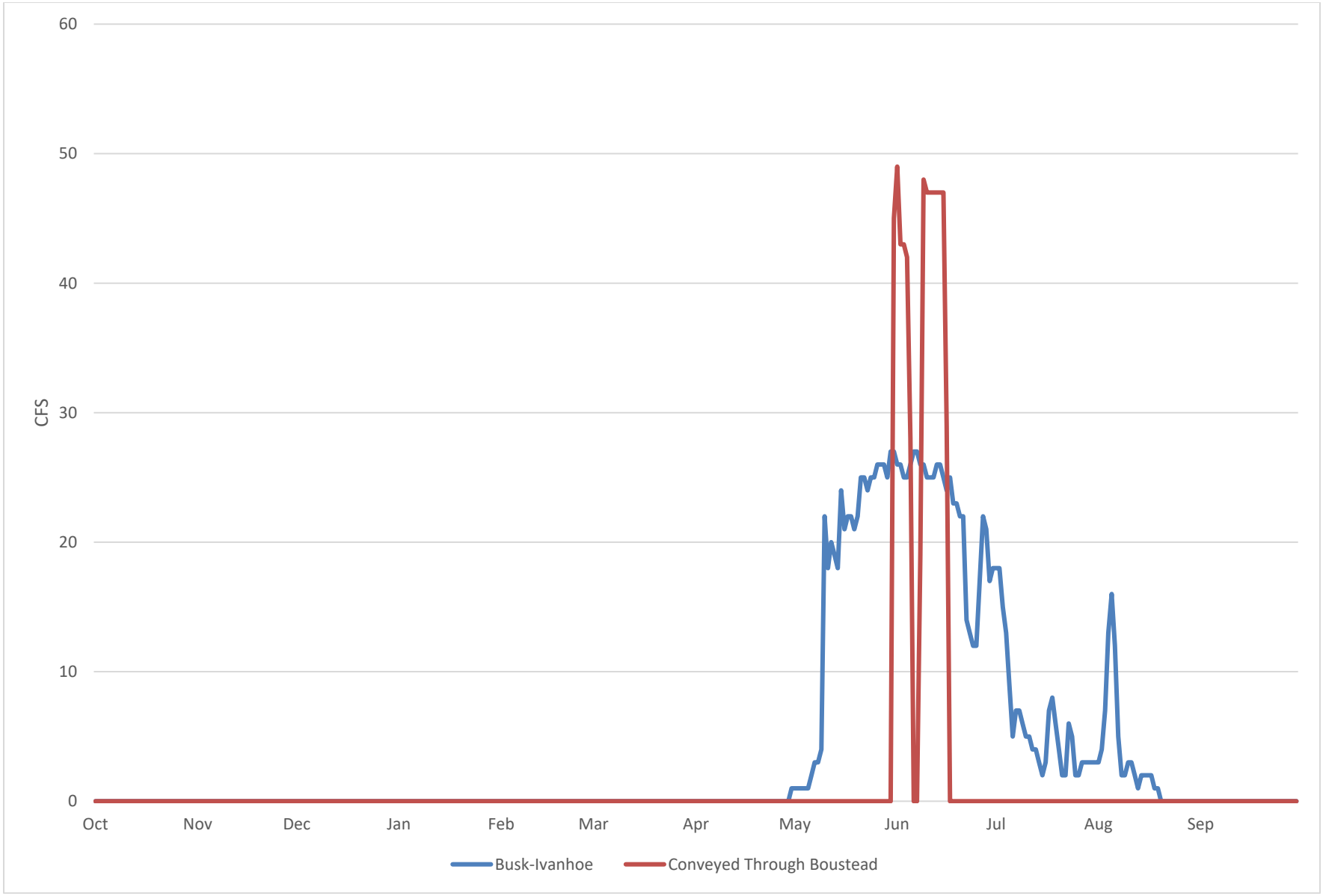

Exhibit 8: Busk-Ivanhoe Tunnel Actual Operations WY2021.

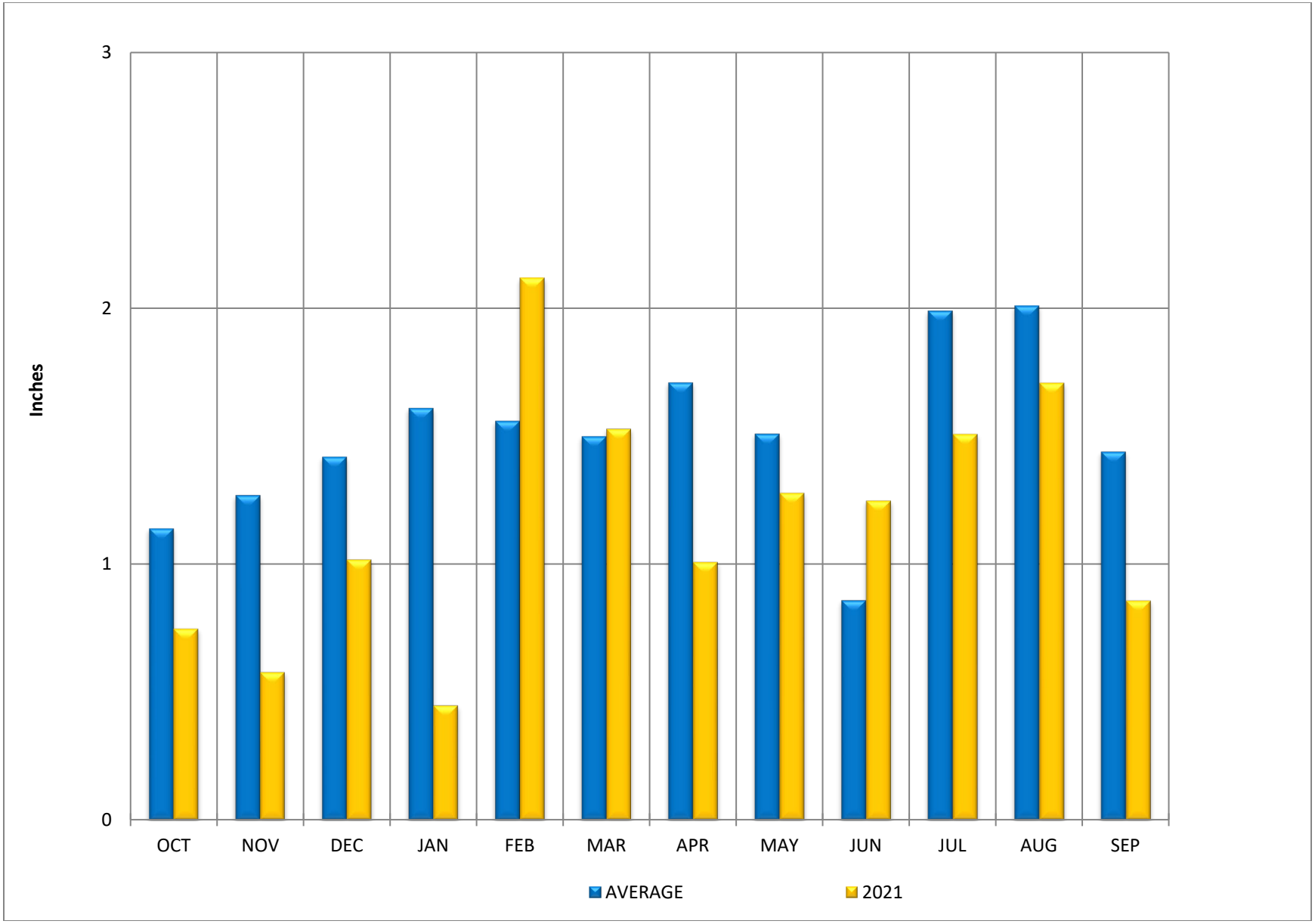

Exhibit 9: Turquoise Lake (Sugar Loaf Dam) Monthly Precipitation WY2021.

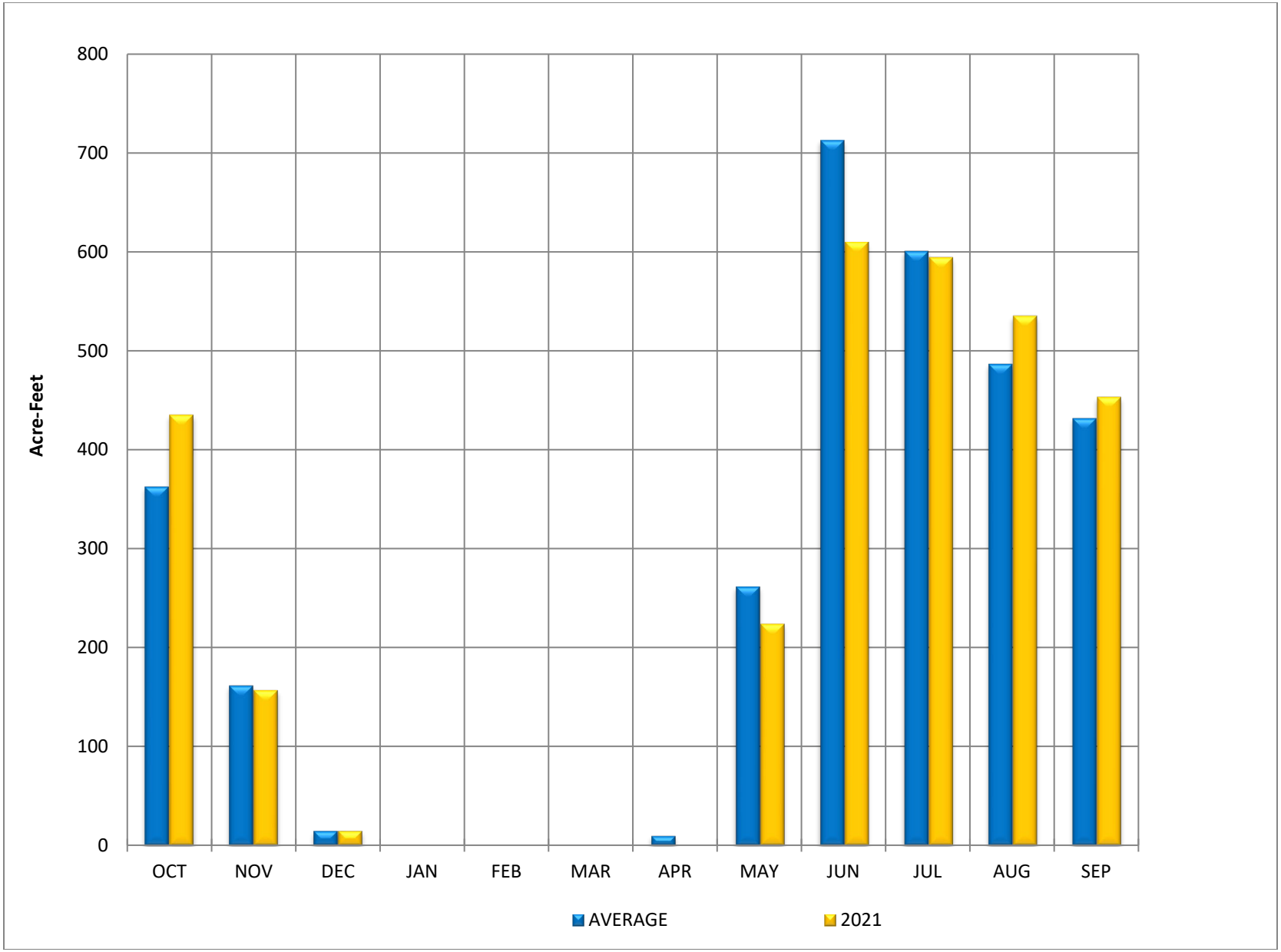

Exhibit 10: Turquoise Lake (Sugar Loaf Dam) Monthly Evaporation WY2021.

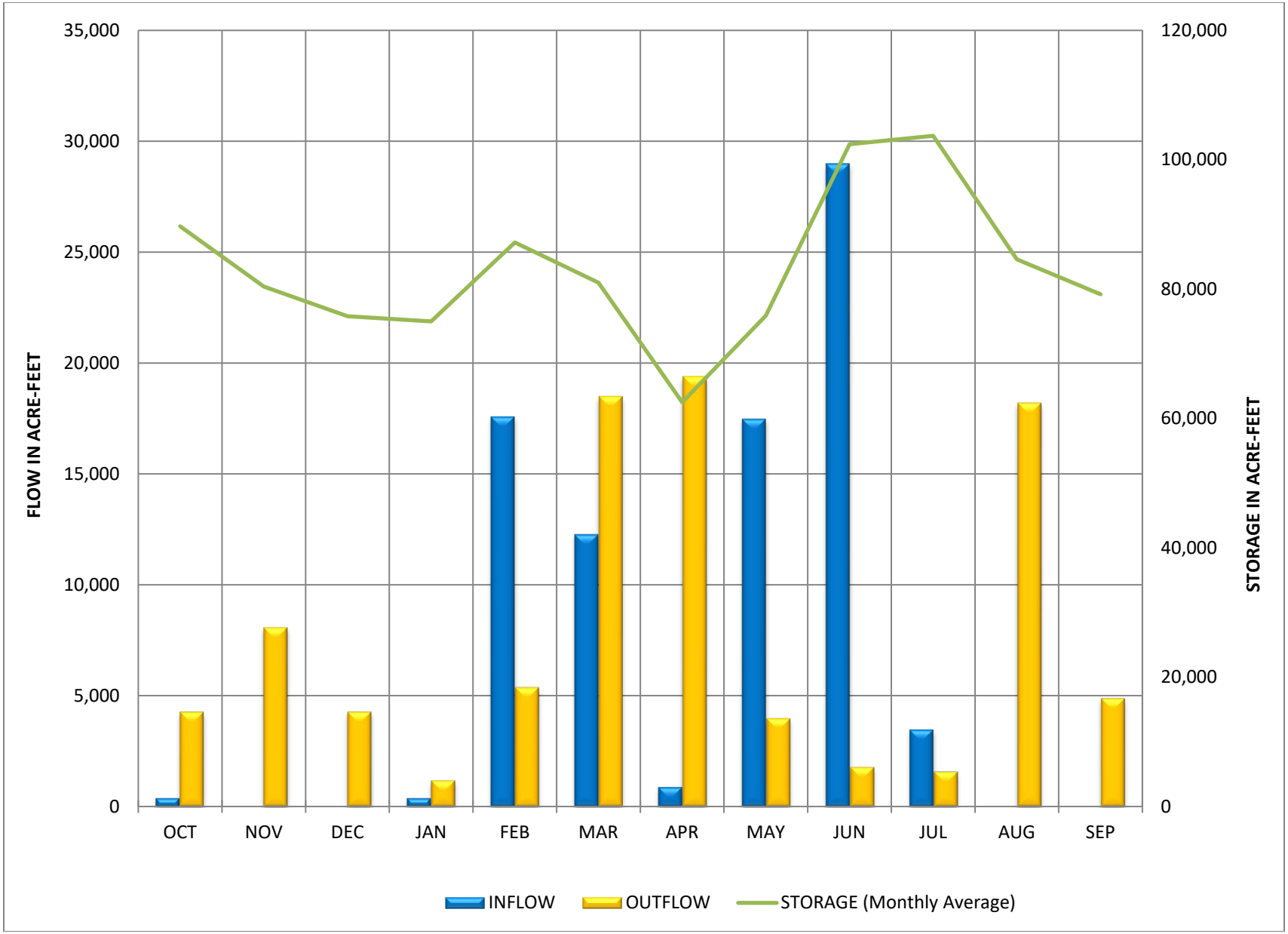

Exhibit 11: Turquoise Lake (Sugarloaf Dam) Actual Operations WY2021.

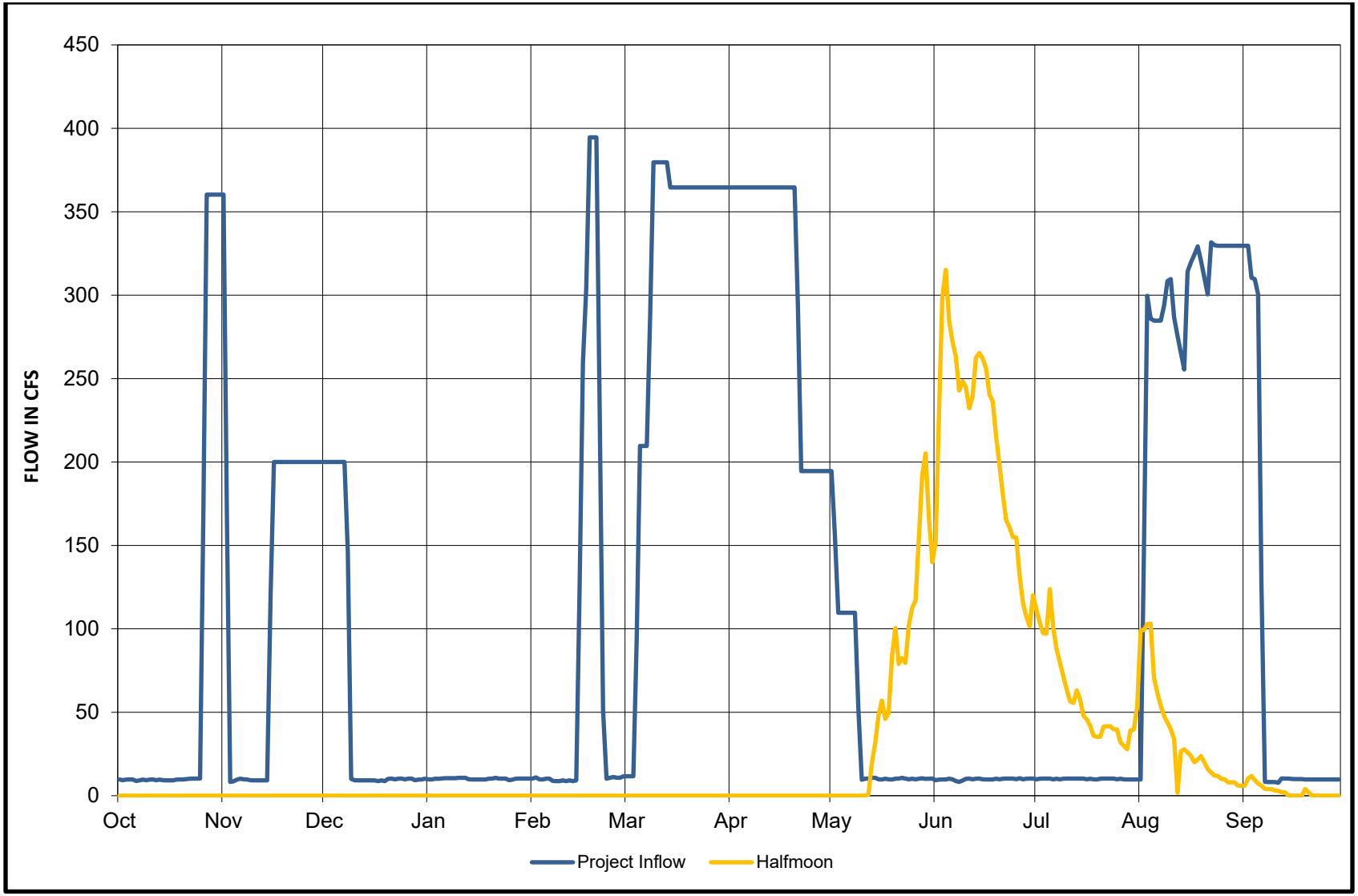

Exhibit 12: Mt. Elbert Conduit Inflow Actual Operations WY2021.

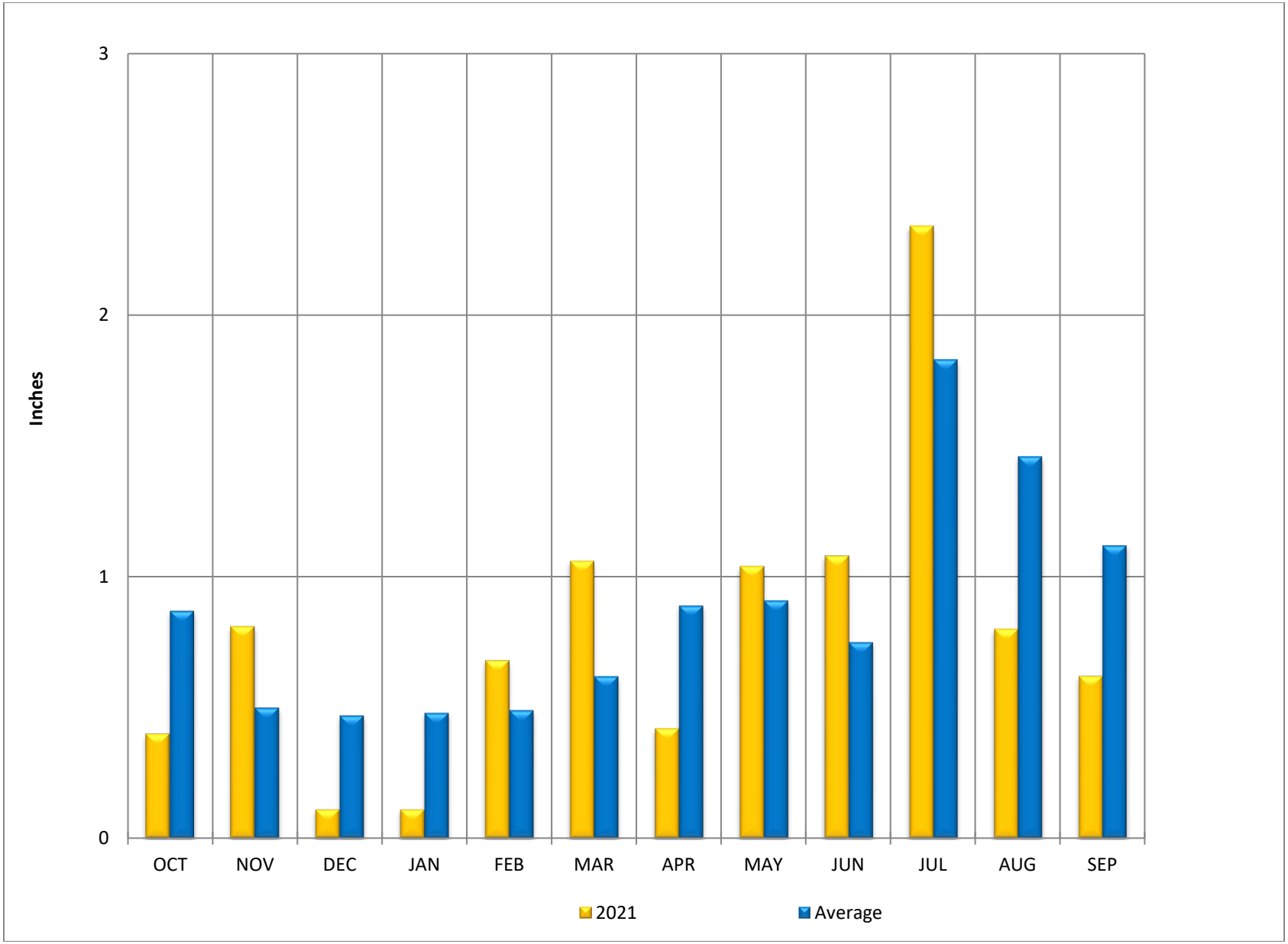

Exhibit 13: Twin Lakes Monthly Precipitation WY2021.

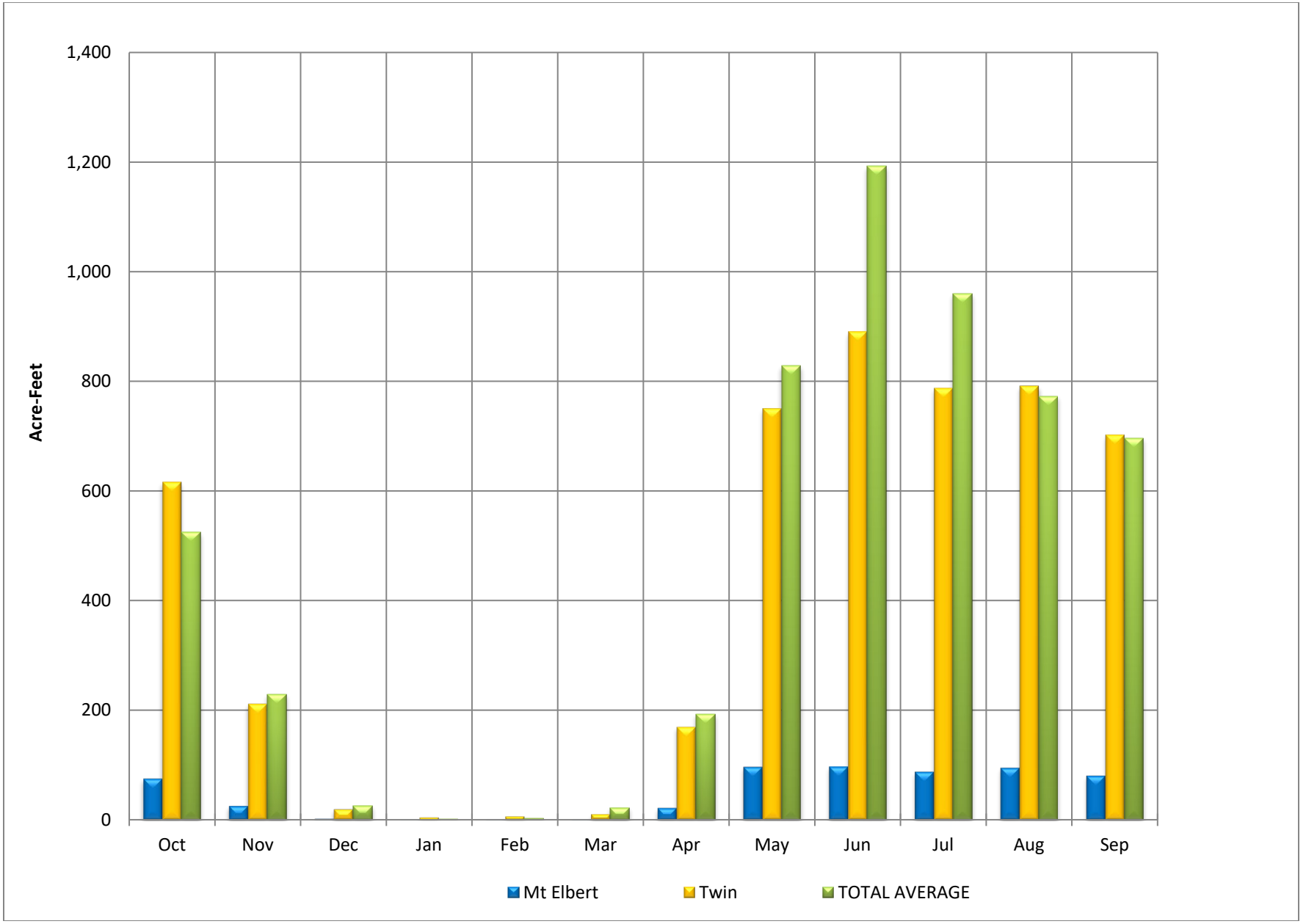

Exhibit 14: Twin Lakes Dam and Mt. Elbert Forebay Monthly Evaporation WY2021.

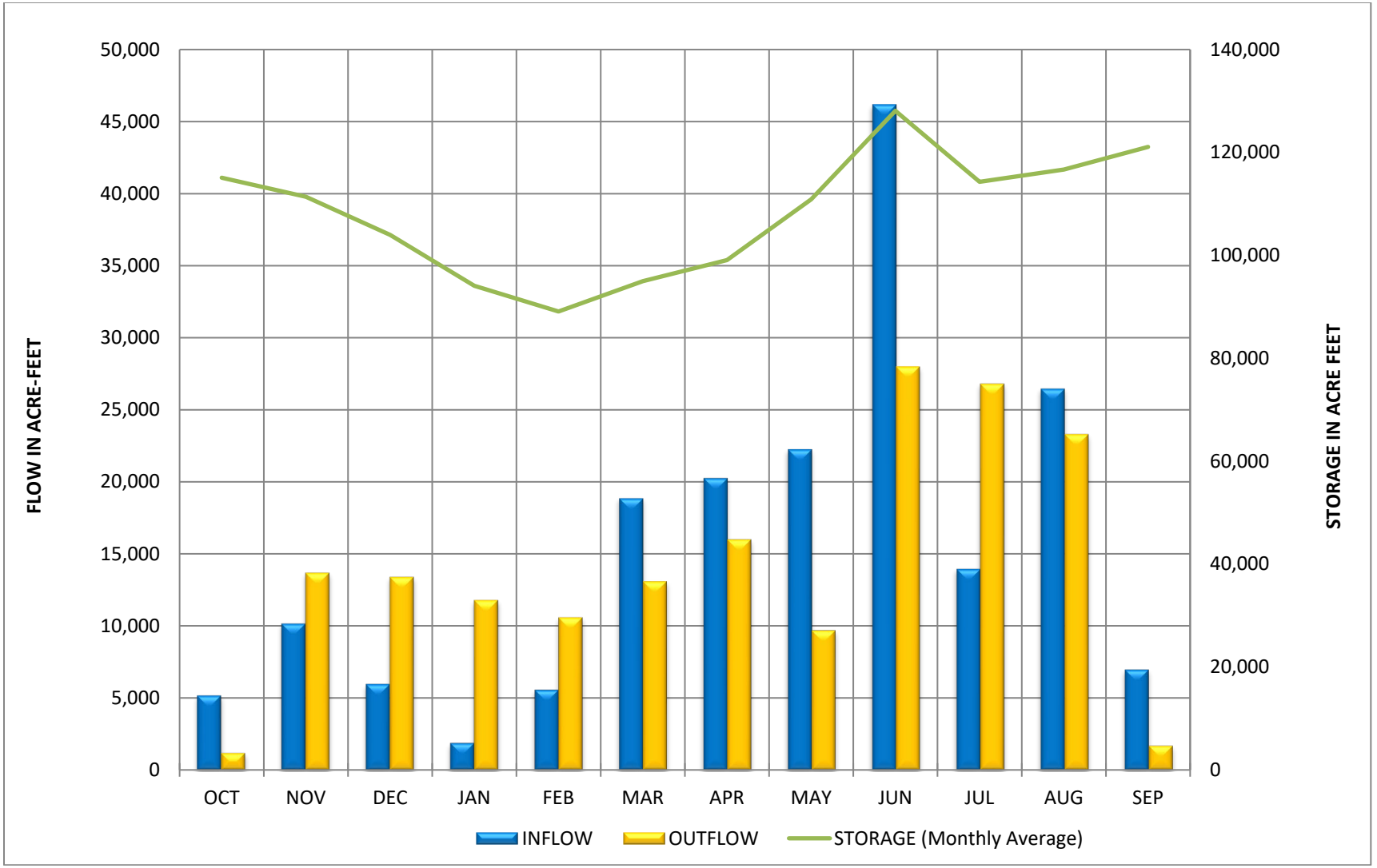

Exhibit 15: Twin Lakes/Mt. Elbert Forebay Actual Operations WY2021.

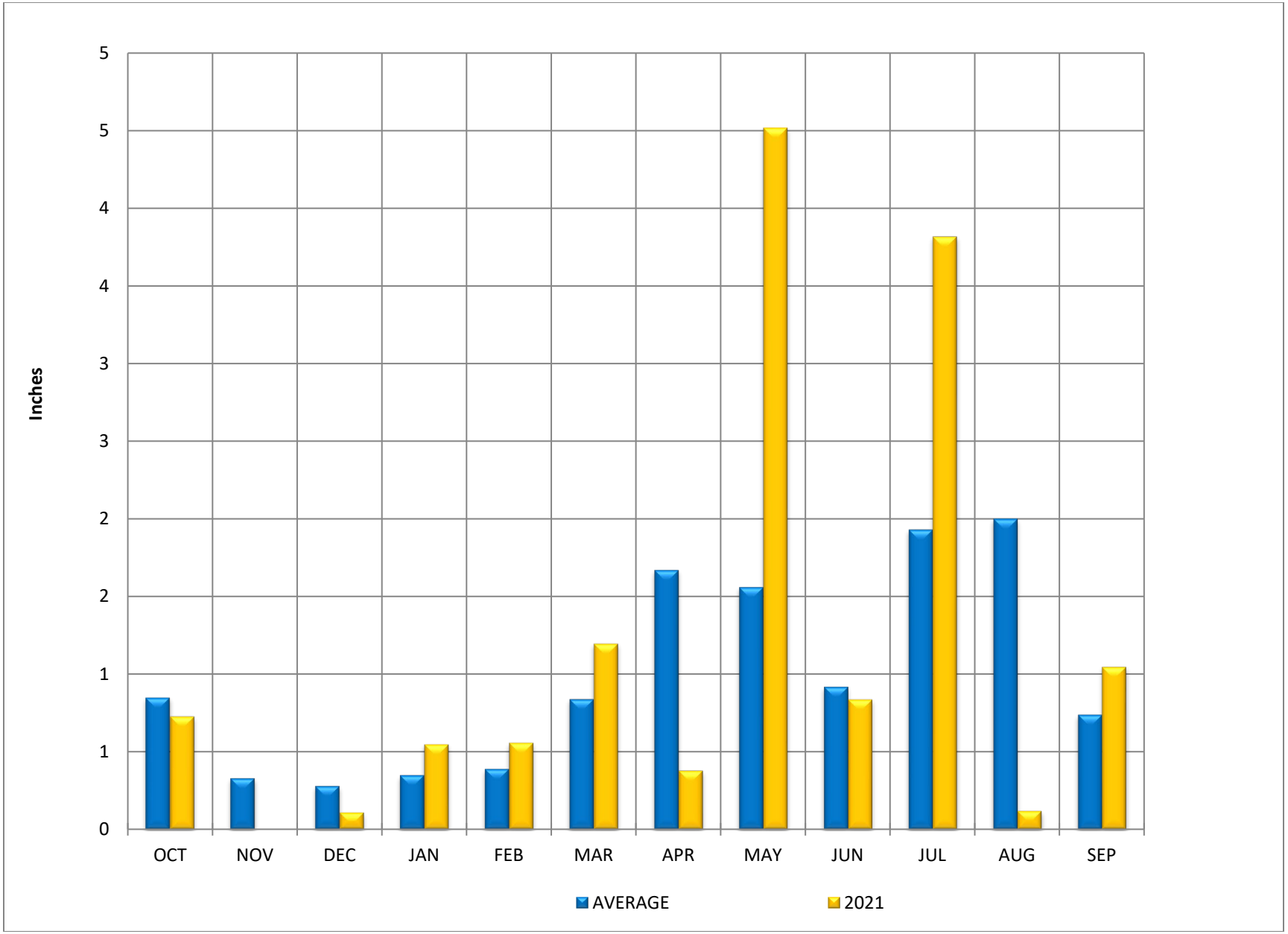

Exhibit 16: Pueblo Dam Monthly Precipitation WY2021.

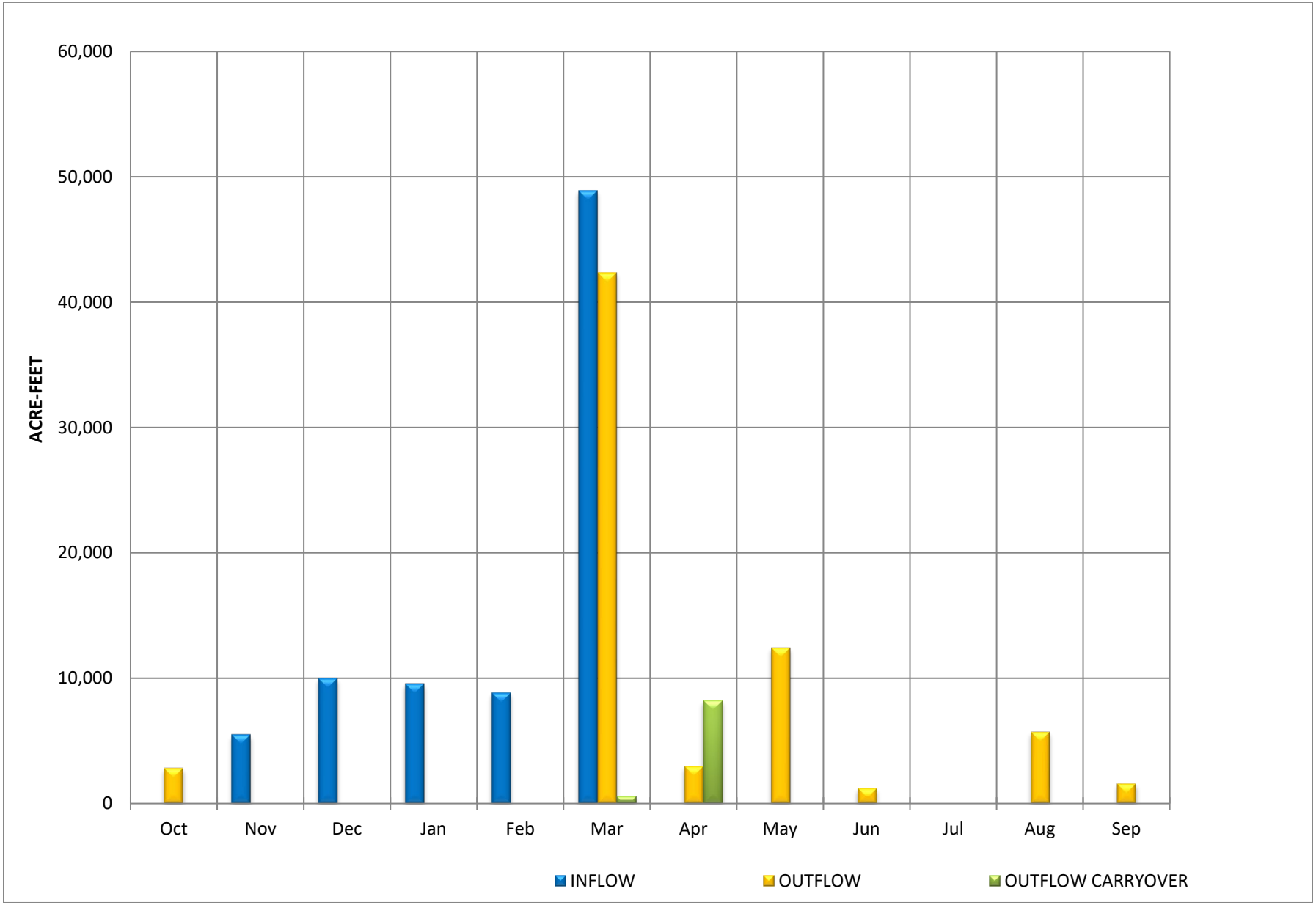

Exhibit 17: Pueblo Reservoir Winter Water WY2021.

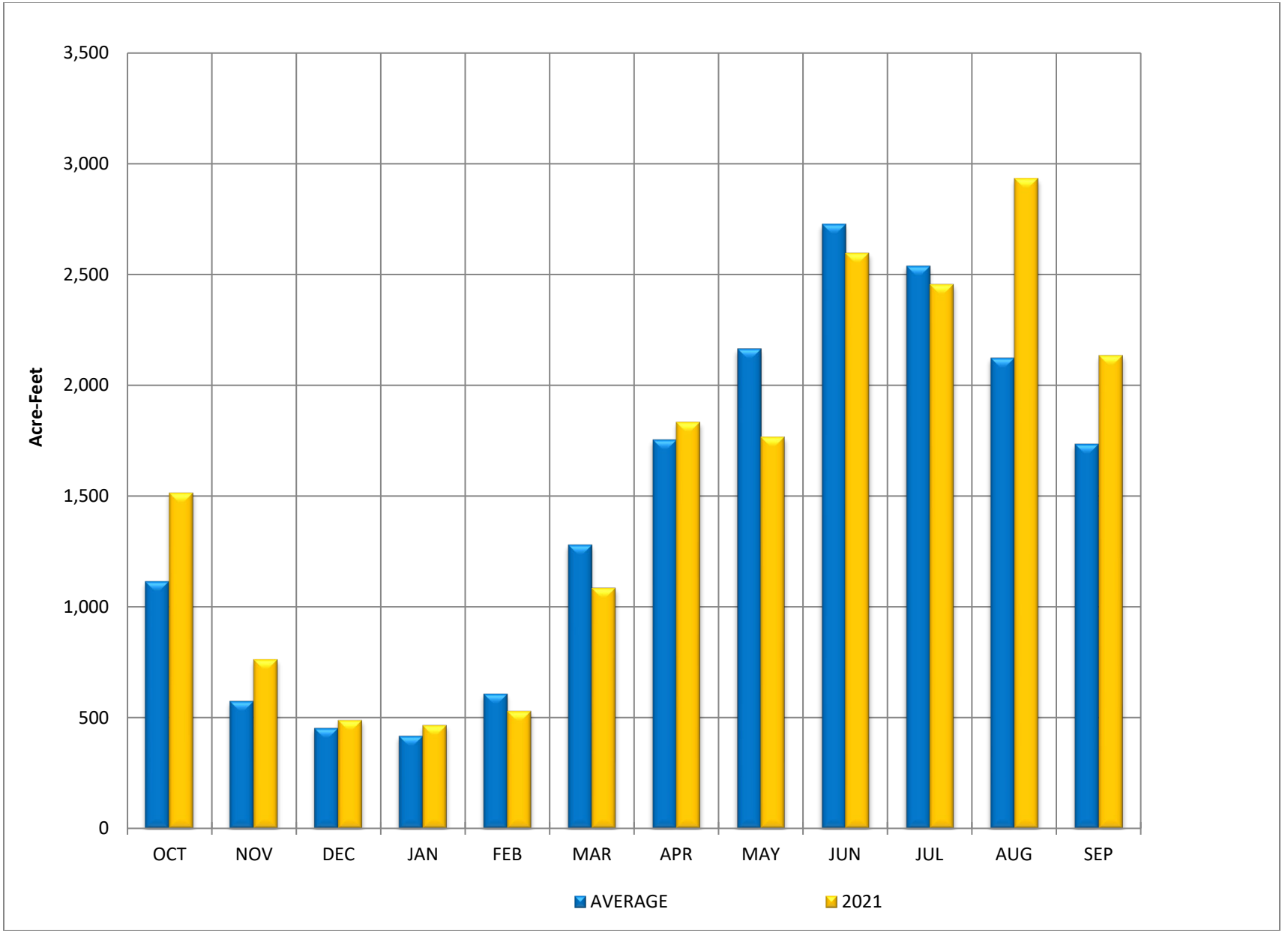

Exhibit 18: Pueblo Dam Monthly Evaporation WY2021.

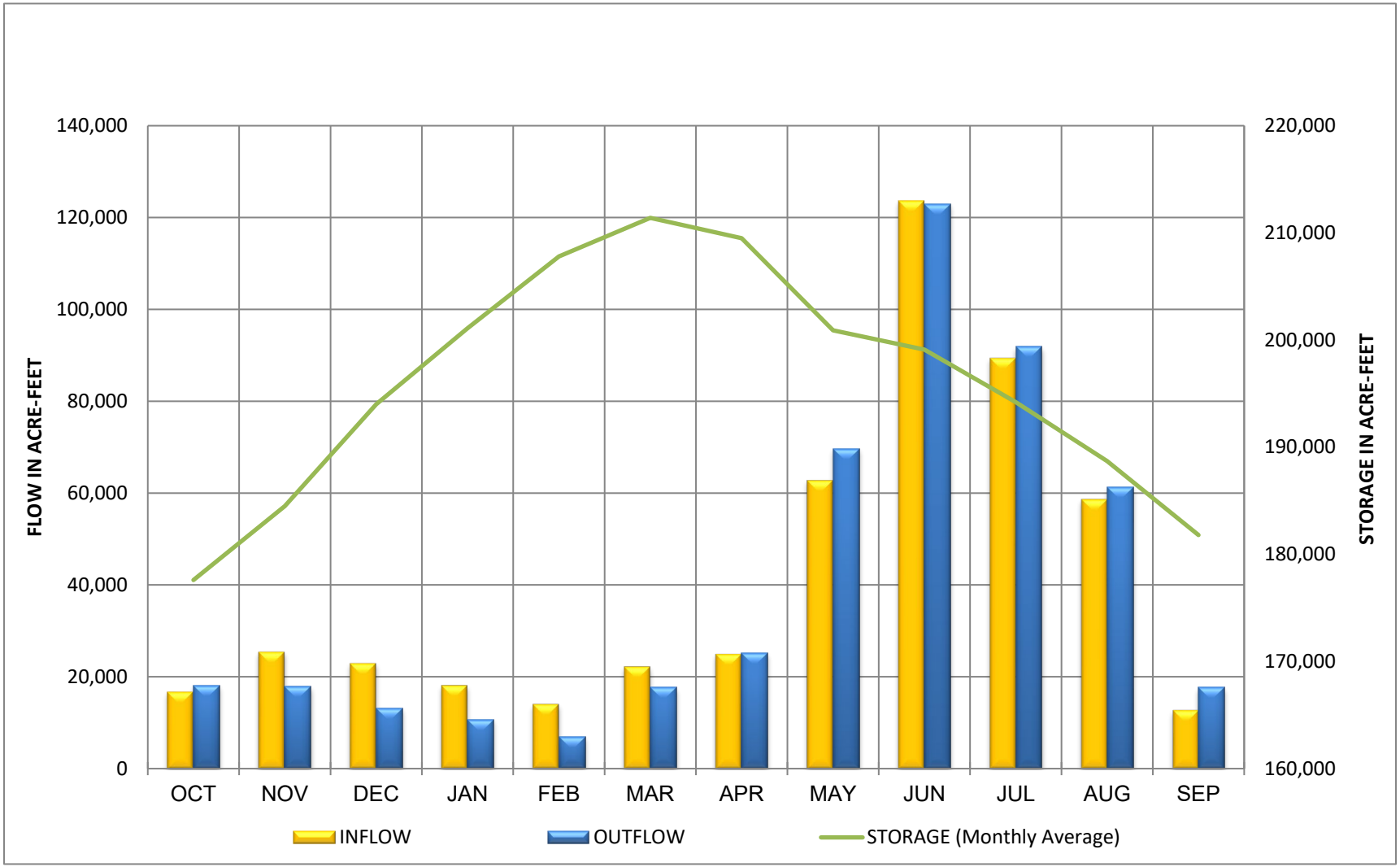

Exhibit 19: Pueblo Reservoir Actual Operations WY2021.

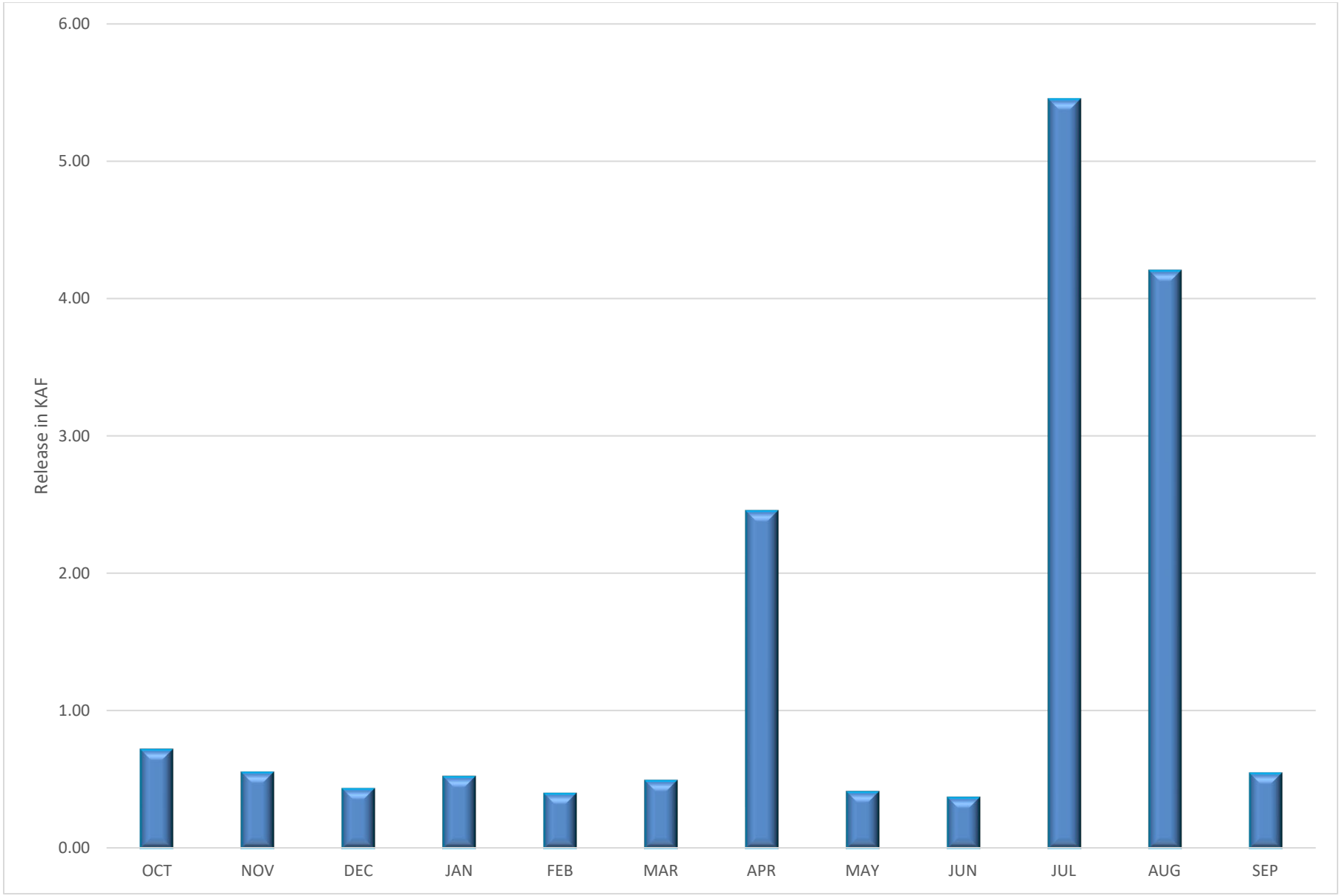

Exhibit 20: Releases of Fryingpan-Arkansas Project Water WY2021.

Appendix C: Twin Lakes Reservoir and Canal Company Exchange with Fryingpan-Arkansas Project Water

Twin Lakes Canal Company Exchange with Fryingpan-Arkansas Project Water WY2021

Table C-1: Twin Lakes Canal Company Exchanges with Fryingpan-Arkansas Project Water (Units = Acre-ft)

	Lincoln Creek below Grizzly Reservoir[1]	Roaring Fork above Lost Man[2]	Total Exchanged[3]	Twin Lakes Storage (3) x 0.9913 [1]
Oct 2020	0	0	0	0
Nov 2020	0	0	0	0
Dec 2020	0	0	0	0
Jan 2021	0	0	0	0
Feb 2021	0	0	0	0
Mar 2021	0	0	0	0
Apr 2021	0	0	0	0
May 2021	0	0	0	0
Jun 2021	1,721	234	1,955	1,938
Jul 2021	817	254	1,071	1,062
Aug 2021	0	0	0	0
Sep 2021	0	0	0	0
Total	**2,538**	**488**	**3,026**	**3,000**

[1] 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 may prevent the total 3000 x 0.9913 from being stored

Please see the discussion in Chapter IV, Paragraph C for a full discussion of the Twin Lakes Canal Company Exchange in WY2021

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·

Month	Grizzly Diversion (cfs)	Roaring Fork Diversion (cfs)
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	45.0	4.0
July	45.0	4.0
August	45.0	3.0
September	4.0	3.0

3. At any time the Twin Lakes Reservoir and Canal Company (TLCC) 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.

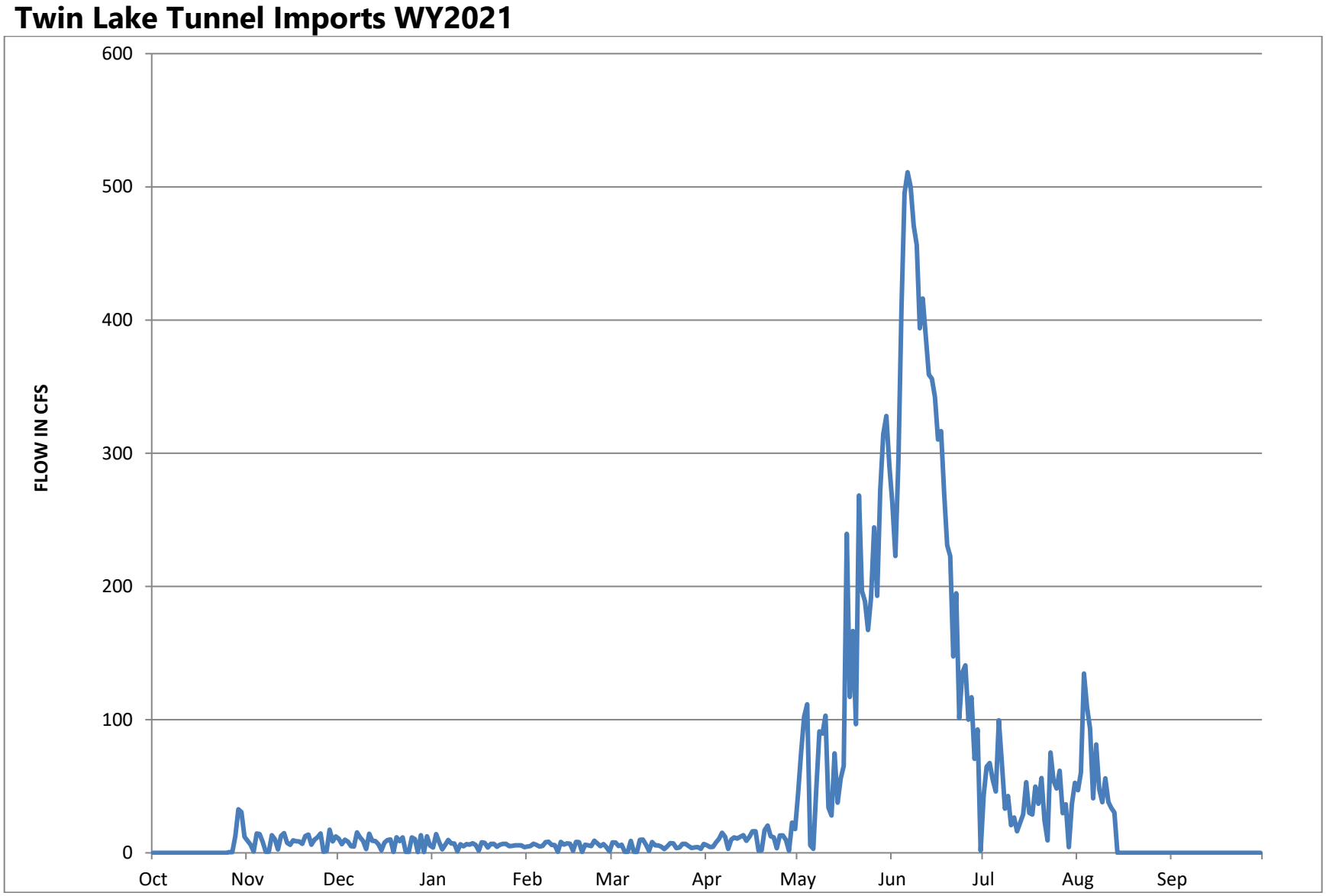

Figure C-1: Graph of Twin Lakes Tunnel Imports for Water Year 2021.

Twin Lakes Canal Company Storage WY2021

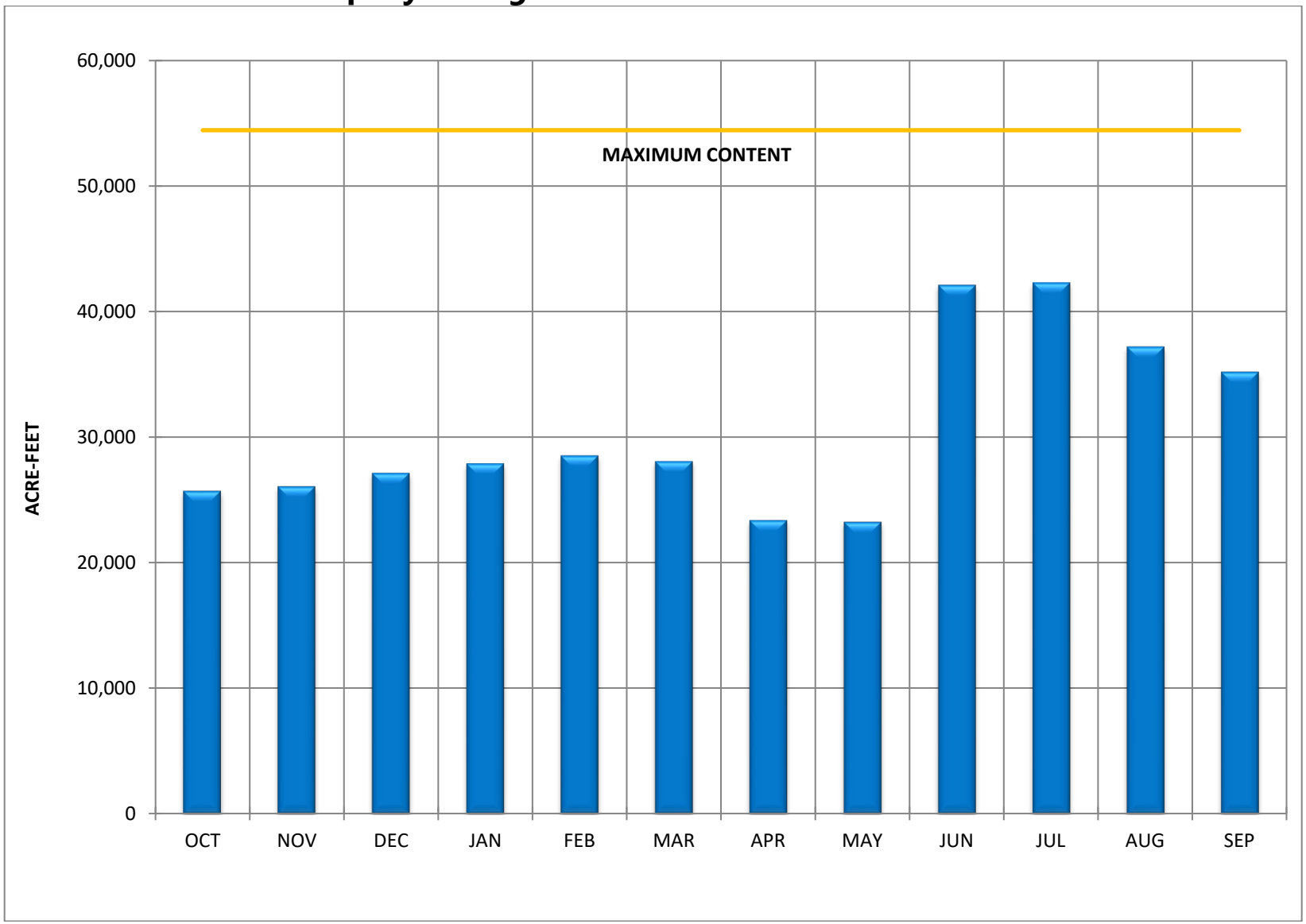

Figure C-2: Graph of Twin Lakes Canal Company Storage for Water Year 2021.

Appendix D: Daily Discharge Records, Fryingpan-Arkansas Project Collection System

Carter Feeder Conduit near Norrie, CO

Table D-1: Water Year 2021 daily data for Carter Feeder Conduit near Norrie, CO (Units: Cubic Feet per Second, Source: Bureau of Reclamation)

	April	May	June	July	August	September
1		11.3	20.4	.2		
2		13	24.1	.1		
3		6.4	29.3			
4		2.1	34.7			
5		.2	38.3			
6		.4	37.7			
7		4.6	34.8			
8		8.3	36.3			
9		4.2	34.5			
10		1.9	31.5			
11		.4	31.5			
12		.1	27.9			
13		0	26.8			
14		.8	26.2			
15		6.2	25.1			
16		15	23.8			
17		17.3	21.4			
18		16.9	20.2			
19		22.8	21.7			
20		28	19			
21		30.3	12.7			
22		27.4	4.6			
23		31.1	.4			
24		19.8	.3			
25		23.4	.3			
26		26	.3			
27		20.2	.3			
28		26.5	.2			
29	.1	25.9	.2			
30	3.7	25	.2			
31		19.6				
TOTAL	**3.8**	**435.2**	**584.7**	**.3**		
AVERAGE	**.3**	**14**	**19.5**	**.2**		
MAX	**3.7**	**31.1**	**38.3**	**.2**		

WY2021 Total: 2031.1 acre-feet
Maximum Instantaneous Peak: 50.2 cfs on 6 Jun 210
Blank: Recorder not operated. No water diverted
M: Missing Data

North Fryingpan River Feeder Conduit near Norrie, CO

Table D-2: Water Year 2021 daily data for North Fryingpan River Feeder Conduit near Norrie, CO (Units: Cubic Feet per Second, Source: Bureau of Reclamation)

	April	May	June	July	August	September
1		0.5	6.5			
2		0.8	7.4			
3		0.6	10.7			
4		0.1	15.4			
5		0	16.2			
6		0.1	14.2			
7		0.6	13.1			
8		1.5	13			
9		1.2	12.1			
10		0.7	10.8			
11		0.3	10.1			
12		0	8.5			
13		0	7.3			
14		0	6.7			
15		0.6	6.1			
16		2	5.7			
17		2.7	5.1			
18		2.7	4.7			
19		3.7	4.6			
20	0.1	6.1	4.2			
21	0.1	7.7	1.5			
22	0.1	8.1	0.1			
23	0	9.1	0.1			
24	0	7.1	0.1			
25	0	7.7	0.1			
26	0	7.8	0.1			
27	0	7.3	0.1			
28	0	8				
29	0	8.5				
30	0	8				
31		6.8				
TOTAL	**0.4**	**110.4**	**184.2**	**0**		
AVERAGE	**0**	**3.6**	**6.1**	**0**		
MAX	**0.1**	**9.1**	**16.2**	**0**		

WY2021 Total: 585.4 acre-feet
Maximum Instantaneous Peak: 18.4 cfs on 4 Jun 21
Blank: Recorder not operated. No water diverted
M: Missing Data

South Fork Fryingpan River Feeder Conduit near Norrie, CO

Table D-3: Water Year 2021 daily data for South Fork Fryingpan River Feeder Conduit near Norrie, CO (Units: Cubic Feet per Second, Source: Bureau of Reclamation)

	April	May	June	July	August	September
1		2.8	26.5	28.9		
2		8.8	27.4	22.1		
3		4.9	55.6	16.1		
4		1.3	93	10.8		
5		1.3	104.9	9.3		
6		1.3	109.2	14.3		
7		8.4	96.6	6.9		
8		8.9	91.1	2.9		
9		1.8	80.8	1.3		
10		1.3	68.4	1.3		
11		1.3	54.1	1.3		
12		1.3	36.5	1.3		
13		1.3	37.9	1.3		
14		1.3	43.8	1.3		
15		4.7	41.5	1.3		
16		20.3	37.6	0.5		
17		23.4	34.4			
18		14.1	26.6			
19		19.9	20.8			
20		48.7	7.7			
21		58.2	10.9			
22		50.6	10.5			
23		57.5	4.6			
24		51.9	1.8			
25		55.1	1.3			
26		49	1.3			
27		49.2	1.3			
28	0.9	63.1	1.3			
29	1.4	67.9	1.3			
30	1.5	61.8	13.4			
31		39.5				
TOTAL	**3.8**	**781.1**	**1142.4**	**121.2**		
AVERAGE	**1.3**	**25.2**	**38.1**	**7.6**		
MAX	**1.5**	**67.9**	**109.2**	**28.9**		

WY2021 Total: 4063.0 acre-feet
Maximum Instantaneous Peak: 164.9 cfs on 4 Jun 21
Blank: Recorder not operated. No water diverted
M: Missing Data

Mormon Creek Feeder Conduit near Norrie, CO

Table D-4: Water Year 2021 daily data for Mormon Creek Feeder Conduit near Norrie, CO (Units: Cubic Feet per Second, Source: Bureau of Reclamation)

	April	May	June	July	August	September
1			21.9	0		
2			27.9	0		
3			38.4	0		
4		0.6	46.3	0		
5		0.2	48.1	0		
6		0.6	41.6	0		
7		6.1	39.7	0		
8		11.7	37.4	0		
9		5.9	33.6	0		
10		0.5	31.5	0		
11		0	28.7	0		
12		0	25.4	0		
13		0.2	23.6	0		
14		1.6	21.3	0		
15		8	19.9			
16		17.4	16.7			
17		18.4	15.4			
18		14.8	12.7			
19		18	13			
20		28.3	9.9			
21		31.2	3.4			
22		30.7	0.1			
23		33.9	0			
24		25.7	0			
25		28.7	0			
26		27.9	0			
27		27.4	0			
28		30.6	0			
29		31.3	0			
30		29	0			
31		22.7				
TOTAL		**451.2**	**556.5**	**0.2**		
AVERAGE		**16.1**	**18.6**	**0**		
MAX		**33.9**	**48.1**	**0**		

WY2021 total: 1999.3 acre-feet
Maximum Instantaneous Peak 62.0 cfs on 4 Jun 21
Blank: Recorder not operated. No water diverted
M: Missing Data

North Cunningham Feeder Conduit near Norrie, CO

Table D-5: Water Year 2021 daily data for North Cunningham Feeder Conduit near Norrie, CO (Units: Cubic Feet per Second, Source: Bureau of Reclamation)

	April	May	June	July	August	September
1		5.2	12.3			
2		4.8	15.7			
3		0.7	20.8			
4		0	23.8			
5		0	23			
6		0.2	21.3			
7		3.7	19.9			
8		7.1	19.8			
9		3.2	16.8			
10		0	16.1			
11		0	14.5			
12		0	12.8			
13		0	11.9			
14		0.3	10.4			
15		3.7	9.5			
16		9.6	7.6			
17		10.3	6.3			
18		8.1	5			
19		10.5	4.8			
20		15.1	2.7			
21		16.7				
22		16.1				
23		16.9				
24		13.6				
25		15				
26		13.8				
27		14.4				
28		16.3				
29		16.3				
30	2.2	15.8				
31		12.6				
TOTAL	**2.2**	**249.9**	**274.9**			
AVERAGE	**0.2**	**8.1**	**9.2**			
MAX	**2.2**	**16.9**	**23.8**			

WY2021 Total: 1045.5 acre-feet
Maximum Instantaneous Peak: 34.9 cfs on 8 Jun 21
Blank: Recorder not operated. No water diverted
M: Missing Data

Middle Cunningham Feeder Conduit near Norrie, CO

Table D-6: Water Year 2021 daily data for Middle Cunningham Feeder Conduit near Norrie, CO (Units: Cubic Feet per Second, Source: Bureau of Reclamation)

	April	May	June	July	August	September
1		0.7	15.7	0.3		
2		1.1	18.8	0.3		
3		0.5	25.8	0.3		
4		0	33	0.3		
5		0	35	0.3		
6		0.4	34.3	0.3		
7		1.5	33	0.3		
8		1.9	31.5	0.2		
9		1.2	28.9	0.1		
10		0.7	27.5	0.1		
11		0.2	24.9	0.1		
12		0	22.2	0.1		
13		0.3	20.6	0.1		
14		1	18.7	0.1		
15		2.5	17.3			
16		4.9	15.3			
17		5.9	13.3			
18		5.1	11.5			
19		7	10.9			
20		12	8.5			
21	0	14.5	3.2			
22	0	15.4	0.4			
23	0	16.9	0.4			
24	0	13.3	0.4			
25	0	14.9	0.3			
26	0	14.7	0.3			
27	0	17.2	0.3			
28	0	19.4	0.3			
29	0	20.2	0.3			
30	0.1	21	0.3			
31		17.2				
TOTAL	**0.3**	**231.8**	**452.7**	**3**		
AVERAGE	**0**	**7.5**	**15.1**	**0.2**		
MAX	**0.1**	**21**	**35**	**0.3**		

WY2021 Total: 1364.1 acre-feet
Maximum Instantaneous Peak: 45.6 cfs on 5 Jun 21
Blank: Recorder not operated. No water diverted
M: Missing Data

Ivanhoe Creek Feeder Conduit near Norrie, CO

Table D-7: Water Year 2021 daily data for Ivanhoe Creek Feeder Conduit near Norrie, CO (Units: Cubic Feet per Second, Source: Bureau of Reclamation)

	April	May	June	July	August	September
1		8.4	89.4	1.4		
2		11.1	81.6	1.4		
3		1.4	91.6	1.4		
4		1.4	97.9	1.4		
5		1.4	70.3	1.4		
6		1.4	35.2	1.4		
7		4.2	33	1.4		
8		12.8	57.3	1.4		
9		4.3	78.3	1.3		
10		1.4	74.5	1.2		
11		1.4	70.6	1.2		
12		1.4	67.6	1.2		
13		1.4	60.8	1.2		
14		1.4	53.8	1.2		
15		3.6	52.7	0.4		
16		16	23.3			
17		22	1.4			
18		12.4	1.4			
19		15	1.4			
20		26.8	1.4			
21	0	36.7	1.5			
22	0	37.5	1.4			
23	0	39.5	1.4			
24	0	30.7	1.4			
25	0	32.7	1.4			
26	0	30.7	1.4			
27	0	31.5	1.4			
28	0	33.5	1.4			
29	0	32.3	1.4			
30	1.4	31.8	1.4			
31	0	96.3				
TOTAL	**1.4**	**582.1**	**1057**	**18.6**		
AVERAGE	**0.1**	**18.8**	**35.2**	**1.2**		
MAX	**1.4**	**96.3**	**97.9**	**1.4**		

WY2021 total: 3290.9 acre-feet
Maximum Instantaneous Peak 117.7 on 4 Jun 21
Blank: Recorder not operated. No water diverted
M: Missing Data

Lily Pad Creek Feeder Conduit near Norrie, CO

Table D-8: Water Year 2021 daily data for Lily Pad Creek Feeder Conduit near Norrie, CO (Units: Cubic Feet per Second, Source: Bureau of Reclamation)

	April	May	June	July	August	September
1		0.1	10			
2		0.1	10			
3		0.1	10			
4		0.1	10			
5		0.1	10			
6		23.8	10			
7		46.4	10			
8		46.4	10			
9		46.4	10			
10		46.4	10			
11		46.4	10			
12		46.4	10			
13		46.6	10			
14		46.7	10			
15		46.6	10			
16		46.4	10			
17		46.4	10			
18		46.4	10			
19		46.4	10			
20		46.3	10			
21		46.1	10			
22	0.1	46.2	10			
23	0.1	46.4	10			
24	0.1	46.4	10			
25	0.1	46.3	10			
26	0.1	32.9	10			
27	0.1	10	10			
28	0.1	10	10			
29	0.1	10	10			
30	0.1	10	10			
31		10				
TOTAL	**0.8**	**988.4**	**298.8**			
AVERAGE	**0.1**	**31.9**	**10**			
MAX	**0.1**	**46.7**	**10**			

WY2021 Total: 2554.7 acre-feet
Maximum Instantaneous Peak: 51.0 on 6 May 21
Blank: Recorder not operated. No water diverted
M: Missing Data

Granite Creek Feeder Conduit near Norrie, CO

Table D-9: Water Year 2021 daily data for Granite Creek Feeder Conduit near Norrie, CO (Units: Cubic Feet per Second, Source: Bureau of Reclamation)

	April	May	June	July	August	September
1			14	9.5		
2			14.3	7.6		
3			17.8	6.7		
4			24.1	6		
5			26.8	5.9		
6			26.5	6.5		
7			27.2	5.3		
8			26.7	4.7		
9			24.4	4.3		
10			23.7	3.9		
11			22.1	3.6		
12			20.3	3.3		
13			19.2	3.1		
14			18	4.3		
15		1.3	17.2	2.2		
16		2.6	16	9.5		
17		3.7	14.9	7.6		
18		3.2	14.4	6.7		
19		4.2	15.4	6		
20		6.5	12.5	5.9		
21		8.3	10.8	6.5		
22		8.9	9.8	5.3		
23		9.8	8.6			
24		8.9	10.3			
25		10.7	10			
26		11.9	9.1			
27		14	8.1			
28		15.8	7.2			
29		16.6	6.6			
30		16.4	7.5			
31		14.5				
TOTAL		**157.3**	**483.5**	**76.9**		
AVERAGE		**5.4**	**16.1**	**5.1**		
MAX		**16.6**	**27.2**	**9.5**		

WY2021 Total: 1297.1 acre-feet
Maximum Instantaneous Peak: 33.6 cfs on 7 Jun 21
Blank: Recorder not operated. No water diverted
M: Missing Data

No Name Creek Feeder Conduit near Norrie, CO

Table D-10: Water Year 2021 daily data for No Name Creek Feeder Conduit near Norrie, CO (Units: Cubic Feet per Second, Source: Bureau of Reclamation)

	April	May	June	July	August	September
1		0	25.4			
2		0	29.1			
3		0	33.3			
4		0	33.1			
5		0	31.4			
6		0	39.4			
7		0	34.9			
8		0.96	32.2			
9		0	31.5			
10		0	30.7			
11		0	26.3			
12		0	22.4			
13		0	19.9			
14		0	17.2			
15		0	14.8			
16		2.92	12.5			
17		6.44	9.92			
18		3.76	7.85			
19		5.37	6.59			
20		12.4	4.98			
21		15.4	3.4			
22		16.8	0.91			
23		20.3	0.05			
24		18.7	0.02			
25		23.2	0			
26		20.5	0			
27		23	0			
28		28.9	0			
29		29.8	0			
30		27.5	1.17			
31		24.9				
TOTAL		**280.9**	**470**			
AVERAGE		**9.1**	**15.6**			
MAX		**29.8**	**39.4**			

WY2021 Total: 1493.3 acre-feet.
Maximum Instantaneous Peak: 51.9 cfs on 5 Jun 21
Blank: Recorder not operated.
M: Missing Data

Midway Creek Feeder Conduit near Norrie, CO

Table D-11: Water Year 2021 daily data for Midway Creek Feeder Conduit near Norrie, CO (Units: Cubic Feet per Second, Source: Bureau of Reclamation)

	April	May	June	July	August	September
1		0.93	37.1	11.8		
2		2.49	41.4	9.32		
3		0	54.6	7.29		
4		0	66.1	5.65		
5		0	62.4	5.34		
6		0	74.8	5.89		
7		1.82	80.4	3.63		
8		4.07	79	1.24		
9		0.58	76.8			
10		0	74.1			
11		0	71.7			
12		0	67.1			
13		0	64.4			
14		0.21	59.5			
15		1.27	55.4			
16		7.65	51.8			
17		11.1	46.2			
18		8.76	40.5			
19		12.3	36			
20		22.4	30.2			
21		24.6	24.9			
22		22.9	21.5			
23		26.4	17.4			
24		24.8	8.61			
25		31.7	0			
26		29.2	0			
27		34.6	0			
28		41.3	0			
29		45.9	0			
30		45	5.96			
31		41.2	37.1			
TOTAL		**441.2**	**1247.9**	**50.16**		
AVERAGE		**14.2**	**541.6**	**6.3**		
MAX		**48.1**	**78.5**	**11.8**		

WY2021 Total: 3449.7 acre-feet.
Maximum Instantaneous Peak: 91.5 cfs on 11 Jun 21
Blank: Recorder not operated.
M: Missing Data

Hunter Creek Feeder Conduit near Norrie, CO

Table D-12: Water Year 2021 daily data for Hunter Creek Feeder Conduit near Norrie, CO (Units: Cubic Feet per Second, Source: Bureau of Reclamation)

	April	May	June	July	August	September
1		0	27.9	18.2		
2		0	34.7	10.8		
3		0	50.8	7.22		
4		0	56.1	4.14		
5		0	58.9	2.41		
6		0	61	5.39		
7		1.31	64.1	0.58		
8		3.05	69.3			
9		0	69.9			
10		0	69.1			
11		0	67.9			
12		0	62.9			
13		0	60.4			
14		0	56.1			
15		0	54			
16		4.98	52.1			
17		12.1	48.1			
18		7.42	40.9			
19		13.7	36.6			
20		28.9	29			
21		29.5	22.8			
22		23.2	19.4			
23		28	14.2			
24		24.6	7.02			
25		34.2	0			
26		29.7	0			
27		35.3	0			
28		43.6	0			
29		43.9	0			
30		40.5	8.88			
31		32.0				
TOTAL		**436.0**	**1142.1**	**48.7**		
AVERAGE		**14.1**	**38.1**	**7.0**		
MAX		**43.9**	**69.6**	**18.2**		

WY2021 Total: 3226.8 acre-feet
Maximum Instantaneous Peak: 93.6 CFS ON 25 Jun 21
Blank: Recorder not operated. No water diverted
M: Missing Data

Sawyer Creek Feeder Conduit near Norrie, CO

Table D-13: Water Year 2021 daily data for Sawyer Creek Feeder Conduit near Norrie, CO (Units: Cubic Feet per Second, Source: Bureau of Reclamation)

	April	May	June	July	August	September
1		0.8	13.6	6.3		
2		1.7	13.7	5.5		
3		1.4	18	5.1		
4		1.4	25.9	4.7		
5		1.3	29.5	4.6		
6		1.5	30	4.6		
7		1.9	27.6	4.1		
8		2.1	25.7	3.7		
9		1.8	24.1	3.4		
10		1.6	23	3.2		
11		1.5	21.4	3		
12		1.4	19.4	2.8		
13		1.5	18.1	2.6		
14		1.7	17.1	3.3		
15		2.3	16.2	3		
16		3	15.3	1.1		
17		3.4	14.3			
18		3.8	13.6			
19		4.6	13.6			
20		6.3	11.6			
21		7.6	10.2			
22	0	8.9	9			
23	0.3	10.2	8.1			
24	0.4	9.6	11			
25	0.4	11.1	11.7			
26	0.4	11.2	9.6			
27	0.4	11.4	8.2			
28	0.4	13.6	7.1			
29	0.4	15.6	6.4			
30	0.5	16	6.1			
31		14.3				
TOTAL	**3**	**174.8**	**479.3**	**61**		
AVERAGE	**0.3**	**5.6**	**16**	**3.8**		
MAX	**0.5**	**16**	**30**	**6.3**		

WY2021 Total: 1424.4 acre-feet
Maximum Instantaneous Peak: 35.8 cfs on 5 Jun 21
Blank: Recorder not operated. No water diverted
M: Missing Data

Chapman Gulch Feeder Conduit near Norrie, CO

Table D-14: Water Year 2021 daily data for Chapman Gulch Feeder Conduit near Norrie, CO (Units: Cubic Feet per Second, Source: Bureau of Reclamation)

	April	May	June	July	August	September
1		4.3	102.9	62.6		
2		8.8	107.2	45		
3		3	169.3	34.2		
4		1.2	232.9	26.7		
5		1.1	240.9	21.8		
6		2	274.5	30		
7		6.5	271.5	17.7		
8		15.5	262.6	12.6		
9		1.3	257.5	9.7		
10		1.1	245.2	4.4		
11		1.1	231	1.3		
12		1.1	205.8	1.3		
13		1.1	178.6	1.3		
14		1.1	152.5	1.4		
15		1.7	142.2	1.4		
16		16.7	132.6	0.5		
17		46.5	119.6			
18		28.3	97.9			
19		38.7	89.3			
20		90.8	65.7			
21		109.4	49.4			
22	0.5	97.7	36			
23	1.1	118.8	22.7			
24	1.1	101.4	24.7			
25	1.2	127.4	4.8			
26	1.1	128.4	1.5			
27	1.1	121.2	1.5			
28	1.1	159.3	1.4			
29	1.2	165.4	1.3			
30	2.4	157.6	22.2			
31		124.7				
TOTAL	**10.7**	**1682.9**	**3745.1**	**271.8**		
AVERAGE	**1.2**	**54.3**	**124.8**	**17**		
MAX	**2.4**	**165.4**	**274.5**	**62.6**		

WY2021 Total: 11326.7 acre-feet
Maximum Instantaneous Peak: 312.3 cfs on 5 Jun 21
Blank: Recorder not operated. No water diverted
M: Missing Data

Fryingpan River Feeder Conduit near Norrie, CO

Table D-15: Water Year 2021 daily data for Fryingpan River Feeder Conduit near Norrie, CO (Units: Cubic Feet per Second, Source: Bureau of Reclamation)

	April	May	June	July	August	September
1		3	35.3	26.6		
2		1.2	39.4	30.9		
3		1.2	63.7	17.6		
4		1	104.7	6.2		
5		1	126.3	4.4		
6		1	137.6	9.4		
7		8.9	120.9	2.7		
8		7.2	106.4	1		
9		1.8	95	1		
10		1	87.3	1		
11		1	80.7	1		
12		1	70.5	1		
13		1	65	1		
14		1	60.9	1		
15		3.8	59.6	0.4		
16		21.7	55			
17		27.3	50.6			
18		13.4	41.1			
19		16.9	36.2			
20		40.8	21.7			
21	0.4	51.8	14.9			
22	1	46.1	6.5			
23	1	61.6	1			
24	1	52.4	1			
25	1	52.8	1			
26	1	53.1	1			
27	1	54.3	1			
28	1	71.5	1			
29	1.1	81.7	1			
30	3.5	76.7	11.5			
31		50.6				
TOTAL	**11.9**	**808**	**1497.7**	**105.3**		
AVERAGE	**1.2**	**26.1**	**49.9**	**7**		
MAX	**3.5**	**81.7**	**137.6**	**30.9**		

WY2021 Total: 4806.0 acre-feet
Maximum Instantaneous Peak: 184.7 on 5 Jun 21
Blank: Recorder not operated. No water diverted
M: Missing Data

Appendix E: Fryingpan-Arkansas Project Operating Principles

87th Congress, 1st Session ---------- House Document No. 130

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	2.6
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