

DESCRIPTION OF THE COLORADO-BIG THOMPSON PROJECT

The Colorado-Big Thompson Project (C-BT) is one of the largest and most complex natural resource developments undertaken by the Bureau of Reclamation. It consists of over 100 structures integrated into a transmountain water diversion system through which multiple benefits are provided.

The C-BT spreads over approximately 250 miles in the State of Colorado. It stores, regulates, and diverts water from the Colorado River west of the Rocky Mountains, providing supplemental water for irrigation of 720,000 acres of land east of the Rocky Mountains. It also provides water for municipal use, industrial use, hydroelectric power, and water-oriented recreation.

Major features of the C-BT include dams, dikes, reservoirs, powerplants, pumping plants, pipelines, tunnels, transmission lines, substations, and other associated structures (table 1, exhibits 1 and 2).

Historically, the C-BT has diverted approximately 230,000 acre-feet of water annually (310,000 acre-feet maximum) from the Colorado River headwaters on the western slope to the South Platte River Basin on the eastern slope, for distribution to project lands and communities. The Northern Colorado Water Conservancy District (NCWCD) apportions the water used for irrigation to more than 120 ditches and 60 reservoirs. Twenty-nine communities receive municipal and industrial water from the C-BT. The Western Division of the Pick-Sloan Missouri Basin Program markets the electric power produced at the six powerplants.

The western slope collection system captures runoff from the high mountains and stores, regulates, and conveys the water to Adams Tunnel for diversion to the east slope under the Continental Divide.

To ensure irrigation and power generation under prior rights on the Colorado River, Green Mountain Reservoir was constructed on the Blue River. Spring runoff is stored in this reservoir and later released to meet the requirements of the senior water rights holders downstream along the Colorado River and to allow east slope diversion of water by the C-BT throughout the year.

Pursuant to authorities in Senate Document 80, (which authorized the C-BT), and the 1984 Green Mountain Operating Policy and the agreements in the September 1996 Stipulation and Agreement of the Orchard Mesa Check Case settlement (Case No. 91CW247, Colorado Water Div. 5), the content of the Historic Users Pool (HUP) in Green Mountain Reservoir is evaluated during the summer to determine the availability of water surplus to historic beneficiaries needs. If it is determined that surplus water is available, it may be delivered based upon need, first to the federal Grand Valley powerplant and then to other uses based on a priority system or on specific agreements.

Irrigation systems on the Colorado River, above the Blue River confluence, were improved to enable continued use of existing rights. Releases are made from Lake Granby to maintain the Colorado River as a live fishing stream.

The C-BT's principal storage facilities on the west slope are Lake Granby, Grand Lake, and Shadow Mountain Reservoir located on the Colorado River near Granby, and Willow Creek Reservoir located on Willow Creek, a tributary to the Colorado River below Lake Granby. Willow Creek Pumping Plant lifts the water 175 feet. It then flows by gravity via the Willow Creek Feeder Canal

down to Lake Granby.

Granby Pumping Plant lifts the water 99 feet from Lake Granby to Granby Pump Canal. The canal conveys the water 1.8 miles to Shadow Mountain Lake, which also intercepts North Fork flows of the Colorado River. Shadow Mountain Lake connects with Grand Lake to make a single body of water from which diversions flow to Adams Tunnel to begin the journey to the eastern slope.

Emerging from Adams Tunnel into the East Portal Reservoir, the water flows across Aspen Creek Valley in a siphon and then under Rams Horn Mountain through a tunnel. At this point, it enters a steel penstock and falls 205 feet to Marys Lake Powerplant. This powerplant is located on the west shore of Marys Lake, which provides afterbay and forebay capacity for re-regulating the flow. The water is conveyed between Marys Lake and Estes Powerplant, on the shore of Lake Estes, through Prospect Mountain Conduit and Prospect Mountain Tunnel.

Lake Estes, which serves as an afterbay for the Estes Powerplant, is formed by Olympus Dam. The storage in Lake Estes and the forebay storage in Marys Lake enable the Estes Powerplant to meet daily variations in energy demand.

Water from Lake Estes and the Big Thompson River flows are conveyed by Olympus Siphon and Tunnel, and Pole Hill Tunnel and Canal, to a penstock through which the water drops 815 feet to Pole Hill Powerplant. The flow is then routed through Pole Hill Powerplant Afterbay, Rattlesnake Tunnel, Pinewood Lake, and Bald Mountain Pressure Tunnel, and eventually dropped 1,055 feet through two penstocks to Flatiron Powerplant. This powerplant discharges into Flatiron Reservoir, which regulates the water for release to the foothills storage and distribution system. The afterbay storage in Flatiron Reservoir and the forebay storage in Pinewood Lake enable Flatiron Powerplant to meet daily power loads.

Southward, the Flatiron reversible pump/turbine lifts water from Flatiron Reservoir, a maximum of 297 feet, and delivers it through Carter Lake Reservoir Pressure Conduit and Tunnel to Carter Lake Reservoir. When the flow is reversed, the unit acts as a turbine-generator and produces electrical energy.

The Saint Vrain Supply Canal delivers water from Carter Lake Reservoir to the Little Thompson River, St. Vrain Creek, and Boulder Creek Supply Canal. The latter delivers water to Boulder Creek and Boulder Reservoir. The South Platte Supply Canal, diverting from Boulder Creek, delivers water to the South Platte River.

Northward, the Charles Hansen Feeder Canal transports water from Flatiron Reservoir to the Big Thompson River and Horsetooth Reservoir. The canal crosses the Big Thompson River in a siphon above the river and highway. Water from the Big Thompson River can be diverted into the canal by Dille Diversion Dam and utilized for power generation at Big Thompson Powerplant.

C-BT water deliveries and Big Thompson River water to be returned to the river are dropped through a chute from the feeder canal ahead of the siphon crossing, or are passed through the Big Thompson Powerplant to convert the available head to electrical energy.

Horsetooth Reservoir is located west of Fort Collins between two hogback ridges, where Horsetooth

Dam closes the gap at one end. Soldier, Dixon, and Spring Canyon Dams and Satanka Dike close the remaining gaps. An outlet at Soldier Canyon Dam supplies water to the City of Fort Collins, three rural domestic water districts, Colorado State University, and the Dixon Feeder Canal for the irrigated area cut off from its original water supply by the reservoir. The principal outlet from Horsetooth Reservoir is through Horsetooth Dam into the Charles Hansen Supply Canal. This canal delivers water to a chute discharging into the Cache la Poudre River and to a siphon crossing the river to supply the Windsor Reservoir and Canal Company. A turnout from the Supply Canal supplies the City of Greeley municipal water works. Water is delivered to the river to replace, by exchange, water diverted upstream to the North Poudre Supply Canal, which conveys it to the North Poudre Irrigation Company System.

SUMMARY OF OPERATIONS DURING WATER YEAR 2008

The winter season during water year 2008 was extremely wet in some parts of the Upper Colorado River Basin, especially over the Blue River, the Eagle River and the Fryingpan River watersheds. Significant snow accumulated over that section of the state between the months of November and March. In some places snowpack reached well above average levels. In contrast, the east slope did not experience that kind of snowpack. The Big Thompson River Basin had a fairly dry winter season with a below average snowpack. Cold temperatures kept the snowpack fairly intact until late May. Peak runoffs for most of the river basins in Colorado were observed during the middle of June. The runoff season for the Colorado River Basin saw a significant volume, but not the high peaks that were initially anticipated given the depth of the snowpack. With temperatures fairly cool well into June, the runoff came down slow, steady, and lasted for weeks. Once the summer began, weather was average, with regular monsoonal storms in the afternoon and occasional weather system that augmented flows in the Colorado River and its tributaries. July and August were hot months but by then most of the snow was gone. The hot temperatures did not have a significant effect on river flows.

The snowpack over the Blue River Basin was well above average in 2008. The runoff produced by such deep snowpack pushed Dillon Reservoir, located upstream of Green Mountain Reservoir, up to its maximum capacity. Dillon's spill in 2008 was significant in volume and length. Its releases kept Green Mountain Reservoir near its maximum storage capacity for most of the summer. Since runoff and reservoir levels were sufficiently high by June, Green Mountain was able to participate in Coordinated Reservoir Operations in 2008. All releases from Green Mountain during the summer were made using its two turbines. There were no releases from Green Mountain through the spillway gates during water year 2008 as spillway rehabilitation began during the spring.

The highest daily average inflow for Green Mountain Reservoir was observed on May 22nd, a flow of 2,113 ft³/s. Depletions out of the Blue River were low earlier in the summer, which kept Green Mountain's inflow and water surface level high for several weeks. Its highest midnight reservoir content was 152,708 acre-feet recorded on June 7th. Green Mountain stayed almost completely full from early July until late in August. Its peak release during 2008 was a 24-hour average of 1,780 ft³/s. That flow was recorded on July 8th.

Granby Reservoir did not experience a runoff season comparable to the one at Green Mountain Reservoir, since the Upper Colorado watershed above Granby did not receive as much precipitation as the Blue River watershed. Given the lower precipitation and the constant diversions through Adams Tunnel, Granby's water surface level never reached its maximum storage capacity during water year 2008. Diversions through Adams Tunnel continued throughout most of the summer with only short interruptions. Granby Reservoir reached its highest content on July 11th. Its storage content at the end of that day was 446,675 acre-feet, higher than the previous water year's peak storage content. The reservoir elevation at midnight on July 11th was 8266.65 feet. The highest daily native inflow was observed on June 30, 2006, a 24-hour average of 1,138 ft³/s.

As normal, Granby Reservoir began the water year with a water surface elevation on a downward trend. The trend continued from late fall until the spring. Transmountain diversions began early because of the failure of Flatiron Powerplant's unit #1 while the unit #2 was being repaired. There

was some concern at that point about the water levels at Carter and Horsetooth reservoirs for the following summer. In late October, 2007 a decision was made to begin diverting water immediately. Water continued flowing through Adams Tunnel without interruptions from November through July 31st, 2008. Water diverted during the winter months was sent to Horsetooth Reservoir while Carter Lake sat idle awaiting the completion of the construction of the new outlet works structure. By March 2008, pumping to Carter had resumed. Pumping continued uninterrupted until the summer. Lake Granby's lowest water content for the year was reached on April 21st. The storage content for that day at midnight was 265,188 acre-feet. C-BT water diversions continued flowing through Adams Tunnel until the fall.

The total computed inflow for Willow Creek Reservoir during water year 2008 was 79,621 acre-feet, from which 61,035 acre-feet was diverted to Granby Reservoir. Given the extremely high inflow during the peak of the runoff season combined with the limited storage capacity of the reservoir and the limited conveyance capacity of the Willow Creek Pumping Canal, the total volume of water released through the outlet works was higher than normal. A total of 18,970 acre-feet were released from the reservoir in water year 2008. From that total, 13,301 acre-feet was released as surcharge during the runoff season. An additional 946 acre-feet were released later in late September as the reservoir was been drained to allow work at the gate seals to begin. The highest 24-hour average inflow for the year was 1,318 ft³/s. That 24-hour average was recorded on May 22nd. Meanwhile, Windy Gap pumped a total of 33,520 acre-feet back to Granby Reservoir during water year 2008.

The total natural inflow to Grand Lake/Shadow Mountain Reservoir was estimated at 168,038 acre-feet for the entire water year 2008. This volume does not include water pumped from Granby Reservoir. By comparison, inflow for the previous year was estimated at 125,930 acre-feet. The highest inflow during the runoff season was recorded on June 3rd, a 24-hour average flow of 2,194 ft³/s. Given the limited capacity of Adams Tunnel and the rest of the C-BT system, most of the natural inflow during May and June was bypassed and sent to Granby Reservoir for storage. In addition to the natural inflow to Grand Lake/Shadow Mountain Reservoir in 2008, a total of 212,030 acre-feet were pumped from Granby through the Farr Pumping Plant. Pumping took place mainly between late October, 2007 and the middle of May, 2008. Pumping from Granby was resumed in July, 2008, with a 2 week interruption the first two weeks in August. During August, 2008, at the request of Grand County and other local groups, ECAO in consultation with the NCWCD conducted a water clarity test for Grand Lake. The goal of the test was to determine if by reducing any flow from Shadow Mountain into Grand Lake during the hot summer days the clarity of the water at Grand Lake could be improved. The three week test was cut short by a week when demands for water from the east slope increased unexpectedly. Transmountain diversions for the year totaled 286,518 acre-feet, 53,000 acre-feet more than the previous year. This total includes Windy Gap water.

Over the east slope the runoff season came a little later during 2008 than previous years. Colder temperatures during the spring months prevented any sudden peaks for the inflow to Lake Estes. The snowpack melted slowly with most of the runoff occurring between June and July. The highest 24-hour average inflow computed for Lake Estes during water year 2008 was 657 ft³/s on June 3rd. The total inflow for the year at Lake Estes was 88,142 acre-feet.

Winter and spring were fairly dry over the east slope in 2008. However, many reservoirs on the

east slope were left with near-capacity pools from the previous year, so water demands came late in the spring. As dry conditions worsen during the early summer the expectations for high demands increased. The NCWCD increased their quota for the season in July. Given the low runoff flows and the dry conditions of the summer the C-BT never entered priority to capture Big Thompson decreed water during 2008.

With the unavailability of Flatiron Powerplant units #1 and #2 during late October, November and early December of 2007, the Tunnel No. 1 and the Big Thompson Diversion Structure (Dille Tunnel) were used to move C-BT water to Horsetooth. Once the Flatiron unit #2 became available late in December, the diversion structure was winterized and remained unavailable until April 4th, 2008. By June the runoff season for the Big Thompson River watershed arrived. When the Big Thompson Powerplant was made available late in June the skim operations through the Dille Tunnel finally began. Large volumes of water were borrowed from the river and used to generate electric power, mainly between late June and July. As the foothill's power system was used to move C-BT water to Carter Lake and Horsetooth during most of the spring, summer and fall, the Dille's contribution to the power skim operation became even more important. Power skim diversions through Dille Tunnel in 2008 totaled 28,866 acre-feet, compared to only 4,774 acre-feet the year before.

The Big Thompson River experienced a dry runoff season during water year 2008. Flows were at their highest during late June but moderate thereafter. With the dry conditions of the spring and summer, water demands were relatively high after June. Deliveries of C-BT water through the Charles Hansen Feeder Canal Wasteway, the Charles Hansen Supply Canal and the Saint Vrain Canal began in early May. Once deliveries of C-BT water began, they continued uninterrupted until the end of October. Demands for C-BT water from the east slope peaked in the summer months.

C-BT water began to flow to Horsetooth late in October, 2007. The construction of the new outlet works at Carter Lake prevented any pumping during the winter, therefore all the C-BT water was sent north to Horsetooth between October and late February. Horsetooth Reservoir's elevation reached 5415.10 feet on March 20th, its highest water surface level of the water year. The storage content recorded at midnight was 127,961 acre-feet. As most of the C-BT water flow was switched to Carter Lake in early March, Horsetooth's elevation slowly began to drop from that point on. Additional C-BT water was sent to Horsetooth later in the spring and summer months which benefited Larimer County's recreational activities during their busy season. But water deliveries were high throughout the summer and Horsetooth's level eventually began to drop at a faster rate. Despite the high demands and all the constrictions in the conveyance system due to facility outages and other issues, sufficient water was stored at Horsetooth early in the year to meet all the demands while keeping all the boat ramps in the water during critical dates in the fall.

Carter Lake began the water year with a storage content of only 20,100 acre-feet. The reservoir's level was dropped down to almost the dead pool to allow the construction of the new outlet works structure to begin. As requested, on October 1st, 2007, the reservoir level was dropped below elevation 5657.00 feet. Between October and late February the reservoir level was kept below that elevation to allow construction to continue. Brief periods of pumping took place during those months to keep the storage content between 15,000 and 20,100 acre-feet. The water in that pool was

sufficient to meet all the municipal demands. Once the construction work ended in late February, pumping to Carter Lake began and continued uninterrupted until July. Carter Lake Reservoir finally reached its highest level for the year on July 11th. The reservoir elevation that night was 5727.81 feet, which holds a storage content of 78,556 acre-feet. Carter Lake ended the year with a water surface elevation of 5701.40 feet. Flatiron Powerplant unit # 3 did not generate any power during water year 2008. The highest daily average pumping rate was estimated at 469 ft³/s on November 11th. The highest pumping rates were observed when Carter Lake's water surface elevation was around or below 5650.00 feet. The total pumping volume to Carter Lake for the water year 2008 was 138,462 acre-feet.

The initial quota for C-BT diversions declared by the NCWCD in November, 2007 was 60% or 186,000 acre-feet. The quota was first increased in April, 2008 to 70% or 217,000 acre-feet. Then as the summer arrived, with the dry and hot summer months ahead, NCWCD increased the quota one more time in July. That third time the quota was increased to 80 % or 248,000 acre-feet.

Potential carryover of C-BT water from water year 2008 to water year 2009 was 54,225 acre-feet. Alloties are expected to pay for 50,000 to 51,000 acre-feet out of the total volume available. Final deliveries of carryover water from water year 2007 totaled 50,579 acre-feet during water year 2008.

Water diversions through Adams Tunnel totaled 286,518 acre-feet for the water year. The water deliveries through the C-BT between October 1st, 2007 and September 30th, 2008 totaled 215,835 acre-feet. That includes water delivered from Horsetooth Reservoir and Carter Lake Reservoir, Olympus Dam, the Trifurcation at the Charles Hansen Feeder Canal, and from some of the water conveyance facilities. The total C-BT deliveries do not include Big Thompson River decreed water diverted through the C-BT system for the cities of Loveland and Berthoud, or any Windy Gap project water deliveries.

Total C-BT generation for the water year 2008 was above average with 630.5 giga-watt-hours produced (GWh), which is 105 % of average. This includes power generated at Green Mountain, Marys, Estes, Pole Hill, Flatiron, and the Big Thompson powerplants.

WATER YEAR 2008 OPERATIONS

Green Mountain Reservoir

Green Mountain Reservoir and Powerplant, completed in 1943, are located south of the town of Kremmling, a few miles upstream of the confluence of the Blue River and the Colorado River in North Central Colorado. The reservoir, with a total capacity of 153,639 acre-feet, provides storage water releases for power production, replacement of out-of-priority depletions, and contract water deliveries. The powerplant has two units with a total installed capacity of 26 megawatts. The spillway, located on the left abutment, is controlled by three 25 x 22 foot radial gates and is capable of discharging 25,000 ft³/s.

Start of fill for 2008 was declared as April 24, with the reservoir holding 61,581 acre-feet in storage, somewhat below its historic 65,000 acre-foot start of fill target. Pursuant to the State Engineers Office's interim policy, "Administration of Green Mountain Reservoir for 2008" of May 29, 2008 (Attachment B), Green Mountain Reservoir achieved a "paper fill" on May 31, 2008. On that date, Denver Water and Colorado Springs Utilities (Cities) owed Green Mountain Reservoir 9,165 acre-feet of water for their out-of-priority diversions. A provision of the interim policy allowed Green Mountain Reservoir to continue storing its inflow under a 1955 water right after "paper filling" to reduce the amount of water owed by the Cities. Under this provision, Green Mountain Reservoir was able to store sufficient water by June 5 to entirely eliminate the amount owed by the Cities.

By taking advantage of its junior and senior refill rights, Green Mountain Reservoir was able to continue storing some of its inflow after June 5, attaining a maximum physical content for the year of 152,708 acre-feet on July 7. With the reservoir achieving a "paper fill" this year, the 52,000 acre-foot Colorado-Big Thompson Project replacement pool, the 5,000 acre-foot Silt Project reservation, the 66,000 acre-foot HUP allocation, and the 20,000 acre-foot set aside for contracts were all fully available this year.

The maximum drawdown rate limitations initially put in place in 2003 due to landslide concerns were continued in 2008. These drawdown rate limitations were to be initiated when the reservoir's water surface elevation dropped below 7880.0 feet. With the reservoir achieving both a "paper fill" and a physical fill in 2008, the water surface elevation remained above 7900.0 feet during the irrigation season, and therefore, the drawdown rate limitations were never triggered.

While the interim policy requires that upstream depletions by Green Mountain beneficiaries junior to Green Mountain be charged against the "paper fill" of Green Mountain Reservoir, those depletions were not charged against this year's HUP allocation. Therefore, the entire 66,000 acre-foot HUP allocation remained available when the reservoir achieved its fill. Due to the lack of a downstream call at either Shoshone or Cameo until the Shoshone Powerplant was returned to service in October, releases to augment the water rights of HUP beneficiaries downstream of Green Mountain didn't commence until October 6, with a total of only 216 acre-feet being released for that purpose during the year.

HUP surplus releases and the discretionary releases under the informal Shoshone outage agreement both commenced on August 27. During a majority of the period in which the discretionary releases were being made, the HUP surplus releases were generally held to fixed rates while the discretionary releases were allowed to vary in order to maintain Green Mountain Reservoir's river account at zero. Between August 27 and October 29, HUP surplus releases generally varied between about 200 cfs and 700 cfs, depending upon the native flow of the basin and the decisions of the Managing Entities in their attempts to support the endangered fish flow targets in the 15-Mile Reach. The HUP surplus releases were terminated for the remainder of the year on October 29 at the end of the irrigation season. HUP surplus releases totaled 61,433 acre-feet in 2008, with the entire release volume being attributable to the Municipal/Recreation Contract. Together, the releases for HUP beneficiaries above and below Green Mountain Reservoir and the HUP surplus releases totaled 61,649 acre-feet in 2008. This resulted in an HUP balance of 4,351 acre-feet on October 31. The daily distribution of releases from the HUP is provided in Table 4 and the HUP's content relative to the dry-year upper and lower bands is shown in Figure 1. The discretionary releases totaled 11,591 acre-feet and were made between August 27 and October 20, at daily average rates varying from 23 cfs to 221 cfs.

Operations at Blue River, Dillon, and Green Mountain reservoirs during water year 2008 are summarized in Table 2. Gross generation at the Green Mountain Powerplant totaled 63,900,000 kilowatt-hours during water year 2008. That total is 123% of the 30 year average.

Willow Creek Reservoir

Completed in 1953, Willow Creek Reservoir has a total storage capacity of 10,600 acre-feet. The uncontrolled spillway, located at the left abutment, has a maximum flow capacity of 3,200 ft³/s. The Willow Creek Feeder Canal also begins at the left abutment and it has a capacity of 400 ft³/s. The canal is used to transfer water to Granby Reservoir. Excess inflow into the reservoir is moved by way of the Willow Creek Feeder Canal and pumped to Lake Granby for storage.

There was some pumping during October and November of 2007 to evacuate some of that water and position Willow Creek Reservoir's elevation for winter operations. The Willow Creek Canal was winterized after that.

The Willow Creek watershed received significant snow during the winter and spring months of water year 2008. By March, 2008 the snow-water content over the watershed was 128 % of average. The high snow-water content resulted in an April-July most-probable runoff forecast of 68,000 acre-feet. Not surprisingly, that runoff forecast materialized. Inflow reported for Willow Creek Reservoir was 68,000 acre-feet for the same period. The high snow-water content and high probability of substantial inflow also prompted early reservoir releases. Between May and July of 2008 a total of 14,500 acre-feet were released through the outlet works. The releases combined with the water pumped to Lake Granby kept the reservoir elevation below spillway levels. Total pumpage for the water year totaled nearly 61,000 acre-feet. Total inflow for the water year was 79,600 acre-feet, 133% of average. The highest reservoir release recorded for the water year was a daily average flow of 858 ft³/s on May 23rd. The same day, average inflow was 1,318 ft³/s.

Granby Reservoir

Completed in 1950, Granby Reservoir on the upper Colorado River collects and stores most of the water supply for the C-BT. The reservoir stores the flow of the Colorado River as well as water pumped from Willow Creek Reservoir. The reservoir has a total storage capacity of 539,800 acre-feet. The spillway is located on the left abutment. Flows over the spillway are controlled by two radial gates, with a total release capacity of 11,500 ft³/s. The Granby Pumping Plant has three units with a combined installed capacity of 600 ft³/s.

Granby Reservoir carryover content into water year 2008 was 376,356 acre-feet, or 86 % of the 30-year average. The water year began with above average precipitation during the winter and early spring months. A series of weather disturbances impacted the west slope between the months of December and January. By the end of January the snow-pack reports were promising. Snowstorms continued to hit the region in the early spring, however most of the precipitation was west and south of the Upper Colorado watershed. Unlike the Willow Creek watershed, the Upper Colorado did not experience significant precipitation during the spring months and the snowpack began to disappear early in the season. By April the total precipitation for the water year at the Granby Reservoir was 8.32 inches or 112% of average. The snow-water content reported on April 1st was 14.0 inches or 116% of average.

Temperatures during the spring months of 2008 were cooler than normal over most of Colorado resulting in a relatively late runoff season. As warmer weather settled over the region by the middle of May, runoff began to increase. The most-probable-runoff forecast for April 1st predicted 218,000 acre-feet for Granby watershed between April and July. The total native inflow to Granby, Shadow Mountain and Grand Lake combined for those months was 216,968 acre-feet.

Total precipitation for the water year in the Granby Reservoir watershed was 17.48 inches or 101% of average. The 30-year average precipitation for the watershed is 17.35 inches. The total cumulative inflow for the entire water year was 274,400 acre-feet, higher than the 30-year average of 252,930 acre-feet. The highest daily average native inflow was 1,138 ft³/s recorded on July 1st.

The summer months were relatively dry and warm over Northern Colorado, which increased demands for C-BT water over the east slope. Granby reached its highest content of 437,455 acre-feet on July 10th. The reservoir level remained relatively stable during July and August. High demands for C-BT water from the east slope began by the middle of July. However, even with the high demands for C-BT water Granby's elevation remained relatively stable during the period. One of the reasons for the stable water surface levels during the late summer was an alternative operational test which took place in August. This test was conducted to determine to which extent the project operations affect the water clarity at Grand Lake. The operation prevented any pumping from the Farr Plant for over 2 weeks in August. Without any pumping from the Farr Plant the reservoir level remained fairly flat for a number of weeks.

Granby Reservoir never reached its maximum capacity during water year 2008. The reservoir finished the water year with 408,300 acre-feet in storage, which represents 93% of the 30-year average. That volume was also 32,000 acre-feet higher than the volume recorded on September

30th of 2007.

Grand Lake/Shadow Mountain Reservoir

During August of 2008 the regular operations of the C-BT were modified in order to verify the impact of regular project operations on water clarity at Grand Lake. The plan was to suspend all pumping from Granby Reservoir to Shadow Mountain Reservoir for a period of three weeks while maintaining a positive flow from Grand Lake to Shadow Mountain. The original plan was to begin the test on August 1st and continue it through August 21st. However, by the middle of the second week of testing the demands for C-BT water from the east slope began to put a lot of pressure on the system. At that point it was decided to reduce the test period to only two weeks. Pumping at the Farr Plant resumed on August 16th.

Adams Tunnel

Diversions through the Adams Tunnel during water year 2008 were 53,000 acre-feet higher than the previous year. The total volume diverted through the tunnel was 286,900 acre-feet. That is 126% of the 30-year average. Water diversions began in late October 2007 and continued uninterrupted until August 2nd, 2008. Flows through the tunnel were dropped significantly at that point to accommodate the water clarity test for Grand Lake. Diversions resumed on August 16th, 2008.

Lake Estes

Completed in 1949, Lake Estes on the Big Thompson River provides regulating capacity for power generation purposes. The reservoir has a total capacity of 3,100 acre-feet. It captures the discharge of Estes Powerplant and inflow coming from the Big Thompson River, regulates river flow below the dam, and releases of water to the Foothills Power System via Olympus Tunnel (550 ft³/s capacity). The Estes Powerplant has three hydroelectric units with a total installed capacity of 45 megawatts. The combined flow capacity for the three units is 1,300 ft³/s. The spillway, located on the right abutment, has five radial gates with a total discharge capacity of 21,200 ft³/s. The center gate has been automated, and is operated remotely from the Loveland Control Center (LCC). During the winter months, C-BT water is diverted through Adams and Olympus tunnels and routed through the Foothills Power System on its journey to terminal storage at Carter and Horsetooth reservoirs. This complete operation is controlled remotely from the LCC.

The winter season of water year 2008 was relatively dry over the Big Thompson River watershed. The March 1st snow-water content was 3.12 inches or 69% of average. The situation did not improve much during the spring months. By June the precipitation at Estes for the water year was only 7.93 inches of 73 % of average. However, temperatures remained on the cool side until the middle of June, which kept demands for C-BT water relatively low. Runoff came late in June as temperatures finally began to rise. The April most-probable runoff forecast predicted an inflow for Lake Estes of 97,000 acre-feet for the period April-July. However, only 62,000 acre-feet of inflow were actually observed for that period.

The C-BT did not enter priority to capture east slope water from the Big Thompson River during water year 2008. The demands for C-BT water were high during the summer months, fueled by warm weather, dry conditions and an 80% quota for C-BT alloties announced in July. Monsoonal storms in July and August helped to alleviate the dry conditions over the region, but the farming community and east slope municipalities continued their high demands for C-BT water. That kept the Adams Tunnel transmountain diversions flowing high until September. Power generation at Marys and Estes powerplants benefited from the continuous flows from the west slope.

The highest daily average inflow for Lake Estes this past water year was 657 ft³/sec, computed on June 4th. The total cumulative inflow for the water year was 88,300 acre-feet, representing 94% of the 30-year average. Adams Tunnel continued to run nearly full most of the year, due to the need for C-BT water over the east slope in 2008. That limited the total volume of skimmed through the Olympus Tunnel for the water year to 1,701 acre-feet, only 5% of average.

Foothill's System

The water year 2008 began with Carter Lake at its lowest water surface level in decades. Construction of the new outlet works structure began in the fall of 2007, therefore its water surface level had to be lowered prior to the October 1st. Work began in October and continued through the winter months. The water surface level limitation was not lifted until late February, 2008. During the construction period water had to be pumped from Flatiron on a regular basis in order to keep sufficient water in storage to satisfy water demands. Carter's reservoir level was kept below 5657.00 feet during construction.

A crisis emerged during late October when Flatiron's unit #1 failed and became unavailable. The situation was aggravated by the unavailability of unit #2 which was down for repairs at the moment. The unavailability of both units at Flatiron Powerplant and concerns about the possibility of not having them operational for a significant length of time forced some unusual decisions.

Given the limitations in the system, the decision was made to begin diverting water from the west slope much earlier than usual. But with both units at Flatiron Powerplant unavailable the diverted water could not be brought down through the foothill's power system.

Diversions began in late October, 2007. Diverted water was sent down the Big Thompson River from Olympus Dam. The operation began well before any icing along the river had started. By keeping the flow relatively high and constant the river channel was kept open from any ice during the operation. Water was captured at the Dille diversion near the Canyon Mouth and sent north to Horsetooth Reservoir.

However, despite the high flows by late November ice began to form and accumulate at the Dille structure. By December, significant ice had formed on the trash racks and in the upstream pool. The situation continued until Flatiron's unit #2 became available in the middle of December. Once the unit #2 was made available the Dille diversion structure was finally winterized and water began to flow once again through the foothill's power system. The initial flowrate through unit #2 was 360 ft³/sec producing 25 megawatt-hours, the maximum capacity allowed at the

moment. The availability of Flatiron's unit #2 allowed pumping to Carter Lake to resume for a few days in December and January which kept reservoir elevation closed to 5657.0 feet during that critical construction period. Water also continued to flow north to Horsetooth throughout the winter months.

In late February the construction work at the new Carter Lake outlet works was nearly completed and pumping began. The pumping operation continued uninterrupted until late July, bringing the reservoir elevation back to normal levels by late April and allowing recreation to begin on time.

The movement of C-BT water through the system during the spring and summer months prevented any skim operations through Olympus Tunnel. Decreed water for the cities of Loveland and Berthoud was occasionally diverted through the Olympus Tunnel and the foothill's power system during the spring and summer months, but most of the time the tunnel capacity was occupied by C-BT water. The only possible chance to move skim water through the foothill's power system came in August during the Grand Lake water clarity test. But by then the runoff and inflow to Lake Estes was not enough to keep the powerplants running.

Water diverted through Dille Tunnel serves four purposes; 1) it can supply the City of Loveland and other users with their Big Thompson River decreed water; 2) it can be used as skim water and passed through the Big Thompson Powerplant to generate electricity; 3) it is used in an exchange to supply the municipalities such as Berthoud and Loveland with their Big Thompson River decreed water; 4) when the C-BT is declared by the State of Colorado to be in priority to catch Big Thompson River water, it can divert runoff and store at Horsetooth Reservoir. This past water year the Dille diversion was able to capture part of the high flows observed down the Big Thompson River and skim it. However, the operation began late in the season because of the work taking place at the Big Thompson Powerplant and its subsequent testing period. Skim operations through Dille begin on June 20th. The Dille Tunnel operations diverted a total of 28,867 acre-feet during the entire water year. Most of that water was used for power generation at the Big Thompson Powerplant. The total power skim was 120% of the 30-year average of 24,100 acre-feet. Some decreed water from the cities of Berthoud and Loveland was also diverted through the Dille Tunnel.

The Big Thompson River native flow skimmed through Olympus and Dille tunnels reduces the flows measured at the mouth of the Big Thompson Canyon, as the water is returned to the river below the canyon mouth stream gage. The Big Thompson River stream gage at the canyon mouth measured a total of 63,328 acre-feet of water (official figure published by the State of Colorado, Division of Water Resources) during the water year which represents approximately 48% of the 30-year average. The flow at the mouth of the canyon includes water releases from Olympus Dam, native flow from the North Fork of the Big Thompson River and other local runoff. The bulk of the flow at the Canyon Mouth gage normally occurs between May and early August.

A small portion of the power generated in 2008 by the powerplants in the foothill's power system came from the skim operations. Most of the power generated by the C-BT during the entire year was produced thanks to the high demands for C-BT water over the east slope. C-BT water diversions from the west slope kept all the powerplant generating almost the entire year. The six powerplants in the C-BT produced a total of 630.5 GWh of power during the water year

2008, which represents over 105% of the 30-year average. Flatiron, Pole Hill and the Big Thompson powerplants produced a total of 394.3 GWh, 96% of the 30-year average.

Carter Lake Reservoir

Completed in 1952 with three dams, Carter Lake Reservoir has a total storage capacity of 112,200 acre-feet. Inflow of C-BT water to Carter Lake Reservoir is from the Flatiron Pumping Plant with a capacity of up to 450 ft³/s.

The Carter Lake Reservoir storage content on September 30th, 2007 was 20,226 acre-feet. In order to accommodate the construction of the new outlet works structure the reservoir's water content target for October 1st was set at 20,000 acre-feet (elevation 5657.0 feet). The target was met on time and the reservoir level was kept below that upper limit for the following five months. The reservoir pool available was used to meet demands during the construction period. Pumping kept the storage content always above 15,000. The reservoir content never reached more than 20,000 acre-feet during construction.

By February 26, the construction of the new outlet works structure had been completed. Pumping to Carter Lake resumed that day. Once pumping began the reservoir level bounced back to reached a maximum content of 78,556 acre-feet on July 12. The 30-year average maximum content is 79,500 acre-feet.

The pumping operation with Flatiron unit #3 required a total of 40,100,000 kilowatt-hours of energy, 150% of the 30-year average. Water deliveries to the Saint Vrain Supply Canal during water year 2008 totaled 83,900 acre-feet. The 30-year annual average water delivery total is 81,500 acre-feet. The month of July had the highest volume of water deliveries out of Carter Lake with a total of 14,078 acre-feet. Carter Lake Reservoir ended the water year at elevation 5707.40 feet and with a storage content of 53,434 acre-feet. All the construction, recreation and water delivery targets for Carter Lake Reservoir were met during water year 2008.

Horsetooth Reservoir

Completed in 1949, with four dams, Horsetooth Reservoir has a total constructed capacity of 156,700 acre-feet. Inflow to Horsetooth is comes mainly from C-BT water delivered via the Charles Hansen Feeder Canal.

Operations at Horsetooth Reservoir during water year 2008 were relatively normal. Horsetooth began the year at elevation 5386.14 feet, with 80,626 acre-feet of water in storage. As work on the new Carter Lake outlet works structure continued throughout the winter months, most of the C-BT water diverted from the Colorado River was being stored at Horsetooth. By late February, 2008 the reservoir elevation target had been achieved and flow of C-BT water was transferred to Carter Lake. Horsetooth reached it highest storage content for the water year 2008 on March 21st, a total of 127,961 acre-feet. The water surface level that day reached an elevation of 5415.06 feet.

As most of the flow of C-BT water was transferred to Carter Lake, and as demands for C-BT water began to increase during the spring months, Horsetooth's reservoir level began to slowly

drop. By the end of June its level had fallen to 5405.37 feet, 10 feet below its highest level for the year. Despite the reservoir level drop in the spring, Horsetooth found itself in good position to meet all the targets of the fall season ahead. Water deliveries for the year were 99% of average. A total of 89,400 acre-feet of water were delivered out of Horsetooth Reservoir during water year 2008. All the recreational and water delivery targets for Horsetooth Reservoir were met during water year 2008.

FLOOD BENEFITS

Precipitation over the Colorado River Basin was significantly high during the winter and spring months of water year 2008. The deep snowpack in some locations triggered early preparations for potential flooding conditions at many locations around the west slope. By early March the snowpack reports for the upper Colorado River Basin had reached levels over 130% of the 30-year average. The April through July runoff forecast for Green Mountain reservoir predicted a most-probable total of 355,000 acre-feet, 129% of average. Willow Creek and Granby reservoirs also had high April through July runoff forecasts. Willow Creek had a forecast of 67,000 acre-feet, 20,000 acre-feet higher than the average, and Granby had a forecast of 218,000 acre-feet, 23,000 higher than the average. Luckily, temperatures rose slowly during the spring months creating a long runoff season with peak flows that were never threatening. The reservoir levels in the C-BT system were well positioned by the middle of the spring, with sufficient storage capacity to capture a large portion of the peak runoff flows and in the process preventing any flooding from occurring downstream.

By the contrary, the east slope experienced a relatively dry winter and spring period, with snowpack numbers near or below average. As it was the case over the west slope, the east slope experienced a mild spring season. Runoff came down slowly and fairly late in the season. By the end of July most of the runoff was over. The C-BT reservoirs over the east slope did not face any significant flooding conditions during water year 2008.

Based on the data collected from the Colorado River Basin, and according to figures provided by the U.S. Army Corps of Engineers, C-BT reservoirs over the west slope prevented flood damages during water year 2008. According to the Corps of Engineers report, Green Mountain Reservoir prevented a total \$1,000 in possible flood damages during water year 2008, while Willow Creek, Granby and Shadow Mountain/Grand Lake prevented a total of \$8,000 in possible flood damages.

Since construction, the C-BT has prevented flood damages totaling \$402,300.

C-BT PLANNING AND CONTROL

The C-BT is operated to provide supplemental municipal and industrial water supply, as well as irrigation water supply and hydroelectric power production. Some of the benefits from the operation of the project are reduction of flood damages, recreation, and fish-and-wildlife preservation, among others. The C-BT is operated for the purposes for which it was authorized and constructed.

The integrated operation of the C-BT is planned and coordinated by the Bureau of Reclamation, Water Scheduling and Control Group, Eastern Colorado Area Office in Loveland, Colorado. Staff at this office collects and analyzes information daily and makes the decisions necessary for successful operation of the C-BT. This continuous water management function involves coordination between the Division of Water Resources of the State of Colorado, the NCWCD, Upper Colorado and Great Plains Regions of Reclamation, the Western Area Power Administration (from the Department of Energy), and many other local, state, and Federal agencies.

Experience has proven that proper utilization of the available water resource in a multi-purpose project such as the C-BT can be achieved only through careful budgeting and management of the anticipated water supply. One end product of this budgeting and management process is an Annual Operating Plan (AOP).

The C-BT is operated on a water year basis (October 1 through September 30). The AOP is prepared in January of each year, following the plan's review and necessary public meetings. AOPs are prepared for reasonable-maximum and reasonable-minimum conditions of water supply and requirements as well as for the most-probable runoff conditions. The C-BT is operated to optimize the most-probable water supply without jeopardizing operational position should either the reasonable-maximum or the reasonable-minimum water supply conditions occur. The plan is reviewed and revised as necessary during the year as new information or changing conditions occur. Flexibility is a keynote and a necessity of the plan. Computer programs and models are used by Reclamation to develop the AOP and water supply forecasts.

MINIMUM REQUIRED RESERVOIR RELEASES

On January 19, 1961, the Secretary of the Interior established specific guidelines for water releases out of Lake Granby, which satisfy fish requirements. A release from Lake Granby of 20 ft³/s is required from October through April of each year. During the remaining months of the year, the control point is almost 3 miles downstream from the dam at the YMCA gauging station.

Except in years of subnormal inflow, a flow of 75 ft³/s during the May-July period, 40 ft³/s during August, and 20 ft³/s during September is required at this location, downstream of Lake Granby. The flow during the May-September period can be reduced if forecasts indicate that the inflow during the water year to Shadow Mountain Lake, Grand Lake and Lake Granby (less the decreed rights in the reach of the Colorado River between Granby Dam and the mouth of the Fraser River) and the water capable of being pumped from Willow Creek Reservoir during that year, are 230,000 acre-feet or less.

According to the ‘Principles to Govern the Release of Water at Granby Dam to Provide Fishery Flows immediately Downstream in the Colorado River’ signed by the Secretary of the Interior and Commissioner of the Bureau of Reclamation in 1961, the following reduction of fishery flows below Lake Granby will apply on the basis of a forecast to be made by the Bureau of Reclamation during the last week in April, using information from all available sources.

<u>Forecast Inflow in Acre-Feet</u>	<u>Percentage Reduction in Minimum Release</u>
220,000 - 230,000	15
210,000 - 220,000	20
195,000 - 210,000	25
Less than 195,000	30

Adjustments will be made in the reductions, when appropriate, based on revised forecasts and consideration of actual flows during May, June, and July. A copy of the document is included in the Standard Operating Procedures for Granby Dams and Reservoir, Appendix A, Exhibit 4.

Also according to the same guidelines, Willow Creek below Willow Creek Reservoir is not considered a fishery resource since an irrigation ditch a short distance below the dam generally uses the entire flow in the late summer months. In the Secretarial determination, no releases were provided to maintain Willow Creek as a live stream. However, a release of 7 ft³/s or inflow (whichever is the lesser) from Willow Creek Reservoir is required between October 1st and April 30 to augment fishery flows in the Colorado River.

In accordance with the Standard Operating Procedures for Shadow Mountain Reservoir, Chapter 4, Section D, minimum releases from Shadow Mountain Lake of 35 ft³/s during September and October, 45 ft³/s during November and December, 20 ft³/s from January through May, 50 ft³/s in June and July, and 40 ft³/s in August or inflow (whichever is the lesser) must be maintained in order to protect fish and wildlife in the Colorado River above Lake Granby.

The minimum release required out of Green Mountain Reservoir is controlled by senior adjudicated water rights downstream from the reservoir. Inflow to Green Mountain Reservoir is released, as required, to meet these downstream rights. Releases at all times are adequate for fish preservation.

The State of Colorado's Division of Wildlife, and the United States Fish and Wildlife Service have recommended the following water release schedule for Lake Estes. This schedule meets the flow requirements of native fish along the Big Thompson River.

Minimum Releases

<u>(ft³/s)</u>	<u>Period</u>
25	November 1 - April 15
50	April 16 - April 30
100	May 1 - May 15
125	May 16 - August 15
100	August 16 - August 31
75	September 1 - September 15
50	September 16 - October 31

Diversion of flows from the Big Thompson River at Lake Estes for power production is generally restricted to the May 15-September 15 period, since runoff during the remaining period usually is much less than the recommended minimum flows. Releases in excess of inflows are not required.

GREEN MOUNTAIN RESERVOIR OPERATIONS

Paragraph 6 of the October 5, 1955, Stipulation, in the decree for the Consolidated Cases Nos. 2782, 5016, and 5017 in the United States District Court for the District of Colorado (Blue River Decree), calls for periodic plans for the operation of Green Mountain Reservoir to be developed. The plans addressing this requirement are included as a part of this report.

Provisions guiding the operations of Green Mountain Reservoir are contained in the following documents:

Manner of Operation of Project Facilities and Auxiliary Features, Senate Document No. 80, 75th Congress, 1st Session

Consolidated Cases Nos. 2782, 5016, and 5017
October 12, 1955, Stipulation and Decree
April 16, 1964, Stipulation and Decree

Operating Policy for Green Mountain Reservoir, Colorado-Big Thompson Project, published in the Federal Register, Vol. 48, No. 247, December 22, 1983,

September 4, 1996, Stipulation and Agreement in Colorado Water Div. 5, Case No. 91CW247 (Orchard Mesa Check Case), and attached HUP Operating Criteria.

Operations will be consistent with the applicable provisions in these documents.

The general operations guided by these provisions are given below:

1. Winter operation (November-March)
 - a. Bypass inflow to supply downstream vested senior rights.
 - b. Make releases to replace water diverted or stored out of priority by the C-BT collection system, as required.
 - c. Make releases for west slope irrigation and domestic uses per Green Mountain Operating Policy and the HUP Operating Criteria.
 - d. Make releases for water service contracts pursuant to the Operating Policy.
 - e. Maximize power generation, while maintaining:
 - (1) Adequate storage to meet the anticipated needs under the guiding documents.
 - (2) A minimum power head consistent with the integrated system power operations.

2. Operation during snowmelt period (April-July)

- a. Bypass inflow to supply downstream vested senior rights.
- b. Make releases to replace water diverted or stored out of priority by the C-BT collection system, as required.
- c. Make releases for west slope irrigation and domestic uses per Green Mountain Operating Policy and the HUP Operating Criteria.
- d. Make releases for water service contracts pursuant to the Operating Policy.
- e. Participate in the Coordinated Reservoir Operations effort to enhance peak flows for the Colorado River Endangered Fishes. Reduce releases from traditional levels before and after the peak flow period on the Colorado River in the Grand Junction area. During peak flow period, release the lesser of inflows or turbine capacity for approximately a ten-day period.
- f. Fill without spilling to maximize power generation by utilizing the storage and power rights concurrently.
- g. On or before June 30, each year, meet with Managing Entities established under the settlement of the Orchard Mesa Check Case to assess availability of surplus water in the Historic Users Pool (HUP).
 - Confer with Managing Entities on a regular basis through the irrigation season to assess availability of surplus water in the Historic Users Pool (HUP).
 - If a surplus condition is declared, make releases up to the amount of surplus, under agreements, to:
 - the Grand Valley Powerplant up to its need or capacity; then to
 - the Grand Valley under the Municipal Recreation contract in excess of that needed by the powerplant
- j. Maximize power operation consistent with 1.e.
- k. Make releases as outlined in the above referenced documents.¹

3. Operation after snowmelt period (August-October)

- a. Bypass inflow to supply downstream vested senior rights.

¹ By the use of these provisions for current operating purposes, the United States does not intend to imply any definition of rights and obligations. The order in which these criteria are listed does

- b. Make releases to replace water diverted or stored out of priority by the C-BT collection system, as required.
- c. Make releases for west slope irrigation and domestic uses per Green Mountain Operating Policy and the HUP Operating Criteria.
- d. Make releases for water service contracts pursuant to the Operating Policy.
- g. Confer with Managing Entities on a regular basis through the irrigation season to assess availability of surplus water in the Historic Users Pool (HUP).
 - If a surplus condition is declared, make releases up to the amount of surplus, under agreements, to:
 - the Grand Valley Powerplant up to its need or capacity; then to
 - the Grand Valley under the Municipal Recreation contract in excess of that needed by the powerplant
- j. Maximize power operation consistent with 1.e.
- k. Make releases as outlined in the above referenced documents.²

¹ By the use of these criteria for current operating purposes, the United States does not intend to imply any definition of rights and obligations. The order in which these criteria are listed does not reflect any intended priority.

² By the use of these provisions for current operating purposes, the United States does not intend to imply any definition of rights and obligations. The order in which these criteria are listed does not reflect any intended priority.

GREEN MOUNTAIN HISTORIC USERS POOL AND THE ORCHARD MESA CHECK CASE SETTLEMENT

Background and Authority

The Orchard Mesa Check (Check) is a structure below the common afterbay of the Orchard Mesa Irrigation District (OMID) Pumping Plant and the federal Grand Valley Power Plant in the Grand Valley of Colorado. The operation of the Check provides the ability to raise the water level in the common afterbay to a level, which causes water to flow through the bypass channel and return to the Colorado River upstream of the Grand Valley Irrigation Company (GVIC) diversion dam.

Operation of the Check was determined to constitute an 'exchange' of water whereby water destined for the senior GVIC irrigation water rights is borrowed for pumping and hydroelectric power generation purposes and returned to GVIC for irrigation use. Operation of the Check influences the supply of water available to Grand Valley irrigation systems; to the Grand Valley Power Plant for power production; Green Mountain Reservoir releases; and the flow in the 15-Mile Reach of the Colorado River. The 15-Mile Reach is that section of the Colorado River from the GVIC diversion dam to the confluence of the Gunnison River and has been designated critical habitat by the Upper Colorado River Endangered Fish Recovery Program.

The Check has been operated on an informal basis without a decreed right since approximately 1926 to manage flows in the Colorado River for the benefit of the United States, Grand Valley Water Users Association (GVWUA), and OMID (Co-applicants). In the late 1980's, a hydropower development was proposed in a reach of the Colorado River between the Grand Valley Diversion Dam, the point where the exchange water is diverted, and the GVIC diversion dam where the exchange water is returned. The Co-applicants were concerned that a water right awarded for this development would have the ability to interfere with the exchange of water. In response to this potential threat to the continued operation of the exchange, the Co-applicants filed an application in State Water Court on December 30, 1991, for approval of an exchange of water. This case (Water Division 5, Case No. 91CW 247) was informally known as the Orchard Mesa Check Case. Resolution of the case resulted in a negotiated Stipulation and Agreement entered into the District Court, Water Division No. 5, State of Colorado, on September 4, 1996.

Overview of the Stipulated Settlement

The settlement contains two major components: the Stipulation and Agreement and the Green Mountain Reservoir Historic Users Pool Operating Criteria (Operating Criteria). The Operating Criteria further defines operation of the Green Mountain Reservoir Historic Users Pool (HUP) consistent with Senate Document 80 and the 1984 Operating Policy. The parts of the Stipulation and Agreement pertinent to the operation of the HUP are summarized below:

As part of the Stipulation and Agreement the Co-applicants and GVIC agree not to exercise their irrigation rights against any upstream HUP beneficiary provided that the Check is physically operable; there is at least 66,000 acre-feet of water in storage in the Green Mountain Reservoir HUP,

or approved substitute storage reservoir, when Green Mountain Reservoir storage rights cease to be in priority; and the water rights for the Shoshone PowerPlant continue to be exercised in a manner consistent with their historical operation. (Section 3.b. of the Stipulation and Agreement)

The Stipulation and Agreement also provides that Reclamation will declare surplus water which is in excess of the needs of HUP beneficiaries for a given water year. Water declared surplus might be delivered through agreements to beneficial uses in Western Colorado. This is to be done in accordance with the provisions of the HUP Operating Criteria, which are summarized below:

Management of the HUP Under the Operating Criteria

The management of the HUP is accomplished through the process defined in Sections 3.d. and 3.e. of the Operating Criteria. This process requires the development of this Annual HUP Operating Plan on or before June 30 of each year.

The Annual HUP Operating Plan is developed by the Bureau of Reclamation, in consultation with the Grand Valley Water Users Association, the Orchard Mesa Irrigation District, the Grand Valley Irrigation Company, the Division 5 Engineer, the Colorado Water Conservation Board and, Fish and Wildlife Service. These entities are collectively known as the 'Managing Entities'. The Managing Entities agree to make a good faith effort to develop an Annual HUP Operating Plan that is unanimously supported. However, the Bureau of Reclamation reserves the right to establish a release schedule, should unanimous consent be unattainable.

The Annual HUP Operating Plan is based upon actual HUP storage conditions; projected runoff forecasts; operational and climatological conditions; projected irrigation demands; and, 15-Mile Reach flow needs. It is expressly recognized, however, that in some years, release of the entire HUP by the end of the irrigation season will not be necessary or possible.

On or before June 30 of each year, the Bureau of Reclamation assembles initial information on storage in the HUP and comparative runoff years. Based upon the information assembled, a meeting is held with the other Managing Entities. During this meeting, a review of the forecasts is analyzed, and initial determinations of the level of "checking" required to preserve water in the HUP, as well as any determination of water surplus to HUP beneficiaries needs are made.

The HUP operations are reviewed and modified by the Managing Entities as necessary to respond to changing conditions. Subsequent meetings or conference calls are held on an as needed basis to reexamine HUP storage conditions, runoff forecasts climatological conditions, irrigation demands, 15-Mile Reach flow needs, and other operational conditions. Based upon this information, the Managing Entities adjust the checking. They also determine the water surplus for HUP beneficiary needs, as well as the release of such water. During periods of below average river flows, review meetings or conference calls may be held as frequently as every week.

This mechanism provides a way to integrate management of releases from the HUP with operation of the Check to accomplish the purposes of the Operating Criteria. The mechanism is also used to integrate releases from the HUP with releases for the endangered fish from other reservoirs including Ruedi and Wolford Mountain.

OPERATION SKIM

Big Thompson River water in excess of the minimum requirements, as recommended by the State of Colorado Division of Wildlife and the United States Fish and Wildlife Service, is diverted at Olympus Dam into the Foothills System to be used for power generation. This operation is known as operation "skim." The amount diverted depends on the flow at the Big Thompson River and the tributaries above Lake Estes, C-BT water imported through the Adams Tunnel, and the capacity of the Foothills System.

The water taken from the Big Thompson River can be used for power generation immediately. It can also be held in storage and replaced to the river with water from other sections of the system, depending on the power requirements. In general, water taken from the Big Thompson River at a variable rate, on a given date, is returned to the river at a flat rate, on the following day. This operation indirectly benefits the tourist and fishing industries along the Big Thompson Canyon by attenuating and diverting high flows, and by maintaining a steady stream during the runoff season.

Operation "skim" and storage of surplus water from the Big Thompson River in C-BT reservoirs are managed according to the AOP and as prescribed by the ECAO Water Scheduling staff.

During water year 2008 the Adams Tunnel was kept running water at near full capacity which kept the rest of conveyance system also running full. As a result, a large portion of the native inflow to Lake Estes was bypassed and sent down the Big Thompson River during the runoff season. That was the reason why skim operations through Olympus Tunnel were reduced so drastically in 2008 when compared to previous water years. During water year 2007, a total of 33,211 acre-feet of water was diverted through Olympus Tunnel for skim operations. In 2008, only 1,940 acre-feet was diverted for power generation purposes.

Contrary to the situation for the Olympus Tunnel, the Dille Tunnel skim diversions were high in 2008, totaling 28,866 acre-feet. The total could have been much higher, but the Big Thompson Powerplant was not made available until late June. With the Big Thompson Powerplant unavailable, there available runoff was also bypassed. By the time the powerplant became available the peak of the runoff was over.

Appendix A (Table 1 of 38)
Green Mountain Reservoir, CO

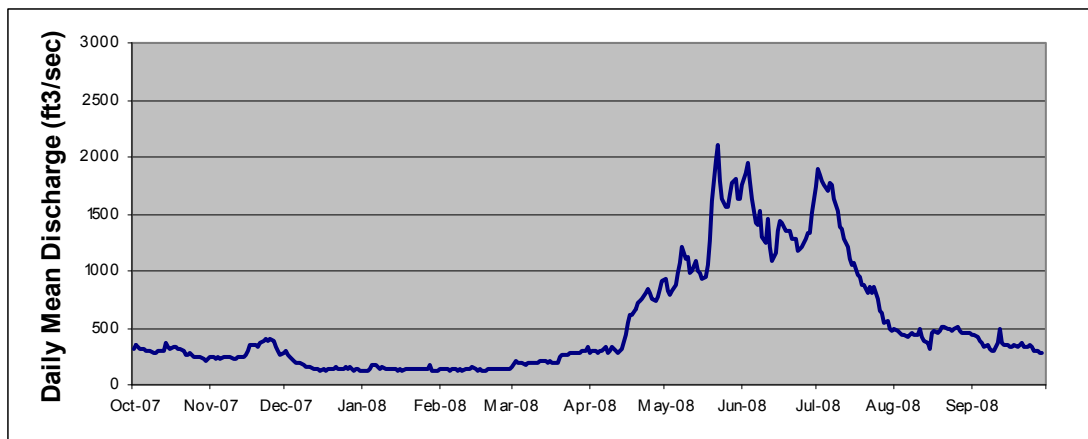
Location. --Lat 39°52'42", long 106°19'42", Summit County, Hydrologic Unit 14010002, on Green Mountain Dam, 13 miles southeast of Kremmling, Colorado, on the Blue River.

Gage. --Water level recorder with satellite telemetry. Elevation of gage is 7960 from topographic map.

Remarks.-- Inflow computed daily based on change in content from midnight to midnight, and on the 24-hour average releases from Green Mountain Reservoir. Recorders were operated from 01-Oct-2007 to 30-Sep-2008. Records are complete and reliable, but the data has not been revised. This record consists of operational data which could be subject to future revisions and changes.

Inflow, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	316	247	300	128	134	140	335	905	1632	1729	466	459
2	346	240	261	129	135	154	279	935	1753	1889	486	438
3	339	232	248	127	134	215	301	825	1860	1843	472	438
4	313	240	202	137	144	189	305	796	1945	1795	453	422
5	309	235	198	173	130	195	287	816	1784	1762	438	385
6	307	239	190	174	136	200	299	875	1640	1708	434	361
7	295	240	196	150	148	180	298	978	1420	1772	429	332
8	292	246	174	143	120	194	325	1069	1412	1750	443	353
9	286	238	160	151	141	195	285	1209	1530	1639	461	317
10	288	236	151	137	128	193	299	1098	1298	1526	437	303
11	292	236	151	138	136	196	328	1119	1246	1384	446	296
12	292	237	132	137	135	190	292	981	1449	1363	483	372
13	305	237	140	137	136	209	285	1005	1207	1275	426	493
14	365	240	133	138	164	202	294	1090	1095	1213	391	367
15	336	260	125	129	135	214	317	992	1157	1100	370	356
16	319	290	149	137	128	185	433	979	1358	1050	324	349
17	336	357	127	125	136	204	551	930	1447	1073	461	333
18	328	355	148	141	129	197	614	947	1417	963	479	330
19	317	349	147	133	131	199	610	1044	1353	946	453	352
20	317	340	133	135	132	201	672	1265	1351	885	468	340
21	307	369	156	135	138	250	715	1622	1344	884	502	356
22	260	383	140	149	139	270	730	1967	1288	809	514	372
23	267	403	133	132	145	270	750	2113	1280	851	493	337
24	275	391	142	140	145	261	803	1795	1180	810	494	339
25	251	398	156	140	138	276	841	1630	1196	859	482	350
26	254	381	134	133	144	275	805	1555	1209	747	493	331
27	238	338	157	134	138	285	757	1553	1279	653	515	307
28	241	295	130	168	140	285	739	1663	1326	625	479	297
29	225	271	137	120		280	777	1777	1327	546	464	286
30	215	277	139	127		293	838	1814	1502	558	463	289
31	234		124	125		300		1636		498	449	
Min	215	232	124	120	120	140	279	796	1095	498	324	286
Max	365	403	300	174	164	300	841	2113	1945	1889	515	493
Mean	292	293	162	139	137	222	505	1258	1410	1178	457	355
ac-ft	17949	17424	9926	8518	7601	13656	30025	77186	83724	72280	28053	21107



Appendix A (Table 2 of 38)
Elliot Creek Canal near Green Mountain Reservoir, CO

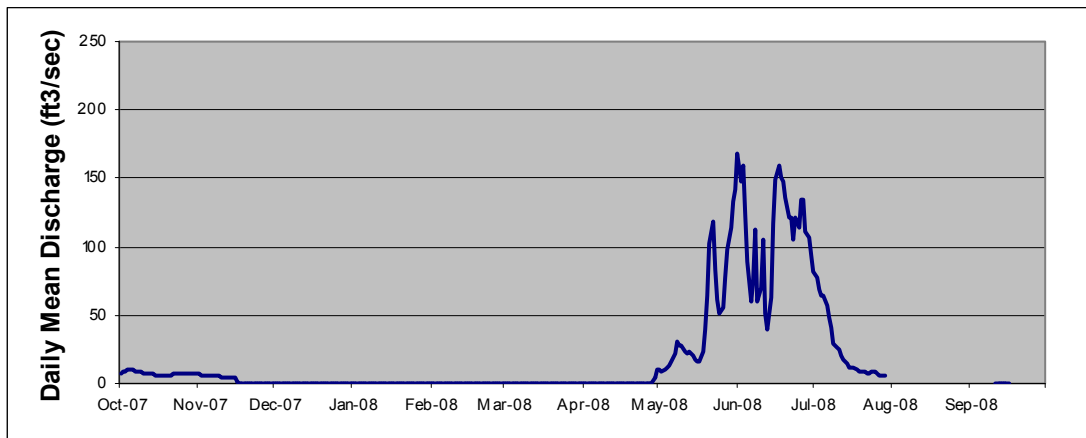
Location. --Lat 39°52'25", long 106°19'49", Summit County, Hydrologic Unit 14010002 , on left bank at concrete flume structure, and 1.1 mi west of Heeney.

Gage.--Water-stage recorder with satellite telemetry. Elevation of gage is 8050 ft from topographic map.

Remarks.—This is a diversion from Elliot Creek in the Blue River Basin to Green Mountain Reservoir. Recorder was operated 01-October-2007 through 31-July-2008. At that point data logger was lost. Maximum daily average discharge 168 cfs, 02-Jun-2008. Records are incomplete and only reliable until the end of July. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	7	7	0	0	0	0	0	10	142	94	N/A	N/A
2	8	7	0	0	0	0	0	10	168	82	N/A	N/A
3	9	6	0	0	0	0	0	9	148	77	N/A	N/A
4	11	6	0	0	0	0	0	10	159	69	N/A	N/A
5	10	6	0	0	0	0	0	12	124	64	N/A	N/A
6	10	6	0	0	0	0	0	13	89	65	N/A	N/A
7	9	6	0	0	0	0	0	16	60	58	N/A	N/A
8	9	5	0	0	0	0	0	21	76	49	N/A	N/A
9	8	5	0	0	0	0	0	31	113	41	N/A	N/A
10	8	5	0	0	0	0	0	28	60	29	N/A	N/A
11	8	5	0	0	0	0	0	28	70	26	N/A	N/A
12	7	5	0	0	0	0	0	24	105	25	N/A	0
13	7	5	0	0	0	0	0	22	52	20	N/A	0
14	7	5	0	0	0	0	0	23	39	18	N/A	0
15	7	5	0	0	0	0	0	20	63	14	N/A	0
16	6	2	0	0	0	0	0	18	116	12	N/A	0
17	6	0	0	0	0	0	0	16	149	12	N/A	0
18	6	0	0	0	0	0	0	17	160	11	N/A	N/A
19	6	0	0	0	0	0	0	23	151	10	N/A	N/A
20	6	0	0	0	0	0	0	40	147	9	N/A	N/A
21	7	0	0	0	0	0	0	64	135	9	N/A	N/A
22	7	0	0	0	0	0	0	103	122	9	0	N/A
23	7	0	0	0	0	0	0	118	122	8	N/A	N/A
24	7	0	0	0	0	0	0	84	106	8	N/A	N/A
25	7	0	0	0	0	0	0	62	121	8	N/A	N/A
26	7	0	0	0	0	0	0	51	114	9	N/A	N/A
27	7	0	0	0	0	0	0	56	135	7	N/A	N/A
28	7	0	0	0	0	0	0	77	134	6	N/A	N/A
29	7	0	0	0	0	0	0	99	111	6	N/A	N/A
30	7	0	0	0	0	0	4	113	106	6	N/A	N/A
31	7		0	0		0		134		N/A	N/A	
Min	6	0	0	0	0	0	0	9	39	6	N/A	N/A
Max	11	7	0	0	0	0	4	134	168	94	N/A	N/A
Mean	7	3	0	0	0	0	0	44	113	29	N/A	N/A
ac-ft	455	169	0	0	0	0	8	2676	6724	1705	N/A	N/A



**Appendix A (Table 3 of 38)
Green Mountain Reservoir, CO**

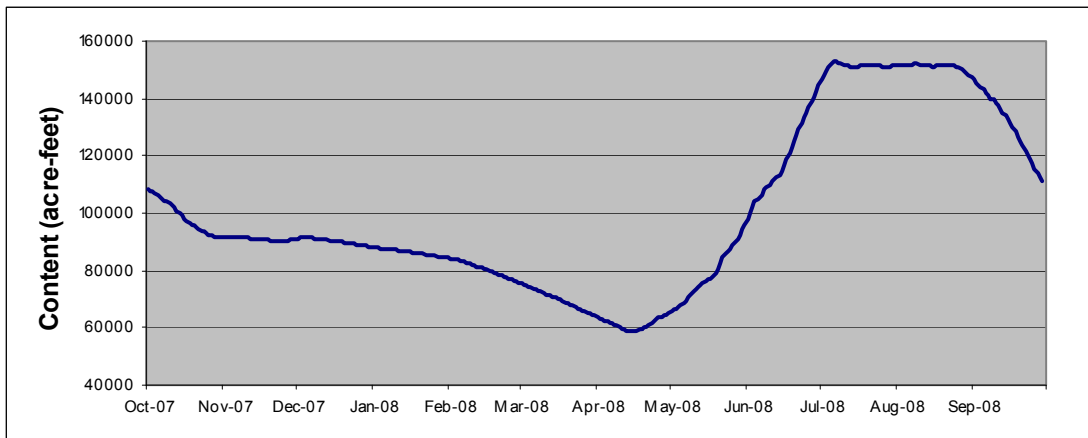
Location. --Lat 39°52'42", long 106°19'42", Summit County, Hydrologic Unit 14010002, on Green Mountain Dam, 13 miles southeast of Kremmling, Colorado, on the Blue River..

Gage. --Water level recorder with satellite telemetry. Elevation of gage is 7960 from topographic map.

Remarks.--Reservoir is formed by an earth-fill dam. Construction completed in 1943. Impoundment began on 16-Nov-1942. Green Mountain Reservoir provides storage for replacement water for the Colorado-Big Thompson Project. Recorder was operated from 01-Oct-2007 to 30-Sep-2008. Maximum capacity is 153,639 acre-feet at elevation 7950.00 ft, with 146,779 acre-feet of active capacity. Records are complete and reliable, but the data has not been revised. This record consists of operational data which could be subject to future revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	108,342	91,658	91,190	88,160	84,206	75,649	64,124	65,352	95,937	144,356	151,440	147,269
2	107,856	91,629	91,307	88,017	84,026	75,279	63,706	65,995	97,816	146,528	151,566	146,446
3	107,357	91,585	91,395	87,861	83,846	75,011	63,327	66,425	99,895	148,078	151,651	145,623
4	106,809	91,556	91,395	87,733	83,654	74,654	62,948	66,797	102,159	149,449	151,736	144,845
5	106,246	91,512	91,380	87,677	83,408	74,287	62,526	67,228	104,024	150,707	151,799	144,050
6	105,688	91,483	91,351	87,620	83,175	73,934	62,130	67,783	105,130	151,841	151,841	143,134
7	105,114	91,453	91,336	87,521	82,943	73,544	61,735	68,529	105,590	152,687	151,905	142,043
8	104,510	91,439	91,278	87,408	82,628	73,180	61,396	69,461	106,032	152,708	151,968	140,975
9	103,911	91,395	91,190	87,309	82,355	72,819	60,974	70,661	108,039	152,412	152,074	140,114
10	103,295	91,336	91,087	87,182	82,057	72,470	60,584	71,641	109,082	151,989	151,989	139,513
11	102,702	91,307	90,985	87,054	81,774	72,109	60,262	72,657	109,978	151,566	151,884	138,698
12	101,903	91,278	90,839	86,927	81,490	71,740	59,867	73,405	111,273	151,545	151,841	137,449
13	100,920	91,234	90,708	86,800	81,179	71,408	59,461	74,186	112,117	151,356	151,672	136,445
14	100,053	91,146	90,563	86,672	80,910	71,064	59,071	75,138	112,720	151,084	151,482	135,208
15	99,133	90,999	90,404	86,531	80,589	70,745	58,734	75,815	113,449	150,958	151,293	133,963
16	98,185	90,868	90,288	86,405	80,255	70,369	58,619	76,331	114,757	151,021	151,084	132,665
17	97,340	90,853	90,129	86,251	79,934	70,030	58,745	76,770	116,539	151,252	151,189	131,336
18	96,711	90,752	90,013	86,125	79,601	69,678	58,987	77,250	118,609	151,461	151,335	129,845
19	96,134	90,650	89,897	85,985	79,271	69,330	59,218	77,929	120,706	151,630	151,419	128,271
20	95,542	90,534	89,753	85,846	78,914	68,947	59,568	78,993	122,919	151,651	151,545	126,652
21	94,939	90,477	89,651	85,706	78,544	68,552	60,006	80,495	125,139	151,672	151,714	125,083
22	94,384	90,448	89,521	85,594	78,177	68,149	60,454	82,368	127,252	151,566	151,736	123,563
23	93,889	90,462	89,376	85,454	77,824	67,724	60,963	84,358	129,350	151,545	151,609	121,963
24	93,429	90,448	89,248	85,328	77,472	67,275	61,581	85,720	131,278	151,461	151,482	120,378
25	92,925	90,448	89,147	85,202	77,106	66,843	62,273	86,743	133,224	151,482	151,335	118,808
26	92,480	90,477	89,004	85,063	76,744	66,402	62,881	87,606	135,189	151,314	151,210	117,198
27	92,083	90,578	88,904	84,925	76,370	66,007	63,394	88,518	137,113	151,000	150,979	115,550
28	91,878	90,723	88,747	84,856	76,009	65,605	63,875	89,651	138,757	150,874	150,476	114,024
29	91,805	90,853	88,604	84,704		65,191	64,294	90,985	140,334	150,895	149,680	112,513
30	91,717	90,999	88,461	84,565		64,803	64,757	92,673	142,245	151,147	148,888	111,034
31	91,673		88,303	84,386		64,429		94,294		151,335	148,057	
Min	91,673	90,448	88,303	84,386	76,009	64,429	58,619	65,352	95,937	144,356	148,057	111,034
Max	108,342	91,658	91,395	88,160	84,206	75,649	64,757	94,294	142,245	152,708	152,074	147,269
EOM	91,673	90,999	88,303	84,386	76,009	64,429	64,757	94,294	142,245	151,335	148,057	111,034



Appendix A (Table 4 of 38)
Blue River below Green Mountain Reservoir, CO

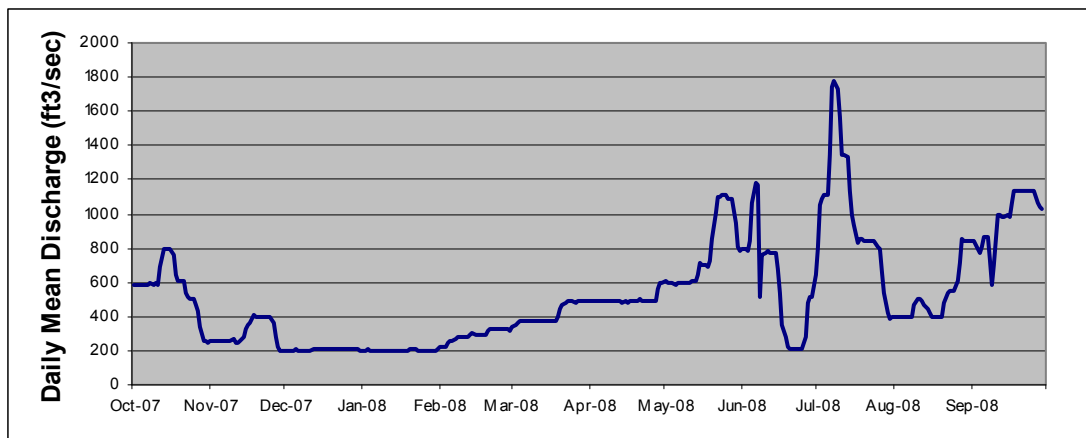
Location.--Lat 39°52'49", long 106°20'00", Summit County, Hydrologic Unit 14010002, on left bank 0.3 miles upstream from Elliot Creek, 0.3 miles downstream from Green Mountain Reservoir and 13 miles southeast of Kremmling.

Gage.-- Water-stage recorder with satellite telemetry. Datum of gage is 7682.66 feet (levels by U.S. Bureau of Reclamation).

Remarks.--Drainage area is 599 mi² including 15.3 mi² of Elliot Creek above the diversion for Elliot Creek feeder canal. Flow regulated by Green Mountain Reservoir since 1942. Diversions for irrigation of 5,000 acres upstream from station. Transmountain diversions upstream from station. Recorder was operated from 01-Oct-2007 to 30-Sep-2008. Records are complete and reliable. Records are complete and reliable, but the data has not been revised. This record consists of operational data which could be subject to future revisions and changes. Official record is published by the United States Geological Survey.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	581	253	204	200	225	321	488	602	789	648	394	845
2	585	254	202	201	226	340	487	604	790	794	398	845
3	585	253	203	205	225	350	489	602	792	1050	396	844
4	584	253	202	201	241	368	493	602	789	1090	396	801
5	587	256	205	201	254	379	497	592	839	1110	393	767
6	583	253	204	203	253	377	496	589	1070	1110	394	809
7	579	254	203	200	265	376	495	595	1180	1340	397	868
8	591	252	203	200	279	377	493	592	1170	1740	400	866
9	583	259	204	201	279	376	495	597	518	1780	400	736
10	593	265	203	201	278	376	493	597	765	1730	471	587
11	586	250	202	202	279	377	488	600	774	1570	499	707
12	689	251	205	201	278	375	489	597	779	1350	498	991
13	795	258	206	201	293	376	487	604	771	1350	496	989
14	796	284	206	202	300	375	488	603	777	1330	464	986
15	794	333	205	200	297	374	484	643	773	1140	446	984
16	791	355	207	200	296	374	488	711	680	998	417	993
17	756	364	207	202	298	374	485	701	535	935	398	987
18	640	405	206	204	297	374	489	698	355	836	395	1070
19	603	400	205	203	297	374	491	694	280	851	398	1140
20	610	398	205	205	312	394	493	724	220	855	398	1140
21	606	397	207	205	324	448	492	857	205	847	398	1140
22	535	397	205	205	324	473	501	1010	206	847	482	1130
23	511	395	206	202	323	484	491	1100	207	846	542	1130
24	502	397	206	203	322	487	489	1100	207	841	545	1130
25	500	397	207	203	322	493	490	1110	210	840	544	1130
26	473	365	206	203	326	497	495	1110	208	811	545	1130
27	433	286	207	203	326	484	495	1090	285	790	610	1130
28	340	221	209	203	322	487	493	1090	478	670	716	1060
29	257	204	209	197		488	563	1090	509	535	853	1040
30	254	202	211	197		488	602	952	517	426	847	1030
31	251		203	215		488		802		388	847	
Min	251	202	202	197	225	321	484	589	205	388	393	587
Max	796	405	211	215	326	497	602	1110	1180	1780	853	1140
Mean	567	304	205	202	288	410	497	770	589	1014	496	967
ac-ft	34795	18040	12599	12413	15961	25194	29540	47239	35002	62267	30446	57430



Appendix A (Table 5 of 38)
Willow Creek Reservoir, CO

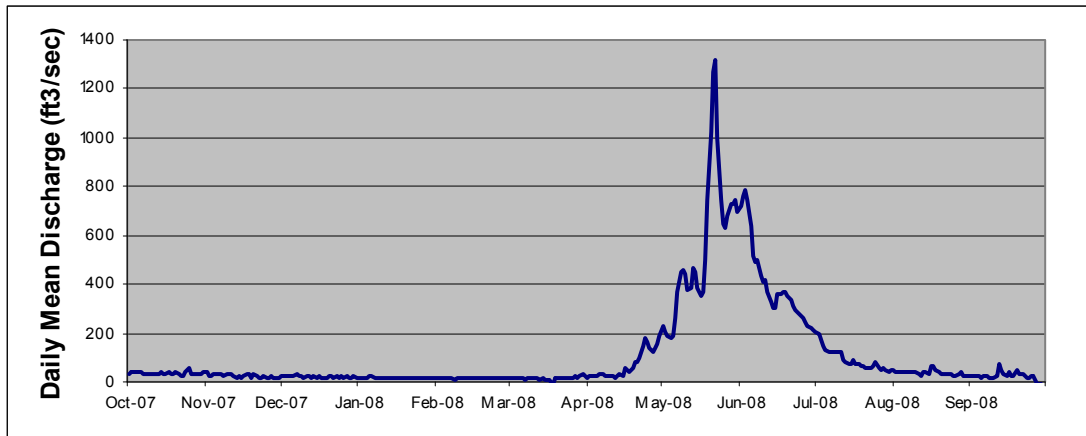
Location. — Lat 40°08'52", long 105°56'28", Grand County, Hydrologic Unit 14010001, at Willow Creek Dam, 4 miles north of Granby, Colorado, on Willow Creek, a tributary of the Colorado River.

Gage.— Water level recorder with satellite telemetry. Elevation of gage is 8130 from topographic map.

Remarks.—Inflow computed daily using change in content from midnight to midnight, plus the 24-hour average releases through the Willow Creek Pump Canal and the reservoir outlet works. Recorders were operated from 01-Oct-2007 to 30-Sep-2008. Records are complete and reliable, but the data has not been revised. This record consists of operational data which could be subject to future revisions and changes.

Inflow, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	34	38	27	18	20	19	28	185	697	212	48	25
2	44	28	22	16	19	18	18	230	717	203	46	24
3	42	28	24	16	16	16	26	207	760	194	42	23
4	38	30	23	17	15	13	26	185	789	175	43	23
5	37	31	21	21	17	17	24	179	746	144	40	23
6	37	30	26	22	16	16	27	185	635	132	37	19
7	35	29	31	17	20	15	29	263	513	125	39	22
8	36	28	23	19	12	12	31	370	493	125	42	24
9	35	29	23	18	16	14	24	451	497	125	37	20
10	34	31	18	18	15	15	28	457	437	123	42	18
11	34	30	23	20	18	16	26	441	406	122	41	19
12	33	24	25	17	14	15	23	376	414	119	36	28
13	31	16	20	20	15	13	20	388	371	89	26	71
14	37	22	23	16	18	12	23	465	329	81	38	48
15	34	17	17	16	15	13	33	447	307	78	44	35
16	32	23	22	19	14	12	28	386	304	77	34	24
17	39	34	20	16	16	9	56	349	359	93	62	38
18	35	35	19	16	15	6	47	366	362	71	68	21
19	30	17	19	16	16	-6	44	499	365	72	50	25
20	37	29	21	18	15	18	57	741	371	64	37	48
21	34	23	23	15	16	19	78	1025	353	63	36	33
22	24	14	19	14	15	16	82	1268	332	56	33	35
23	22	20	21	17	14	20	95	1318	311	57	30	35
24	37	22	19	14	17	15	147	997	295	59	29	13
25	54	20	21	16	17	18	180	742	285	65	30	19
26	35	19	17	17	17	16	163	643	271	80	26	25
27	36	21	23	16	14	18	137	631	259	55	22	25
28	35	20	17	18	14	24	121	683	246	52	32	-7
29	34	17	20	17		20	139	729	232	54	40	-6
30	34	19	21	16		25	154	726	219	53	25	-8
31	37		17	19		31		743		43	25	
Min	22	14	17	14	12	-6	18	179	219	43	22	-8
Max	54	38	31	22	20	31	180	1318	789	212	68	71
Mean	36	25	21	17	16	16	64	538	423	99	38	25
ac-ft	2180	1470	1313	1054	880	953	3788	33017	25097	6059	2344	1467



**Appendix A (Table 6 of 38)
Willow Creek Reservoir, CO**

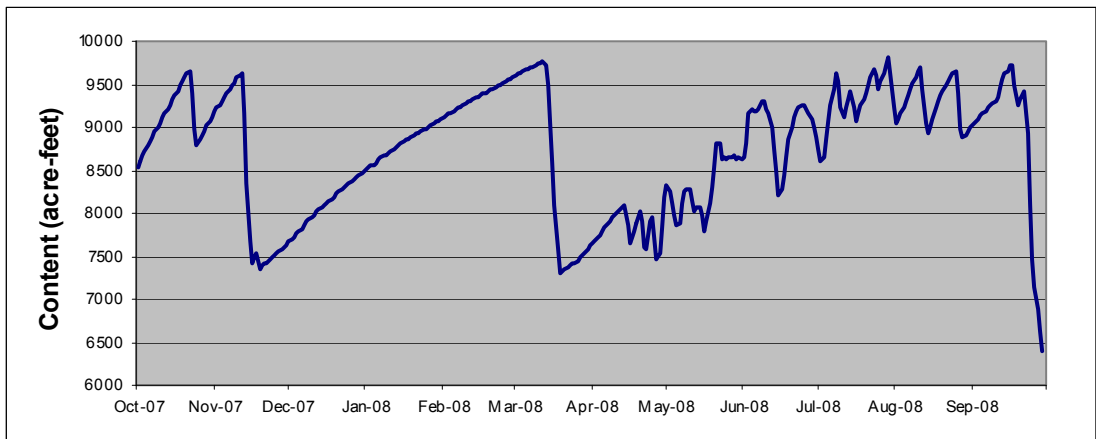
Location.—Lat 40° 08'52", long 105° 56'28", Grand County, Hydrologic Unit 14010001, at Willow Creek Dam, 4 miles north of Granby, Colorado, on Willow Creek, a tributary of the Colorado River.

Gage.— Water level recorder with satellite telemetry. Elevation of gage is 8130 from topographic map.

Remarks.—Reservoir is formed by an earth-fill dam. Construction completed in 1953. Impoundment began on April 2, 1953. Willow Creek Reservoir stores water from Willow Creek for diversion to Granby Reservoir via the Willow Creek Canal. Recorder was operated from 01-Oct 2007 to 30-Sep-2008. Record is complete and fair. Maximum capacity is 10,600 acre-feet at elevation 8,130.00 ft, with 9,100 acre-feet of active capacity between elevations 8077.00 and 8130.00 feet. Records are complete and reliable, but the data has not been revised. This record consists of operational data which could be subject to future revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	8,524	9,182	7,667	8,515	9,123	9,584	7,628	8,177	8,630	8,877	9,240	8,989
2	8,597	9,224	7,694	8,532	9,145	9,603	7,649	8,330	8,645	8,746	9,036	9,026
3	8,663	9,265	7,728	8,549	9,161	9,620	7,685	8,247	8,823	8,595	9,099	9,062
4	8,723	9,310	7,760	8,567	9,174	9,631	7,721	8,120	9,169	8,640	9,171	9,094
5	8,782	9,356	7,788	8,592	9,190	9,650	7,751	7,983	9,200	8,864	9,238	9,128
6	8,841	9,397	7,825	8,620	9,206	9,667	7,790	7,857	9,195	9,062	9,297	9,155
7	8,895	9,438	7,871	8,640	9,230	9,681	7,832	7,883	9,187	9,251	9,364	9,187
8	8,950	9,479	7,903	8,663	9,240	9,690	7,878	8,122	9,198	9,441	9,438	9,222
9	9,005	9,523	7,934	8,685	9,257	9,704	7,910	8,266	9,305	9,631	9,501	9,248
10	9,057	9,570	7,955	8,706	9,270	9,720	7,948	8,286	9,294	9,526	9,575	9,270
11	9,110	9,614	7,987	8,729	9,291	9,737	7,987	8,274	9,203	9,230	9,648	9,299
12	9,161	9,620	8,020	8,749	9,305	9,751	8,018	8,132	9,161	9,118	9,690	9,345
13	9,206	9,171	8,046	8,774	9,321	9,763	8,042	8,025	8,999	9,232	9,443	9,476
14	9,265	8,349	8,077	8,792	9,343	9,732	8,072	8,068	8,749	9,332	9,039	9,561
15	9,318	7,678	8,096	8,810	9,356	9,482	8,101	8,077	8,487	9,424	8,932	9,620
16	9,367	7,429	8,125	8,831	9,370	9,052	7,857	7,969	8,211	9,243	8,989	9,656
17	9,430	7,479	8,149	8,849	9,386	8,572	7,653	7,788	8,276	9,068	9,099	9,720
18	9,482	7,530	8,172	8,867	9,402	8,084	7,728	7,913	8,443	9,155	9,222	9,726
19	9,526	7,350	8,196	8,885	9,419	7,570	7,799	8,125	8,660	9,251	9,308	9,487
20	9,584	7,389	8,223	8,906	9,432	7,311	7,894	8,313	8,851	9,329	9,370	9,265
21	9,636	7,418	8,254	8,921	9,449	7,333	8,032	8,534	9,007	9,402	9,430	9,318
22	9,650	7,429	8,276	8,934	9,465	7,350	7,903	8,813	9,118	9,479	9,482	9,375
23	9,405	7,455	8,303	8,953	9,479	7,376	7,604	8,818	9,190	9,575	9,531	9,430
24	8,984	7,484	8,327	8,966	9,498	7,391	7,577	8,625	9,230	9,678	9,578	8,929
25	8,798	7,510	8,354	8,984	9,515	7,411	7,913	8,645	9,251	9,598	9,625	8,084
26	8,851	7,534	8,374	9,002	9,534	7,426	7,948	8,632	9,248	9,443	9,645	7,464
27	8,906	7,559	8,403	9,020	9,548	7,448	7,721	8,642	9,216	9,537	9,394	7,146
28	8,960	7,584	8,423	9,041	9,561	7,481	7,459	8,650	9,163	9,625	8,981	6,891
29	9,013	7,604	8,448	9,060		7,506	7,541	8,675	9,094	9,720	8,877	6,639
30	9,065	7,628	8,475	9,078		7,541	7,827	8,635	8,994	9,814	8,914	6,387
31	9,123		8,495	9,099		7,586		8,645		9,623	8,950	
Min	8,524	7,350	7,667	8,515	9,123	7,311	7,459	7,788	8,211	8,595	8,877	6,387
Max	9,650	9,620	8,495	9,099	9,561	9,763	8,101	8,818	9,305	9,814	9,690	9,726
EOM	9,123	7,628	8,495	9,099	9,561	7,586	7,827	8,645	8,994	9,623	8,950	6,387



Appendix A (Table 7 of 38)
Willow Creek below Willow Creek Reservoir, CO

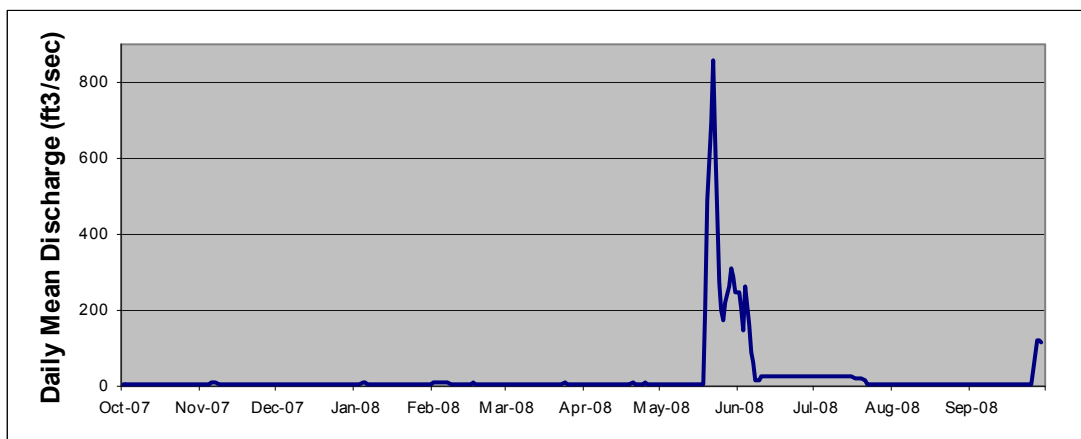
Location.--Lat 40°08'50", long 105°56'16", Grand County, Hydrologic Unit 14010001, at Willow Creek Dam, 4 miles north of Granby, Colorado, on Willow Creek, a tributary of the Colorado River.

Gage.--Water-stage recorder with satellite telemetry. Elevation of gage is 8040 feet from topographic map.

Remarks.-- Drainage area is 127 square miles. Recorder was operated from 01-Oct-2007 to 30-Sep-2008. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	7	7	7	7	8	7	7	7	247	27	4	4
2	7	7	7	7	8	7	7	7	250	27	4	4
3	7	7	7	7	8	7	7	7	206	27	4	4
4	7	7	7	8	8	7	7	7	148	27	4	4
5	7	8	7	8	8	7	7	7	261	27	4	4
6	7	8	7	7	8	7	7	7	161	27	4	4
7	7	8	7	7	8	7	7	7	89	27	4	4
8	7	7	7	7	7	7	7	7	61	27	4	4
9	7	7	7	7	7	7	7	7	17	27	4	4
10	7	7	7	7	7	7	7	7	17	27	4	4
11	7	7	7	7	7	7	6	7	24	26	4	4
12	7	7	7	7	7	7	7	7	27	27	4	4
13	7	7	7	7	7	7	7	7	27	27	4	4
14	7	7	7	7	7	7	7	7	27	27	4	4
15	7	7	7	7	7	7	7	7	27	27	4	4
16	7	7	7	7	7	7	7	7	27	27	4	4
17	7	7	7	7	8	7	7	7	27	26	4	4
18	7	7	7	7	7	7	7	7	27	22	4	4
19	7	7	7	7	7	7	7	7	27	21	4	4
20	7	7	7	7	7	7	7	206	27	21	4	4
21	7	7	7	7	7	7	8	487	27	21	4	4
22	7	7	7	7	7	7	7	694	28	14	4	4
23	7	7	7	7	7	7	7	858	28	5	4	4
24	7	7	7	7	7	7	7	637	28	4	4	4
25	7	7	7	7	7	8	7	276	28	4	4	4
26	7	7	7	7	7	7	8	199	27	4	4	5
27	7	7	7	7	7	7	7	175	27	4	4	42
28	7	7	7	7	7	7	7	222	27	4	4	120
29	7	7	7	7	7	7	7	262	27	4	4	119
30	7	7	7	7	7	7	7	309	27	4	4	117
31	7	7	7	7	7	7	7	291	27	4	4	4
Min	7	7	7	7	7	7	6	7	17	4	4	4
Max	7	8	7	8	8	8	8	858	261	27	4	120
Mean	7	7	7	7	7	7	7	153	67	19	4	17
ac-ft	430	422	430	434	404	432	418	9403	3956	1174	246	996



Appendix A (Table 8 of 38)
Willow Creek Pump Canal, CO

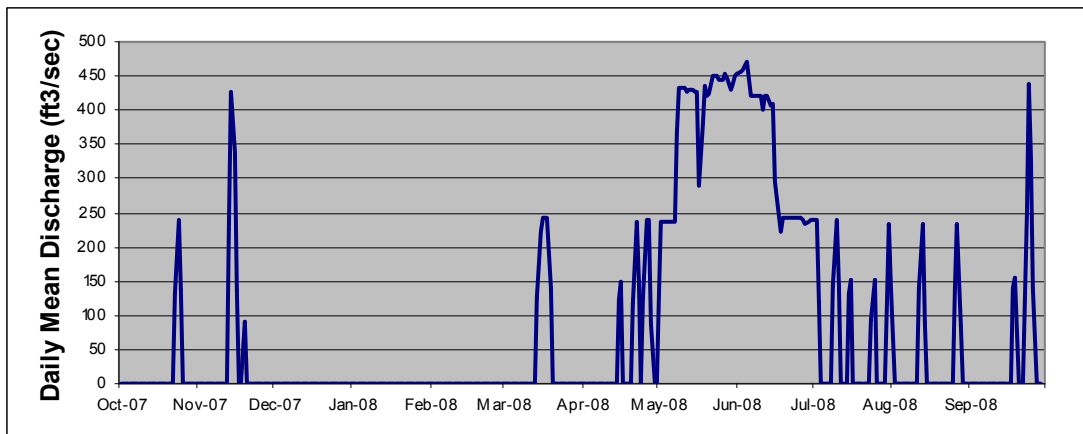
Location. —Lat 40°08'39", long 105°54'10", Grand County, Hydrologic Unit 14010001, at Willow Creek Pump Canal, 4 miles north of Granby, Colorado, on Willow Creek, a tributary of the Colorado River.

Gage. — Water-stage recorder with satellite telemetry at 15 foot Parshall Flume. Elevation of gage is 8300 feet from topographic map.

Remarks. —Canal is used to divert water from Willow Creek Reservoir to Granby Reservoir. Diversions are seasonal, mainly during late spring and early summer. Construction completed in 1953. Length of the canal is 3.4 miles, maximum capacity is 400 ft³/sec. Recorder was operated from 01-Oct-2007 to 30-Sep-2008. . Records are complete and reliable, but the data has not been revised. This record consists of operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	450	239	234	0
2	0	0	0	0	0	0	0	128	452	239	140	0
3	0	0	0	0	0	0	0	237	456	241	0	0
4	0	0	0	0	0	0	0	237	459	121	0	0
5	0	0	0	0	0	0	0	237	464	0	0	0
6	0	0	0	0	0	0	0	237	470	0	0	0
7	0	0	0	0	0	0	0	237	422	0	0	0
8	0	0	0	0	0	0	0	237	420	0	0	0
9	0	0	0	0	0	0	0	365	420	0	0	0
10	0	0	0	0	0	0	0	434	420	142	0	0
11	0	0	0	0	0	0	0	434	420	241	0	0
12	0	0	0	0	0	0	0	434	401	144	0	0
13	0	226	0	0	0	0	0	428	420	0	140	0
14	0	427	0	0	0	0	0	430	422	0	234	0
15	0	340	0	0	0	127	0	429	406	0	92	0
16	0	138	0	0	0	221	124	428	410	131	0	0
17	0	0	0	0	0	242	150	428	294	151	0	0
18	0	0	0	0	0	243	0	290	245	0	0	0
19	0	90	0	0	0	244	0	379	223	0	0	140
20	0	0	0	0	0	139	0	435	244	0	0	155
21	0	0	0	0	0	0	0	420	242	0	0	0
22	0	0	0	0	0	0	118	425	244	0	0	0
23	131	0	0	0	0	0	236	451	242	0	0	0
24	241	0	0	0	0	0	150	451	242	0	0	250
25	138	0	0	0	0	0	0	450	244	93	0	438
26	0	0	0	0	0	0	126	444	242	151	0	329
27	0	0	0	0	0	0	241	445	242	0	140	141
28	0	0	0	0	0	0	241	452	241	0	233	0
29	0	0	0	0	0	0	87	446	234	0	86	0
30	0	0	0	0	0	0	0	430	237	0	0	0
31	0	0	0	0	0	0	0	439	0	116	0	0
Min	0	0	0	0	0	0	0	0	223	0	0	0
Max	241	427	0	0	0	244	241	452	470	241	234	438
Mean	16	41	0	0	0	39	49	365	344	65	42	48
ac-ft	1010	2418	0	0	0	2408	2917	22408	20449	3978	2572	2877



**Appendix A (Table 9 of 38)
Windy Gap Pumping Plant, CO**

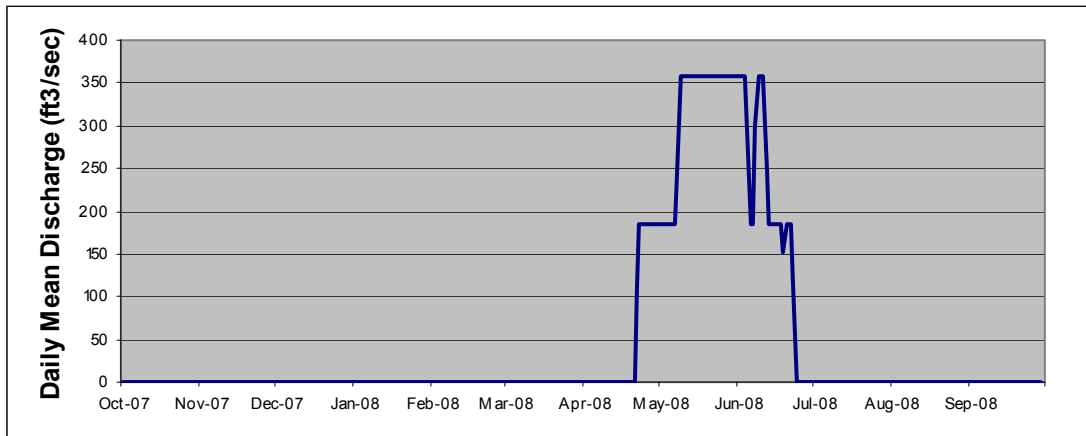
Location. --Lat 40°06'24", long 105°58'48", Grand County, Hydrologic Unit 14010001, 5.5 miles northeast of Granby, Colorado, on the Colorado River.

Gage.-- Reading taken directly from the pumps. Elevation of the pumping plant is 7823 from topographic map.

Remarks.— Water is pumped from Windy Gap Reservoir to Granby Reservoir. Water is stored at Granby Reservoir before delivery through Adams Tunnel. Data was provided by Farr Pumping Plant operators each morning. Data was collected from 01-Oct-2007 to 30-Sep-2008. Records are complete and reliable, but the data has not been revised. This record consists of operational data which could be subject to future revisions and changes.

Windy Gap Pump Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	184	358	0	0	0
2	0	0	0	0	0	0	0	184	358	0	0	0
3	0	0	0	0	0	0	0	184	358	0	0	0
4	0	0	0	0	0	0	0	184	358	0	0	0
5	0	0	0	0	0	0	0	184	358	0	0	0
6	0	0	0	0	0	0	0	184	242	0	0	0
7	0	0	0	0	0	0	0	184	184	0	0	0
8	0	0	0	0	0	0	0	184	184	0	0	0
9	0	0	0	0	0	0	0	239	299	0	0	0
10	0	0	0	0	0	0	0	358	358	0	0	0
11	0	0	0	0	0	0	0	358	358	0	0	0
12	0	0	0	0	0	0	0	358	358	0	0	0
13	0	0	0	0	0	0	0	358	249	0	0	0
14	0	0	0	0	0	0	0	358	184	0	0	0
15	0	0	0	0	0	0	0	358	184	0	0	0
16	0	0	0	0	0	0	0	358	184	0	0	0
17	0	0	0	0	0	0	0	358	184	0	0	0
18	0	0	0	0	0	0	0	358	184	0	0	0
19	0	0	0	0	0	0	0	358	184	0	0	0
20	0	0	0	0	0	0	0	358	153	0	0	0
21	0	0	0	0	0	0	0	358	184	0	0	0
22	0	0	0	0	0	0	0	358	184	0	0	0
23	0	0	0	0	0	0	0	105	358	184	0	0
24	0	0	0	0	0	0	0	184	358	120	0	0
25	0	0	0	0	0	0	0	184	358	0	0	0
26	0	0	0	0	0	0	0	184	358	0	0	0
27	0	0	0	0	0	0	0	184	358	0	0	0
28	0	0	0	0	0	0	0	184	358	0	0	0
29	0	0	0	0	0	0	0	184	358	0	0	0
30	0	0	0	0	0	0	0	184	358	0	0	0
31	0	0	0	0	0	0	0	358	0	0	0	0
Min	0	0	0	0	0	0	0	184	0	0	0	0
Max	0	0	0	0	0	0	0	184	358	358	0	0
Mean	0	0	0	0	0	0	0	47	309	198	0	0
ac-ft	0	0	0	0	0	0	0	2763	18970	11787	0	0



**Appendix A (Table 10 of 38)
Granby Reservoir, CO**

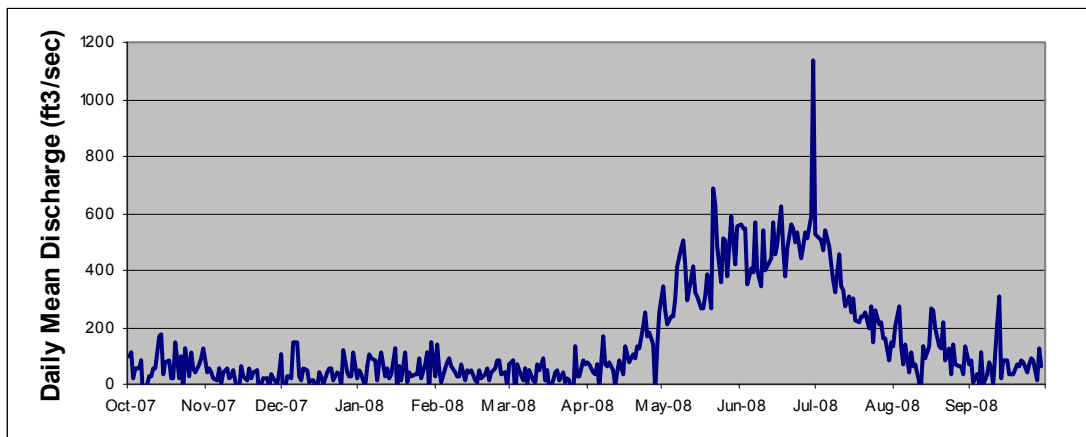
Location. --Lat 40°08'54", long 105°51'48", Grand County, Hydrologic Unit 14010001, on Granby Dam, 5.5 miles northeast of Granby, Colorado, on the Colorado River.

Gage.-- Water level recorder with satellite telemetry. Elevation of gage is 8300 from topographic map.

Remarks.-- Inflow computed daily based on change in content from midnight to midnight, and on the average daily releases through the reservoir outlet works. Recorders were operated from 01-Oct-2007 to 30-Sep-2008. Records are complete and reliable, but the data has not been revised. This record consists of operational data which could be subject to future revisions and changes.

Inflow, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	99	39	107	50	143	-4	73	250	553	1138	148	73
2	114	55	-48	33	46	73	74	345	560	523	130	82
3	23	43	26	-6	9	81	70	258	544	513	203	8
4	54	23	31	60	57	-45	45	214	545	502	271	32
5	55	12	23	108	80	73	32	236	354	473	133	2
6	86	53	147	88	90	49	72	242	407	537	71	111
7	-69	-3	149	83	65	13	-13	299	394	482	138	-1
8	-29	40	25	14	43	54	168	413	567	421	45	35
9	31	55	12	77	30	-1	72	476	401	367	111	79
10	29	23	56	113	25	47	65	506	342	326	66	58
11	54	25	49	27	71	14	78	422	537	456	69	-1
12	59	52	4	57	13	9	51	294	398	344	6	210
13	171	-18	16	18	48	71	-9	374	415	328	-1	310
14	174	-12	14	34	39	49	42	412	441	275	131	21
15	37	61	-15	124	50	90	84	323	566	311	89	81
16	79	30	43	-21	15	12	38	312	454	250	133	81
17	87	17	28	61	10	51	136	267	491	304	266	32
18	24	54	3	14	50	-19	104	266	628	228	263	38
19	24	23	43	111	23	17	79	312	480	218	200	37
20	147	41	56	5	34	39	106	386	377	240	135	71
21	24	52	57	43	59	48	93	270	480	237	128	64
22	96	-41	14	28	13	15	132	686	560	254	217	85
23	-26	1	43	35	41	45	125	632	546	196	87	75
24	123	23	34	32	55	9	202	483	495	275	127	40
25	27	18	-5	91	82	20	255	359	530	145	38	68
26	110	-16	120	20	83	16	169	509	439	259	137	92
27	54	32	41	68	33	-46	180	507	483	209	68	86
28	43	19	28	112	39	136	138	382	535	216	62	17
29	73	-1	28	-30		30	-25	590	512	159	61	123
30	89	40	114	146		31	123	508	589	159	35	64
31	123		20	30		86		418		83	133	
Min	-69	-41	-48	-30	9	-46	-25	214	342	83	-1	-1
Max	174	61	149	146	143	136	255	686	628	1138	271	310
Mean	64	25	41	52	48	34	92	386	487	336	119	69
ac-ft	3930	1465	2501	3218	2665	2105	5463	23663	28954	20647	7326	4105



**Appendix A (Table 11 of 38)
Granby Reservoir, CO**

Location. --Lat 40°08'54", long 105°51'48", Grand County, Hydrologic Unit 14010001, on Granby Dam, 5.5 miles northeast of Granby, Colorado, on the Colorado River.

Gage.-- Water level recorder with satellite telemetry. Elevation of gage is 8300 from topographic map.

Remarks.--Reservoir is formed by an earth-fill dam and four earth-fill dikes. Construction completed in 1950. Impoundment began on 14-Sep-1949.

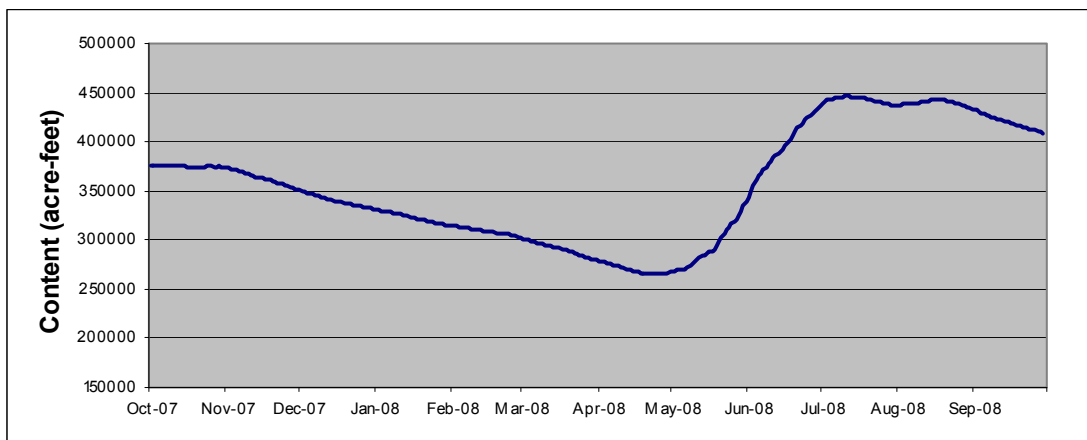
Granby Reservoir provides west-slope storage for the Colorado-Big Thompson Project. Recorder was operated from 01-Oct-2007 to 30-Sep-2008.

Maximum capacity is 539,800 acre-feet at elevation 8,280.00, with 463,300 acre-feet of active capacity between elevations 8186.90 and 8280.00 feet.

Records are complete and reliable, but the data has not been revised. This record consists of operational data which could be subject to future revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	376,346	373,855	350,440	331,358	314,633	302,332	279,873	267,033	338,546	436,997	437,128	433,859
2	375,799	373,188	349,500	330,443	314,297	301,510	279,084	267,906	343,711	439,094	437,521	432,946
3	375,495	372,642	348,620	329,415	313,905	300,854	278,454	268,627	349,500	441,000	437,717	431,969
4	375,555	372,037	347,799	328,959	313,514	299,925	277,824	269,090	355,691	442,053	438,176	430,927
5	375,616	371,492	346,979	328,845	313,235	299,433	276,829	269,606	360,802	442,910	438,373	429,563
6	375,738	370,706	346,395	328,674	312,844	298,670	276,149	270,329	364,988	443,767	438,504	428,719
7	375,860	369,680	346,278	328,446	312,509	297,908	275,314	271,053	368,233	444,559	438,963	427,617
8	376,164	368,775	345,402	327,991	312,174	297,093	274,792	272,452	370,948	445,286	439,160	426,516
9	376,407	367,751	344,760	327,479	311,728	296,170	274,011	274,271	374,583	445,550	439,488	425,481
10	376,407	366,729	343,944	326,910	311,227	295,520	273,179	276,672	377,687	445,881	439,948	424,383
11	376,468	365,768	342,779	326,342	310,837	294,708	272,400	278,611	380,191	446,344	440,408	423,286
12	376,529	364,808	342,024	325,708	310,448	294,221	271,674	280,031	383,808	446,675	440,737	422,706
13	376,468	364,208	341,443	325,024	310,059	293,735	270,794	281,560	386,271	446,344	441,263	422,513
14	376,042	364,029	340,863	324,455	309,726	293,087	270,019	283,358	388,184	445,947	441,921	421,612
15	374,948	363,669	340,167	323,886	309,282	292,818	269,297	285,056	390,040	445,616	442,251	420,840
16	374,644	362,951	339,530	323,147	308,893	292,225	268,730	286,440	393,143	445,418	442,185	419,812
17	373,976	362,115	339,009	322,580	308,505	291,794	268,369	287,720	396,508	445,220	442,646	418,849
18	373,976	361,219	338,373	321,843	308,062	291,203	267,701	288,736	399,573	444,625	443,107	417,824
19	373,976	360,682	337,853	321,390	307,675	290,666	266,879	290,666	403,154	444,097	443,107	417,184
20	374,219	359,908	337,391	320,597	307,232	290,022	266,110	293,465	406,876	443,569	442,910	416,608
21	374,219	359,253	336,930	319,919	306,956	289,110	265,393	297,582	410,552	442,844	442,382	415,712
22	374,158	358,301	336,296	319,355	306,514	288,094	265,188	302,222	413,798	442,251	441,921	414,818
23	374,340	357,589	335,720	318,791	306,127	287,133	265,188	307,066	416,736	441,526	441,000	413,861
24	374,887	356,639	335,374	317,945	305,741	286,227	265,341	310,837	419,427	441,197	440,211	413,351
25	374,887	355,632	334,856	317,495	305,466	285,269	266,058	313,570	421,869	440,868	439,554	413,224
26	374,948	354,567	334,454	316,877	305,245	284,206	266,161	316,034	424,060	440,540	438,963	412,905
27	374,765	353,621	333,880	316,259	304,364	283,146	266,622	318,283	426,516	439,817	438,504	412,269
28	374,826	352,795	333,420	315,866	303,375	282,776	266,981	321,786	428,719	439,094	437,848	411,124
29	374,948	351,911	332,789	315,473		281,930	266,879	325,195	431,057	438,307	436,866	410,235
30	374,583	351,146	332,503	315,193		281,085	266,673	329,244	433,467	437,652	435,884	409,283
31	374,340		331,987	314,801		280,505		334,339		437,390	434,838	
Min	373,976	351,146	331,987	314,801	303,375	280,505	265,188	267,033	338,546	436,997	434,838	409,283
Max	376,529	373,855	350,440	331,358	314,633	302,332	279,873	334,339	433,467	446,675	443,107	433,859
EOM	374,340	351,146	331,987	314,801	303,375	280,505	266,673	334,339	433,467	437,390	434,838	409,283



**Appendix A (Table 12 of 38)
Granby Reservoir, CO**

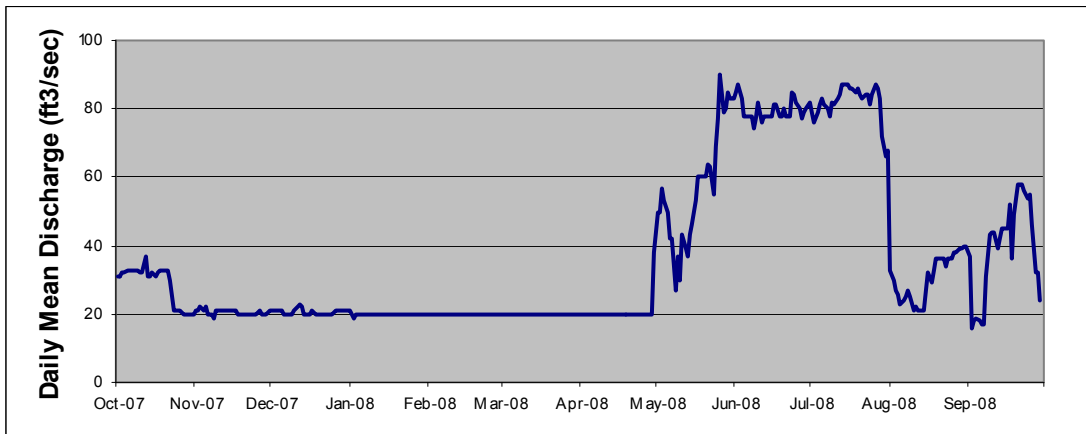
Location. --Lat 40°08'54", long 105°51'48", Grand County, Hydrologic Unit 14010001, on Granby Dam, 5.5 miles northeast of Granby, Colorado, on the Colorado River.

Gage.-- Water level recorder with satellite telemetry. Elevation of gage is 8300 from topographic map.

Remarks.--Reservoir is formed by an earth-fill dam and four earth-fill dikes. Construction completed in 1950. Impoundment began on 14-Sep-1949. Granby Reservoir provides west-slope storage for the Colorado-Big Thompson Project. Data was provided by personnel from the Northern Colorado Water Conservancy District. Releases were made through the outlet works valve. The stream gage directly below the dam is used to measure flows during winter. A USGS station further downstream is used to measure flows between spring and fall. Data was recorded from 01-Oct-2007 to 30-Sep-2008. Records are complete and fair. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	31	21	21	21	20	20	20	38	83	82	68	40
2	31	21	21	19	20	20	20	50	85	79	33	37
3	32	22	21	20	20	20	20	50	87	76	30	16
4	32	21	21	20	20	20	20	57	83	79	27	18
5	33	22	21	20	20	20	20	53	78	81	26	19
6	33	20	20	20	20	20	20	50	78	83	23	18
7	33	20	20	20	20	20	20	42	78	81	24	17
8	33	19	20	20	20	20	20	42	78	80	25	17
9	33	21	20	20	20	20	20	27	74	78	27	31
10	32	21	21	20	20	20	20	37	77	82	25	43
11	32	21	22	20	20	20	20	30	82	81	21	44
12	37	21	23	20	20	20	20	43	76	83	22	44
13	31	21	22	20	20	20	20	39	78	84	21	39
14	31	21	20	20	20	20	20	37	78	87	21	42
15	32	21	20	20	20	20	20	43	78	87	21	45
16	31	21	20	20	20	20	20	46	78	87	27	45
17	32	21	21	20	20	20	20	53	81	86	32	45
18	33	20	20	20	20	20	20	60	81	86	29	52
19	33	20	20	20	20	20	20	60	78	85	33	36
20	33	20	20	20	20	20	20	60	78	86	36	49
21	33	20	20	20	20	20	20	60	80	84	36	58
22	30	20	20	20	20	20	20	64	78	83	36	58
23	21	20	20	20	20	20	20	63	78	84	36	58
24	21	20	20	20	20	20	20	55	85	84	34	56
25	21	20	20	20	20	20	20	69	84	81	36	54
26	21	21	21	20	20	20	20	77	82	84	36	55
27	20	20	21	20	20	20	20	90	80	87	38	46
28	20	20	21	20	20	20	20	79	77	86	38	32
29	20	20	21	20		20	20	80	79	83	39	32
30	20	21	21	20		20	20	85	80	72	39	24
31	20		21	20		20		83		66	40	
Min	20	19	20	19	20	20	20	27	74	66	21	16
Max	37	22	23	21	20	20	20	90	87	87	68	58
Mean	29	21	21	20	20	20	20	56	80	82	32	39
ac-ft	1772	1222	1267	1228	1109	1228	1188	3410	4736	5043	1938	2317



Appendix A (Table 13 of 38)
Farr Pumping Plant, Granby Reservoir, CO

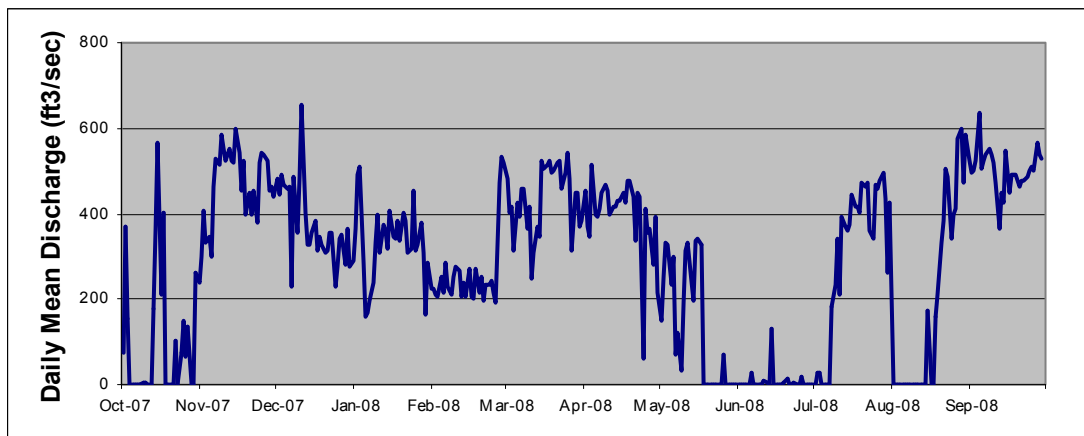
Location. --Lat 40°11'30", long 105°52'52", Grand County, Hydrologic Unit 14010001, at Farr Pumping Plant on the north end of Granby Reservoir, 8 miles northeast of Granby, Colorado, on the Colorado River.

Gage.-- Reading taken directly from the pumps, based on conduit pressure and Granby Reservoir's elevation. Elevation of the pumping plant is 8320 from topographic map.

Remarks.-- Water is pumped from Granby to the Granby Pump Canal which discharges into Shadow Mountain Reservoir. The operation keeps Shadow Mountain Reservoir/Grand Lake at a steady water surface level when transmountain diversions are taking place via Adams Tunnel. Data was provided by Farr Plant operators each morning. Data was collected from 01-Oct-2007 to 30-Sep-2008. Daily data provided by the Northern Colorado Water Conservancy District. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	76	297	484	363	224	519	385	217	0	0	427	525
2	368	406	446	493	212	481	455	152	0	0	0	497
3	153	332	491	509	204	405	371	252	0	26	0	500
4	0	344	466	286	251	415	344	331	0	27	0	524
5	0	301	457	161	217	315	517	330	0	0	0	638
6	0	465	463	170	283	427	397	234	0	0	0	504
7	0	530	229	194	230	391	391	299	28	0	0	523
8	0	513	488	239	209	458	414	72	0	0	0	537
9	5	586	358	332	252	458	449	121	0	184	0	550
10	5	553	488	396	274	366	467	35	0	234	0	537
11	0	524	656	311	265	417	454	191	0	340	0	521
12	0	552	404	374	206	247	399	312	11	211	0	473
13	179	526	329	360	240	310	417	334	3	394	0	366
14	367	521	329	318	204	369	415	240	0	369	0	449
15	566	598	358	408	271	345	431	195	131	362	0	427
16	211	545	386	347	208	525	431	338	0	375	171	548
17	401	454	312	343	203	504	451	339	0	443	0	448
18	0	522	345	383	270	515	424	326	0	416	0	491
19	0	399	327	335	214	525	477	0	0	415	159	493
20	0	449	311	402	255	496	477	0	4	403	209	491
21	0	399	312	382	194	501	438	0	14	472	333	462
22	105	456	356	309	232	521	336	0	0	464	383	476
23	0	378	355	317	232	523	449	0	0	472	503	478
24	76	519	229	456	245	459	442	0	4	359	485	489
25	152	543	277	315	217	497	60	0	0	339	340	502
26	67	537	343	329	191	545	410	0	0	470	398	509
27	135	526	351	377	474	480	356	72	18	461	413	501
28	0	453	280	307	535	316	365	0	0	479	573	564
29	0	462	367	163		450	280	0	0	498	597	538
30	262	442	278	283		451	394	0	0	437	475	530
31	238		290	224		372		0		262	586	
Min	0	297	229	161	191	247	60	0	0	0	0	366
Max	566	598	656	509	535	545	517	339	131	498	597	638
Mean	109	471	373	329	250	439	403	142	7	287	195	503
ac-ft	6665	27976	22891	20165	13880	26923	23944	8697	424	17639	11983	29873



Appendix A (Table 14 of 38)
Shadow Mountain/Grand Lake, CO

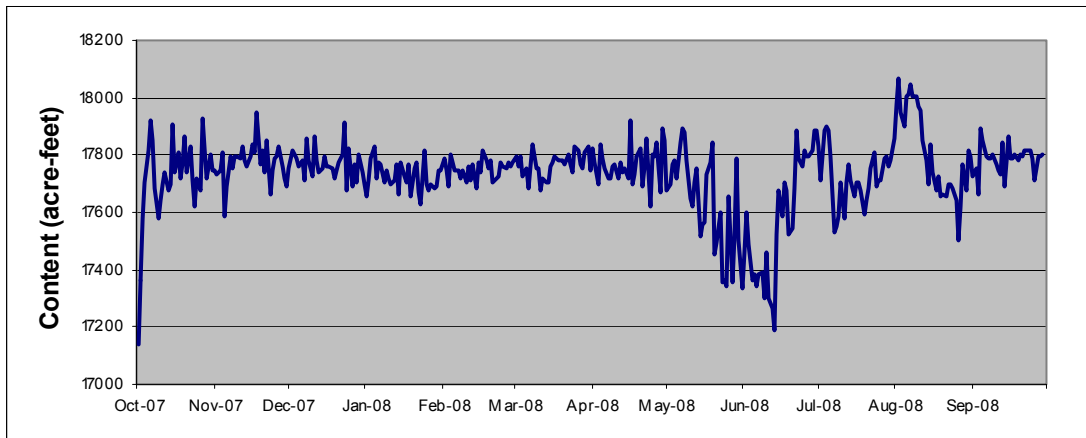
Location. --Lat 40°12'26", long 105°50'28", Grand County, Hydrologic Unit 14010001, on the Colorado River at the Shadow Mountain outlet works structure, 10 miles northeast of Granby, Colorado.

Gage.--Water-stage recorder with satellite telemetry. Elevation of gage is 8375 feet from topographic map.

Remarks.--Constructed between 1944 and 1946. Impoundment began in 1946. Active capacity between elevations 8,366 and 8,367 is 1,800 acre-feet. Grand Lake is used as forebay storage for Adams Tunnel. Recorder was operated from 01-Oct-2007 to 30-Sep-2008. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	17,141	17,745	17,756	17,659	17,787	17,777	17,746	17,850	17,332	17,889	17,855	17,798
2	17,362	17,734	17,816	17,711	17,745	17,793	17,825	17,679	17,468	17,828	17,980	17,727
3	17,578	17,745	17,803	17,787	17,694	17,761	17,774	17,697	17,598	17,713	18,068	17,751
4	17,702	17,808	17,787	17,828	17,800	17,798	17,696	17,767	17,490	17,884	17,950	17,663
5	17,818	17,583	17,761	17,720	17,745	17,724	17,838	17,780	17,361	17,899	17,897	17,890
6	17,922	17,689	17,780	17,772	17,745	17,756	17,787	17,716	17,384	17,884	18,002	17,853
7	17,849	17,798	17,712	17,768	17,745	17,687	17,756	17,845	17,345	17,797	18,015	17,798
8	17,687	17,756	17,858	17,706	17,718	17,761	17,722	17,891	17,384	17,530	18,047	17,785
9	17,581	17,793	17,780	17,747	17,750	17,840	17,717	17,881	17,392	17,550	18,002	17,785
10	17,641	17,798	17,727	17,721	17,707	17,751	17,759	17,782	17,300	17,588	18,002	17,803
11	17,697	17,785	17,866	17,696	17,763	17,751	17,764	17,646	17,463	17,707	17,967	17,767
12	17,738	17,830	17,780	17,711	17,713	17,674	17,722	17,623	17,300	17,577	17,957	17,747
13	17,674	17,780	17,737	17,769	17,767	17,719	17,774	17,706	17,263	17,706	17,852	17,732
14	17,699	17,761	17,756	17,661	17,684	17,706	17,741	17,751	17,185	17,767	17,778	17,841
15	17,904	17,798	17,798	17,772	17,777	17,702	17,751	17,517	17,521	17,711	17,700	17,694
16	17,741	17,840	17,758	17,729	17,740	17,759	17,722	17,557	17,679	17,656	17,836	17,863
17	17,808	17,808	17,761	17,706	17,813	17,777	17,924	17,562	17,588	17,706	17,743	17,785
18	17,720	17,952	17,751	17,767	17,782	17,795	17,701	17,732	17,702	17,706	17,680	17,787
19	17,775	17,768	17,721	17,653	17,753	17,782	17,732	17,772	17,674	17,674	17,727	17,805
20	17,862	17,818	17,747	17,753	17,782	17,782	17,793	17,845	17,521	17,590	17,653	17,782
21	17,738	17,740	17,772	17,777	17,702	17,782	17,826	17,451	17,545	17,641	17,664	17,805
22	17,831	17,850	17,805	17,671	17,721	17,769	17,692	17,495	17,681	17,686	17,654	17,792
23	17,710	17,666	17,911	17,629	17,727	17,800	17,761	17,601	17,884	17,754	17,696	17,818
24	17,618	17,747	17,679	17,813	17,772	17,764	17,858	17,356	17,787	17,809	17,697	17,813
25	17,718	17,785	17,820	17,697	17,763	17,741	17,624	17,364	17,760	17,694	17,681	17,813
26	17,674	17,798	17,692	17,679	17,753	17,827	17,803	17,345	17,815	17,709	17,643	17,790
27	17,931	17,831	17,767	17,697	17,772	17,816	17,798	17,653	17,792	17,714	17,505	17,713
28	17,820	17,758	17,707	17,684	17,759	17,767	17,845	17,353	17,797	17,785	17,623	17,795
29	17,718	17,721	17,803	17,694		17,751	17,669	17,519	17,815	17,793	17,764	17,795
30	17,800	17,691	17,740	17,745		17,806	17,895	17,786	17,884	17,761	17,679	17,805
31	17,745		17,697	17,745		17,833		17,505		17,780	17,813	
Min	17,141	17,583	17,679	17,629	17,684	17,674	17,624	17,345	17,185	17,530	17,505	17,663
Max	17,931	17,952	17,911	17,828	17,813	17,840	17,924	17,891	17,884	17,899	18,068	17,890
EOM	17,745	17,691	17,697	17,745	17,759	17,833	17,895	17,505	17,884	17,780	17,813	17,805



Appendix A (Table 15 of 38)
Alva B. Adams Tunnel at East Portal, near Estes Park, CO

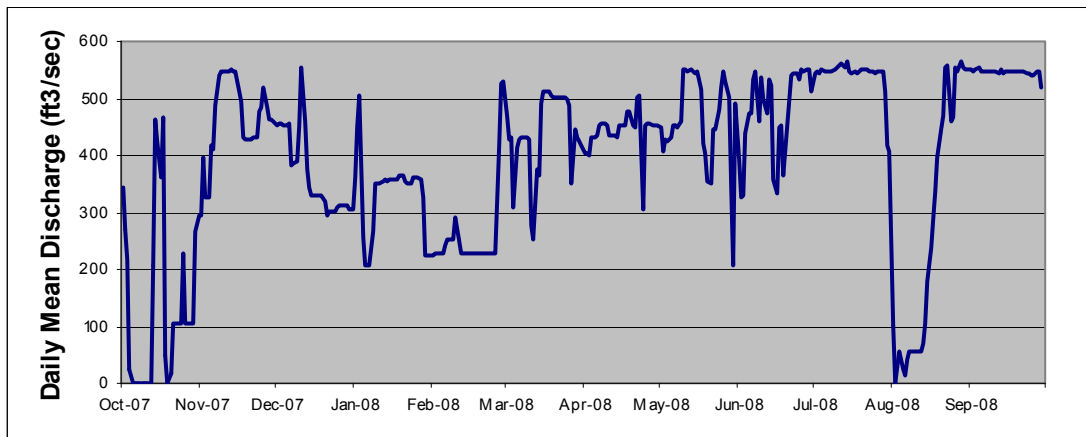
Location. --Lat 40°19'40", long 105°34'39", Larimer County, Hydrologic Unit 10190006, 4.5 miles southwest of Estes Park, Colorado.

Gage.-- Water-stage recorder with satellite telemetry at 15 foot Parshall flume. Elevation of gage is 8250 from topographic map.

Remarks.-- Constructed between 1940 and 1947. Tunnel is 13.1 miles long, and extends between Grand Lake and Estes Park. Its maximum capacity is 550 cubic feet per second. Recorder was operated from 01-Oct-2007 to 30-Sep-2008. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	345	294	453	363	226	529	418	453	491	514	407	552
2	269	398	455	450	229	467	404	448	388	544	101	550
3	219	328	456	506	229	429	404	407	327	548	0	549
4	25	327	454	255	229	430	401	428	330	544	28	551
5	0	416	453	206	229	309	432	426	440	550	56	553
6	0	410	455	206	241	413	433	432	474	549	26	549
7	0	488	384	206	252	428	434	454	474	546	13	548
8	0	540	386	266	252	430	453	451	535	547	42	548
9	0	547	390	350	252	431	457	449	548	546	55	547
10	0	548	451	351	291	431	455	461	460	551	56	546
11	0	549	554	350	250	429	454	551	537	553	56	547
12	0	549	459	356	228	278	435	550	497	557	55	546
13	208	550	376	357	228	252	434	549	473	560	56	545
14	462	548	343	356	227	375	434	552	535	556	71	551
15	426	547	331	357	228	366	433	547	523	564	107	545
16	362	513	329	357	229	490	451	545	358	548	178	548
17	465	496	331	358	228	511	453	547	335	544	237	548
18	49	431	330	358	229	512	451	516	449	546	287	549
19	0	427	330	364	229	513	477	420	451	545	337	548
20	17	428	320	364	228	504	478	405	364	546	396	548
21	104	427	295	356	228	502	454	354	452	552	446	548
22	105	432	301	352	228	502	450	351	496	551	471	548
23	105	431	303	352	228	502	503	447	541	551	554	547
24	104	478	302	361	228	503	504	447	543	548	557	545
25	227	484	309	360	228	502	306	481	543	547	459	543
26	104	519	312	360	228	500	453	520	534	544	466	542
27	105	484	312	359	422	488	456	549	550	546	553	540
28	105	464	313	326	528	352	456	530	547	548	549	546
29	105	462	312	226		444	453	503	550	546	565	547
30	265	460	307	224		433	454	341	552	513	554	518
31	293		307	225		423		206		416	551	
Min	0	294	295	206	226	252	306	206	327	416	0	518
Max	465	550	554	506	528	529	504	552	552	564	565	553
Mean	144	466	368	330	252	441	443	462	477	543	267	546
ac-ft	8849	27671	22598	20269	13963	27082	26294	28354	28308	33304	16412	32456



Appendix A (Table 16 of 38)
Marys Lake, CO

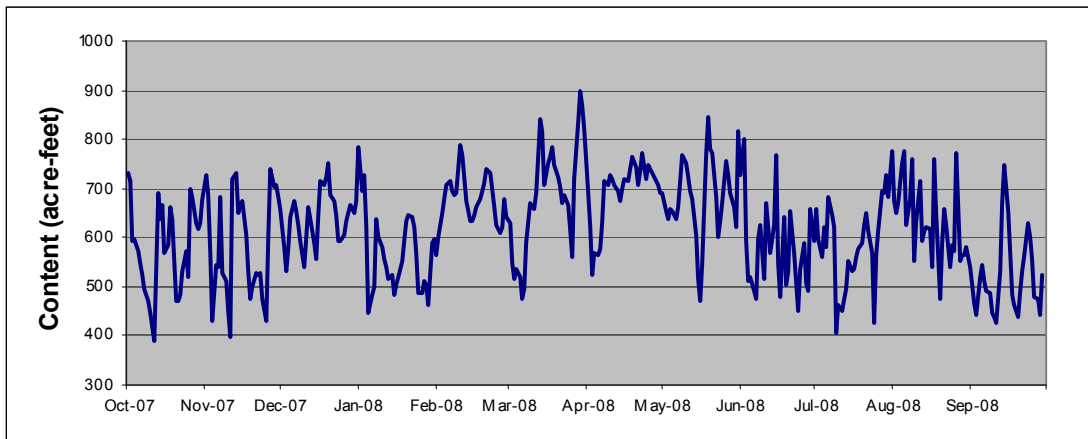
Location. --Lat 40°22'40", long 105°31'50", Larimer County, Hydrologic Unit 10190006, 2 miles southwest of Estes Park, Colorado.

Gage.-- Water-level recorder with satellite telemetry. Elevation of gage is 8060 feet from topographic map.

Remarks.-- Constructed between 1947 and 1949. Impoundment began in August, 1950. Active capacity between elevations 8,025 and 8,040 is 500 acre-feet. Used as a forebay storage for Estes Powerplant. The only measurable inflow into the reservoir comes from Adams Tunnel. Recorder was operated from 01-Oct-2007 to 30-Sep-2008. The gage does not record water surface levels below elevation 8,022.62 feet, content of 318 acre-feet. Record is complete and reliable. These are operational data which could be subject to further revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	731	728	657	784	564	640	822	691	818	591	777	541
2	714	687	581	693	603	628	689	689	727	659	674	505
3	592	567	532	726	651	550	627	654	800	599	652	465
4	598	431	578	620	677	516	522	638	593	560	672	444
5	572	545	643	448	708	537	567	657	510	620	753	521
6	548	540	673	483	715	518	566	656	518	580	776	544
7	522	683	655	500	694	473	576	639	490	681	626	510
8	496	529	626	638	685	496	629	663	477	647	680	492
9	471	512	595	602	689	587	714	715	597	621	760	486
10	445	451	541	579	788	670	709	767	627	407	554	447
11	417	398	603	557	766	663	726	753	515	463	635	438
12	390	721	662	541	724	660	718	724	669	450	715	426
13	690	732	637	517	675	692	706	693	620	476	593	534
14	638	652	589	522	634	841	696	677	570	495	613	671
15	668	666	557	485	632	818	676	607	624	554	623	746
16	569	675	646	505	645	709	697	516	770	532	619	655
17	584	606	715	521	661	752	718	471	550	536	541	571
18	663	531	706	552	679	764	716	544	480	560	759	482
19	638	474	725	594	695	784	741	769	641	576	645	461
20	470	498	751	635	711	749	765	845	503	590	475	438
21	471	528	688	644	740	722	742	779	534	625	588	489
22	485	522	673	641	730	701	709	774	654	648	657	530
23	530	528	644	623	697	671	737	683	570	613	626	561
24	573	477	594	570	664	686	773	600	506	570	540	628
25	520	431	592	488	626	667	720	632	450	428	585	602
26	698	598	606	488	611	618	746	672	538	563	571	556
27	681	739	635	510	620	561	739	754	587	614	773	479
28	629	703	651	502	677	720	732	728	509	695	552	474
29	617	708	666	464		834	717	691	492	692	563	443
30	631	682	651	589		897	706	664	658	727	566	525
31	680		675	597		869		623		683	581	
Min	390	398	532	448	564	473	522	471	450	407	475	426
Max	731	739	751	784	788	897	822	845	818	727	777	746
EOM	680	682	675	597	677	869	706	623	658	683	581	525



**Appendix A (Table 17 of 38)
Big Thompson River above Lake Estes, CO**

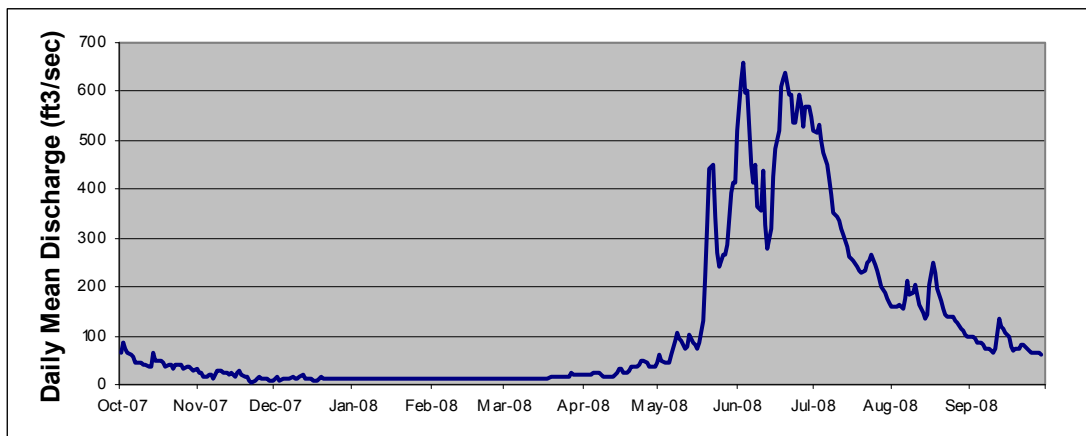
Location. --Lat 40°22'42", long 105°30'48", Larimer County, Hydrologic Unit 10190006, 600 feet downstream from bridge on state highways 7 and 36 in Estes Park, Colorado, downstream from Black Canyon Creek, and 0.3 miles northwest of Estes Powerplant.

Gage.-- Water-stage recorder with satellite telemetry. 15 foot Parshall flume with overflow weirs and supplemental outside gage. Datum of gage at 7492.5 feet.

Remarks.— Drainage area is 137 mi². Station consists of data collection platform as primary record with graphic chart recorder as backup. Recorder was operated from 01-Oct-2007 to 30-Sep-2008. The station is shutdown during winter, however the available data is reliable. This record contains operational data which could be subject to future revisions and changes. The official record for this station is published by the State of Colorado, Division of Water Resources.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	64	26	14	14	14	14	21	45	412	550	166	98
2	85	24	15	14	14	14	20	63	518	521	161	97
3	75	16	10	14	14	14	22	49	621	514	159	97
4	66	17	12	14	14	14	22	45	661	534	161	93
5	60	21	11	14	14	14	21	43	597	501	163	87
6	57	19	13	14	14	14	23	43	601	474	157	87
7	46	12	14	14	14	14	24	61	450	449	178	81
8	43	28	16	14	14	14	23	92	412	423	214	75
9	44	28	13	14	14	14	22	108	451	389	184	72
10	42	28	12	14	14	14	16	95	363	353	190	69
11	40	26	17	14	14	14	17	91	357	344	204	67
12	37	26	21	14	14	14	16	72	438	336	184	75
13	37	22	14	14	14	14	16	77	326	320	162	137
14	65	24	14	14	14	14	18	102	279	306	147	118
15	51	18	13	14	14	14	25	87	320	283	135	115
16	48	25	10	14	14	14	31	82	427	262	142	107
17	48	27	8	14	14	14	33	74	482	258	203	99
18	43	20	9	14	14	14	25	84	519	252	250	79
19	36	18	15	14	14	14	24	132	608	241	228	70
20	39	16	14	14	14	15	29	223	625	235	197	74
21	40	7	14	14	14	15	36	330	639	231	172	74
22	31	6	14	14	14	15	38	442	593	232	156	82
23	40	9	14	14	14	15	35	451	595	249	142	83
24	42	14	14	14	14	15	42	342	537	254	139	75
25	40	17	14	14	14	16	51	270	536	265	138	69
26	34	12	14	14	14	15	49	241	593	247	140	65
27	37	14	14	14	14	15	44	267	574	232	133	67
28	37	12	14	14	14	23	36	265	529	216	125	67
29	33	9	14	14		20	36	287	568	200	116	64
30	30	10	14	14		21	38	392	568	189	109	62
31	31		14	14		22		412		176	102	
Min	30	6	8	14	14	14	16	43	279	176	102	62
Max	85	28	21	14	14	23	51	451	661	550	250	137
Mean	46	18	14	14	14	15	28	173	507	324	163	84
ac-ft	2814	1091	830	859	776	937	1689	10627	30094	19871	10013	4960



**Appendix A (Table 18 of 38)
Olympus Dam, CO**

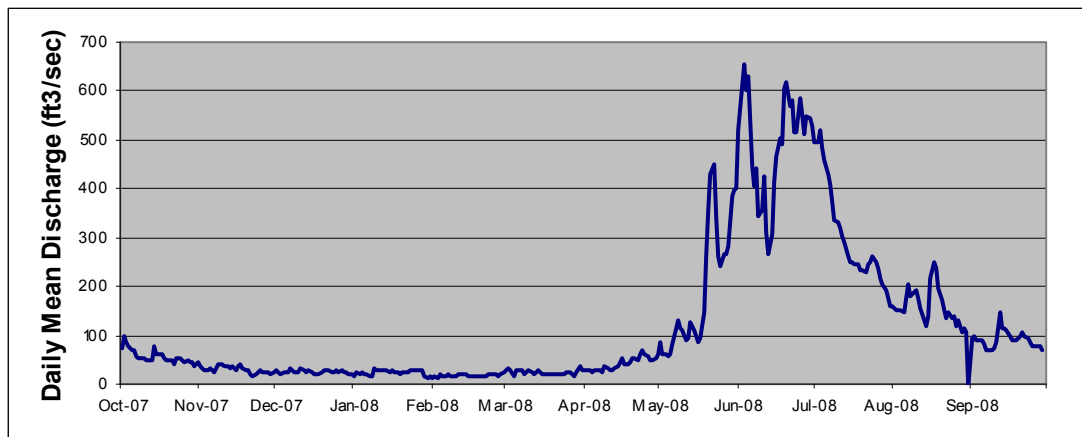
Location. --Lat 40°22'31", long 105°29'15", Larimer County, Hydrologic Unit 10190006, 1.5 miles east of Estes Park, Colorado, on the Big Thompson River.

Gage.—Water-stage recorders with satellite telemetry. Inflow computed daily based on the change in content from midnight to midnight at Marys Lake and Lake Estes, daily average releases from Olympus Dam, and daily average discharge at Olympus Tunnel and Adams Tunnel.

Remarks.— Olympus dam was constructed between 1947 and 1949. Impoundment began on November 1948. Total capacity at maximum water surface elevation of 7475.0 feet is 3,070 acre-feet. Recorders were operated from 01-Oct-2007 to 30-Sep-2008. Records are complete and reliable, but have not been revised. This record contains operational data which could be subject to future revisions and changes.

Inflow, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	75	37	28	15	14	23	29	61	403	530	158	-4
2	97	34	24	23	16	28	27	86	519	497	158	95
3	85	27	19	22	13	32	29	62	610	496	151	98
4	78	28	23	25	19	28	29	63	657	520	150	91
5	70	32	24	22	15	17	25	58	603	481	153	90
6	69	30	23	19	16	27	29	60	630	457	148	91
7	57	23	31	18	20	28	29	81	447	428	176	83
8	54	41	26	17	18	27	30	113	407	410	206	71
9	55	40	23	31	18	22	26	132	444	374	180	69
10	53	41	25	30	17	24	35	115	344	337	187	70
11	50	38	32	28	22	28	32	109	356	331	194	72
12	49	38	29	29	19	24	29	90	427	319	175	84
13	51	34	24	30	19	19	28	96	310	301	156	147
14	77	36	27	28	22	24	31	126	267	292	130	116
15	62	29	24	26	18	28	37	110	308	264	118	114
16	61	37	19	29	17	21	46	100	413	251	138	109
17	61	39	21	23	15	21	52	87	466	248	215	100
18	53	32	22	23	17	20	40	93	504	246	250	92
19	48	29	26	21	15	20	39	147	491	244	236	90
20	50	27	28	24	17	21	46	260	604	233	197	91
21	51	19	29	25	16	21	52	358	620	232	173	97
22	41	18	27	25	18	21	54	429	571	229	153	105
23	53	21	25	27	20	20	49	449	580	244	136	97
24	53	26	24	30	19	19	62	340	517	250	149	94
25	50	29	27	28	19	22	68	263	516	261	134	86
26	45	24	25	28	19	24	62	241	584	249	140	78
27	48	23	28	28	18	25	58	267	553	237	119	77
28	47	24	26	30	20	21	51	266	510	219	130	79
29	44	19	24	15		18	51	284	548	204	107	78
30	38	24	22	14		23	53	383	544	191	114	71
31	44		22	15		36		398		175	106	
Min	38	18	19	14	13	17	25	58	267	175	106	-4
Max	97	41	32	31	22	36	68	449	657	530	250	147
Mean	57	30	25	24	18	24	41	185	492	315	159	88
ac-ft	3503	1780	1538	1481	982	1449	2431	11339	29211	19305	9775	5209



**Appendix A (Table 19 of 38)
Olympus Dam, CO**

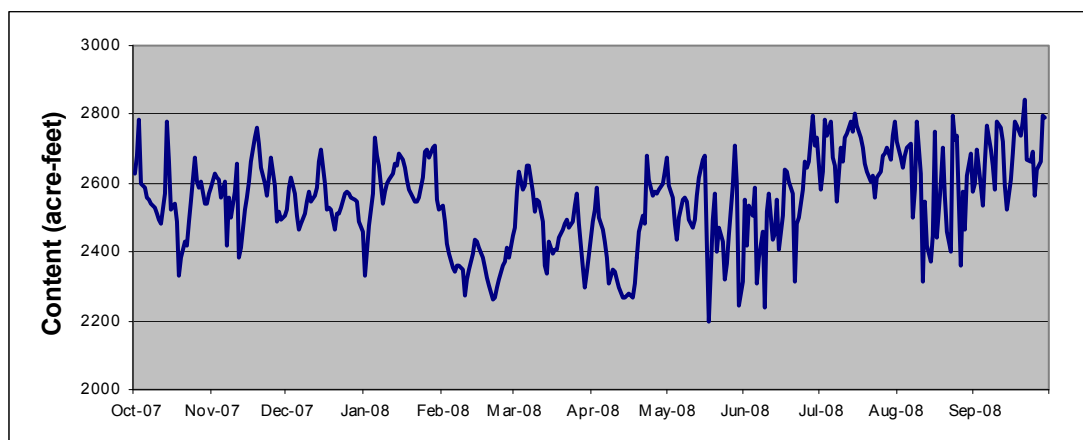
Location. --Lat 40°22'31", long 105°29'19", Larimer County, Hydrologic Unit 10190006, 1.5 miles east of Estes Park, Colorado, on the Big Thompson River.

Gage.-- Water-level recorder with satellite telemetry. Elevation of gage is 7490 feet from topographic map.

Remarks.-- Constructed between 1947 and 1949. Impoundment began in November, 1948. Active capacity between elevations 7,450.25 and 7,474.00 is 2,476 acre-feet. Used as afterbay storage for Estes Powerplant and forebay for Olympus Tunnel. Recorder was operated from 01-Oct-2007 to 30-Sep-2008. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2,626	2,589	2,524	2,334	2,532	2,449	2,389	2,631	2,312	2,735	2,778	2,574
2	2,682	2,629	2,587	2,402	2,486	2,470	2,488	2,677	2,554	2,584	2,723	2,599
3	2,785	2,614	2,619	2,478	2,424	2,574	2,524	2,594	2,421	2,633	2,675	2,697
4	2,599	2,613	2,572	2,572	2,394	2,631	2,587	2,556	2,532	2,787	2,648	2,592
5	2,589	2,556	2,508	2,730	2,357	2,582	2,501	2,481	2,508	2,739	2,680	2,532
6	2,559	2,607	2,468	2,679	2,342	2,592	2,468	2,436	2,587	2,777	2,702	2,656
7	2,552	2,421	2,481	2,650	2,360	2,653	2,428	2,501	2,308	2,677	2,713	2,770
8	2,541	2,556	2,513	2,542	2,362	2,651	2,382	2,552	2,384	2,650	2,501	2,696
9	2,529	2,498	2,549	2,576	2,346	2,577	2,309	2,557	2,460	2,546	2,584	2,650
10	2,514	2,574	2,577	2,597	2,276	2,519	2,346	2,547	2,240	2,704	2,778	2,584
11	2,496	2,658	2,546	2,611	2,317	2,551	2,344	2,493	2,516	2,660	2,626	2,778
12	2,485	2,384	2,562	2,629	2,350	2,544	2,319	2,471	2,571	2,733	2,314	2,764
13	2,567	2,410	2,589	2,655	2,395	2,488	2,295	2,493	2,434	2,747	2,547	2,723
14	2,778	2,526	2,663	2,653	2,437	2,360	2,270	2,562	2,454	2,778	2,416	2,592
15	2,663	2,559	2,697	2,685	2,432	2,338	2,267	2,616	2,551	2,752	2,371	2,522
16	2,524	2,607	2,601	2,667	2,411	2,429	2,271	2,668	2,405	2,804	2,445	2,611
17	2,542	2,663	2,524	2,648	2,384	2,398	2,278	2,680	2,503	2,770	2,751	2,684
18	2,491	2,735	2,529	2,613	2,355	2,405	2,265	2,419	2,638	2,732	2,439	2,777
19	2,330	2,764	2,526	2,584	2,328	2,408	2,309	2,198	2,634	2,706	2,596	2,770
20	2,382	2,716	2,465	2,559	2,304	2,442	2,384	2,493	2,602	2,655	2,706	2,739
21	2,428	2,643	2,509	2,549	2,263	2,465	2,460	2,569	2,569	2,631	2,566	2,777
22	2,416	2,599	2,511	2,544	2,267	2,480	2,504	2,400	2,312	2,607	2,462	2,843
23	2,488	2,564	2,531	2,557	2,296	2,496	2,485	2,470	2,483	2,621	2,402	2,670
24	2,547	2,619	2,569	2,618	2,322	2,471	2,682	2,429	2,498	2,561	2,796	2,662
25	2,677	2,675	2,577	2,692	2,358	2,488	2,613	2,320	2,581	2,616	2,726	2,691
26	2,606	2,594	2,572	2,696	2,370	2,537	2,562	2,368	2,665	2,634	2,737	2,566
27	2,586	2,488	2,557	2,677	2,415	2,571	2,574	2,447	2,646	2,680	2,358	2,640
28	2,604	2,519	2,554	2,704	2,386	2,480	2,571	2,591	2,660	2,687	2,574	2,662
29	2,542	2,493	2,549	2,708		2,352	2,582	2,711	2,799	2,702	2,468	2,797
30	2,541	2,503	2,490	2,551		2,298	2,597	2,597	2,708	2,667	2,623	2,792
31	2,571		2,460	2,522		2,342		2,246		2,737	2,684	
Min	2,330	2,384	2,460	2,334	2,263	2,298	2,265	2,198	2,240	2,546	2,314	2,522
Max	2,785	2,764	2,697	2,730	2,532	2,653	2,682	2,711	2,799	2,804	2,796	2,843
EOM	2,571	2,503	2,460	2,522	2,386	2,342	2,597	2,246	2,708	2,737	2,684	2,792



Appendix A (Table 20 of 38)
Big Thompson River below Olympus Dam, CO

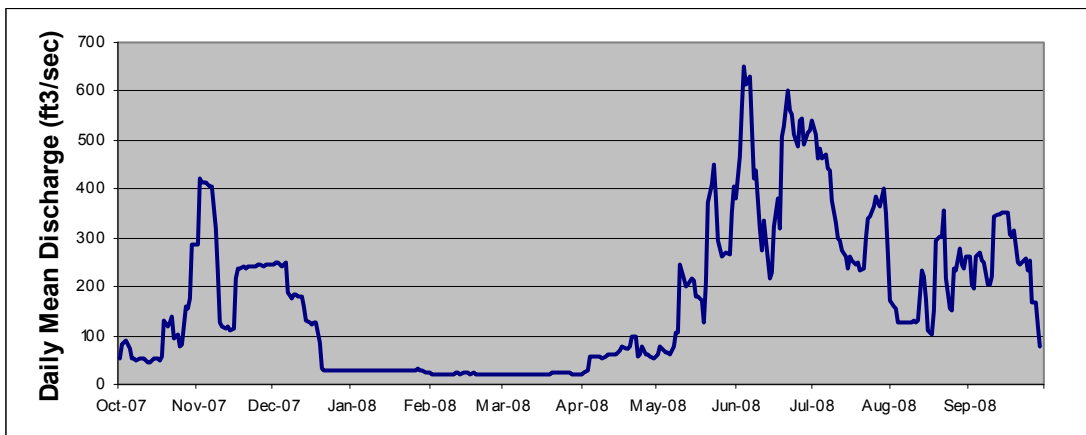
Location. --Lat 40°22'35", long 105°29'06", Larimer County, Hydrologic Unit 10190006, 600 feet downstream from Olympus Dam and 100 feet upstream of Dry Gulch, 2.0 miles east in Estes Park.

Gage.-- Water-stage recorder with satellite telemetry. 15 foot Parshall flume with overflow weirs in a concrete shelter with a supplemental outside gage. Datum of gage at 7492.50 feet.

Remarks.— Drainage area is 155 mi². Area at site used between 29-Jan-1934 and 21-Mar-1951 was 162 mi². Station consists of data collection platform as primary record with graphic chart recorder as backup. Recorder was operated from 01-Oct-2007 to 30-Sep-2008. Record is complete and reliable. This record contains operational data which could be subject to future revisions and changes. The official record for this station is published by the State of Colorado, Division of Water Resources.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	54	287	245	28	24	21	22	56	406	519	271	261
2	81	422	250	28	21	21	22	61	382	539	171	262
3	87	412	251	27	21	21	23	79	465	511	160	204
4	91	413	243	28	21	22	30	70	568	463	156	198
5	74	409	244	29	20	22	58	64	650	481	127	262
6	52	406	248	29	21	21	59	66	615	462	126	269
7	52	405	189	29	22	22	59	61	629	471	125	254
8	51	318	177	29	22	22	59	77	527	441	126	251
9	53	224	183	28	22	21	57	105	421	438	128	205
10	53	125	186	28	22	21	52	107	439	376	127	204
11	52	120	181	28	24	21	58	246	318	332	130	223
12	47	116	182	29	23	21	60	219	276	299	128	342
13	47	117	160	29	22	21	60	202	335	294	130	348
14	48	112	130	29	23	21	60	203	294	276	235	349
15	54	115	126	29	23	20	61	217	219	264	223	351
16	52	215	124	30	23	20	64	214	230	236	177	353
17	51	237	127	30	22	20	71	181	324	260	109	351
18	58	238	127	30	23	20	79	182	379	255	104	309
19	129	240	84	29	22	20	72	173	321	247	153	301
20	120	239	32	29	22	22	73	128	507	251	296	315
21	127	240	27	29	22	23	79	210	530	234	304	251
22	140	240	28	29	21	24	97	371	601	236	304	247
23	95	242	28	29	21	23	98	409	562	298	358	250
24	101	242	28	30	21	24	58	449	554	340	217	257
25	76	246	28	30	21	24	63	383	511	344	156	235
26	83	246	27	30	22	24	79	294	487	366	153	255
27	160	243	29	31	21	24	62	263	542	386	239	167
28	157	244	29	30	21	24	62	265	544	373	232	166
29	174	245	29	30		22	56	271	491	364	279	118
30	285	245	28	25		22	55	266	514	403	247	77
31	287		29	23		22		353		352	239	
Min	47	112	27	23	20	20	22	56	219	234	104	77
Max	287	422	251	31	24	24	98	449	650	539	358	353
Mean	96	253	123	29	22	22	60	201	455	358	191	255
ac-ft	5922	15054	7522	1764	1214	1338	3580	12365	27009	22000	11741	15117



**Appendix A (Table 21 of 38)
Olympus Tunnel near Estes Park, CO**

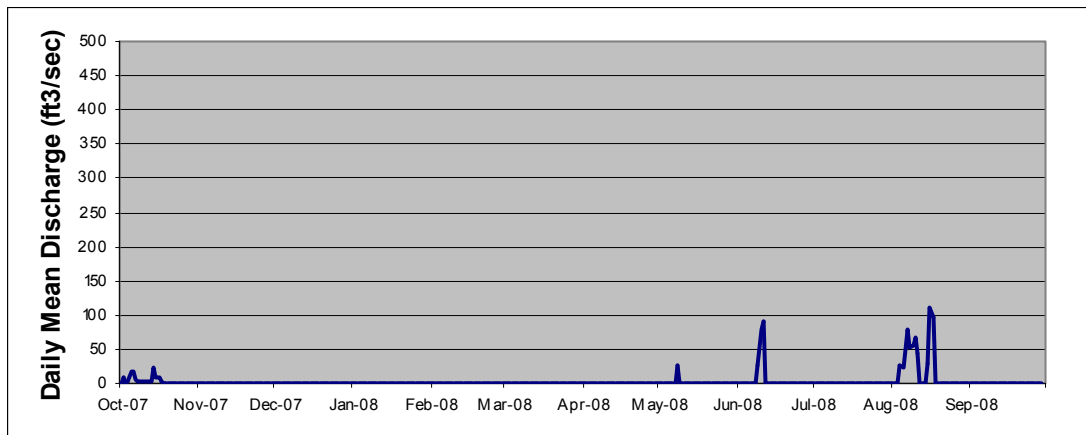
Location. --Lat 40°22'24", long 105°29'00", Larimer County, Hydrologic Unit 10190006, southeast of Estes Park, Colorado.

Gage.-- Water-stage recorder and satellite telemetry. Elevation of gage is 7460 from topographic map.

Remarks.— Constructed between 1949 and 1952. The tunnel is 7.2 miles long, between Estes Park and the Pole Hill Canal. Its diameter is 9.75 feet and maximum capacity is 550 cubic feet per second. The hydropower diversion operation, also known as the skim operation, diverts water from the Big Thompson River through Olympus Tunnel for power generation at three power plants, before returning it to the Big Thompson River near the canyon mouth. The Skim daily value is determined based on the data from the gage in the system. Period of record includes from 01-Oct-2007 through 30-Sep-2008. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Hydropower Diversion (Skim), Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0	0
2	10	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	4	0	0	0	0	0	0	0	0	0	0	0
5	19	0	0	0	0	0	0	0	0	0	27	0
6	18	0	0	0	0	0	0	0	0	0	23	0
7	7	0	0	0	0	0	0	0	0	0	50	0
8	2	0	0	0	0	0	0	0	0	0	78	0
9	3	0	0	0	0	0	0	25	0	0	53	0
10	2	0	0	0	0	0	0	0	26	0	57	0
11	4	0	0	0	0	0	0	0	80	0	66	0
12	3	0	0	0	0	0	0	0	92	0	45	0
13	3	0	0	0	0	0	0	0	0	0	0	0
14	23	0	0	0	0	0	0	0	0	0	0	0
15	10	0	0	0	0	0	0	0	0	0	0	0
16	10	0	0	0	0	0	0	0	0	0	29	0
17	3	0	0	0	0	0	0	0	0	0	111	0
18	0	0	0	0	0	0	0	0	0	0	97	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	23	0	0	0	0	0	0	25	92	0	111	0
Mean	4	0	0	0	0	0	0	1	7	0	21	0
ac-ft	240	0	0	0	0	0	0	50	392	0	1259	0



**Appendix A (Table 22 of 38)
Olympus Tunnel, CO**

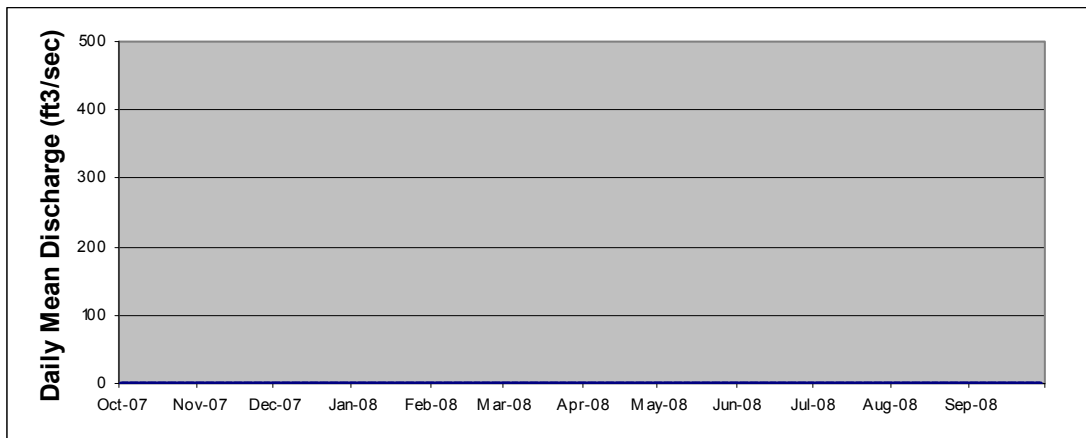
Location. --Lat 40°22'24", long 105°29'00", Larimer County, Hydrologic Unit 10190006, southeast of Estes Park, Colorado.

Gage.-- Water-stage recorder and satellite telemetry. Elevation of gage is 7460 from topographic map.

Remarks.— Constructed between 1949 and 1952. The tunnel is 7.2 miles long, between Estes Park and the Pole Hill Canal. Its diameter is 9.75 feet and maximum capacity is 550 cubic feet per second. The right to divert native run-off is determined by the State of Colorado. Period of record from 01-Oct-2007 through 30-Sep-2008. Record is complete and reliable.

Priority Diversion Flow, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	0	0	0	0	0	0	0	0	0	0	0	0
Mean	0	0	0	0	0	0	0	0	0	0	0	0
ac-ft	0	0	0	0	0	0	0	0	0	0	0	0



**Appendix A (Table 23 of 38)
Olympus Tunnel, CO**

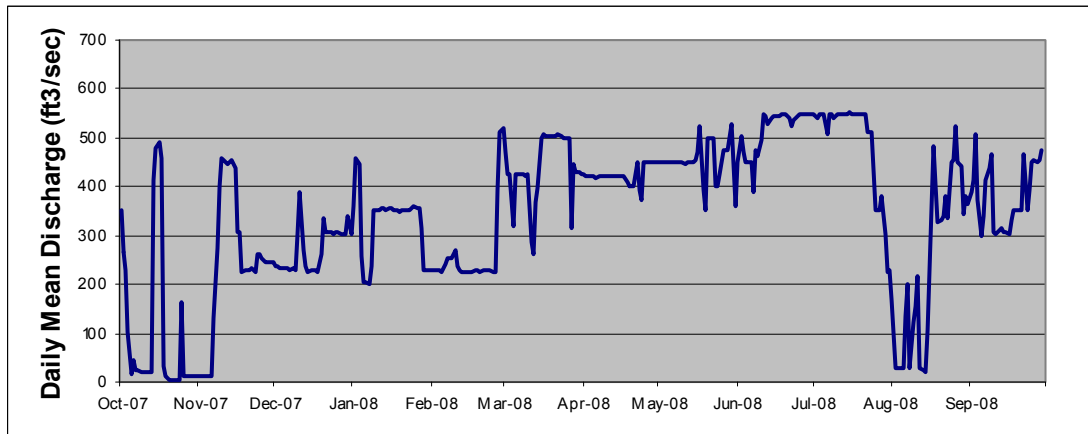
Location. --Lat 40°22'24", long 105°29'00", Larimer County, Hydrologic Unit 10190006, southeast of Estes Park, Colorado, on the Big Thompson River.

Gage.-- Water-stage recorder with satellite telemetry. Elevation of gage is 7460 from topographic map.

Remarks.— Constructed between 1949 and 1952. The tunnel is 7.2 miles long, between Estes Park and the Pole Hill Canal. Its diameter is 9.75 feet and maximum capacity is 550 cubic feet per second. Recorder was operated from 01-Oct-2007 to 30-Sep-2008. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	351	12	238	359	228	518	425	450	359	549	228	363
2	267	12	236	457	228	470	426	452	451	548	168	390
3	228	12	233	447	228	427	423	450	504	542	27	415
4	103	12	235	258	229	425	421	449	469	547	27	508
5	15	12	233	206	227	318	420	449	450	547	27	374
6	45	12	235	204	240	424	420	450	450	548	27	299
7	23	129	229	201	252	426	419	451	449	506	135	338
8	23	274	234	239	252	425	421	451	387	549	202	415
9	22	402	228	354	254	424	420	449	476	550	27	438
10	22	458	303	354	272	422	422	449	464	542	123	466
11	22	453	390	354	239	424	421	449	497	548	157	305
12	22	448	269	355	229	286	421	448	548	549	219	302
13	22	450	239	357	227	262	420	450	545	549	28	313
14	413	455	227	354	226	368	423	451	528	549	23	316
15	478	439	228	357	227	397	421	450	542	549	21	307
16	491	307	228	355	227	500	421	453	546	551	105	306
17	460	305	229	353	227	506	420	472	544	550	231	304
18	31	227	227	353	229	503	420	523	546	547	482	331
19	13	230	264	350	228	502	410	394	547	549	400	352
20	6	228	334	351	227	504	402	354	550	549	328	352
21	6	228	307	353	228	502	401	499	548	547	330	351
22	6	235	307	352	228	502	403	498	540	547	339	354
23	6	225	305	353	229	506	451	499	522	510	379	466
24	6	260	304	357	230	503	393	401	536	512	336	354
25	164	262	305	362	227	501	373	401	539	510	451	394
26	14	254	306	356	227	500	450	424	549	353	456	452
27	13	247	304	355	392	501	451	474	550	351	523	453
28	13	247	304	317	513	315	451	473	549	352	451	452
29	13	247	302	228		447	451	476	550	382	442	456
30	13	247	338	229		430	451	530	549	303	343	475
31	12		303	228		429		448		227	381	
Min	6	12	227	201	226	262	373	354	359	227	21	299
Max	491	458	390	457	513	518	451	530	550	551	523	508
Mean	107	244	272	326	249	441	422	454	509	500	239	380
ac-ft	6580	14511	16680	20014	13801	27061	25089	27853	30262	30714	14684	22574



Appendix A (Table 24 of 38)
Pinewood Reservoir near Loveland, Colorado , CO

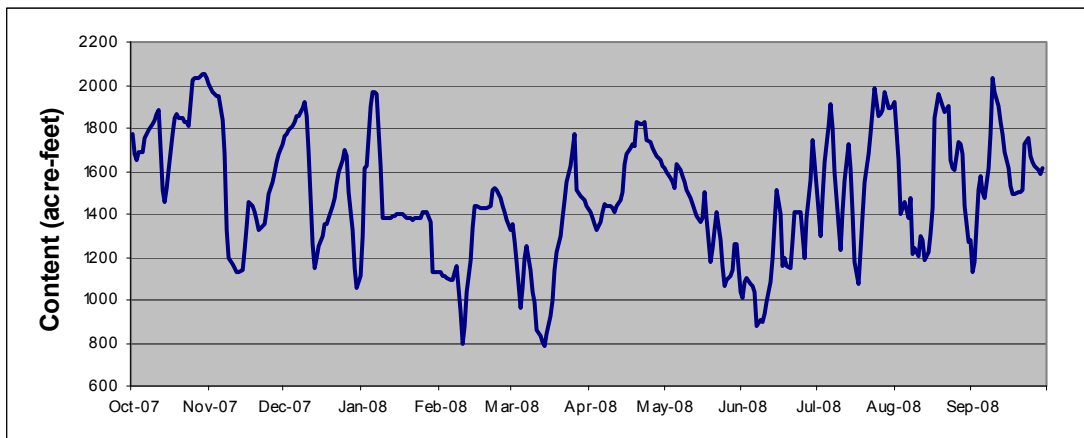
Location. --Lat 40°22', long 105°17.9', Larimer County, Hydrologic Unit 10190006, 10 miles southwest of Loveland, Colorado.

Gage.-- Water-level recorder with satellite telemetry. Elevation of gage is 6,600 feet from topographic map.

Remarks.-- Constructed between 1951 and 1952. Impoundment began in January 4, 1954. Active capacity between elevations 6,550.00 and 6,580.00 is 1,570 acre-feet. Used as the forebay storage for Flatiron Powerplant. Recorder was operated from 01-Oct-2007 to 30-Sep-2008. Record is complete and reliable. The gage is capable of measuring the water surface elevation down to 6556.30 feet, a content of 629 acre-feet. This record contains operational data which could be subject to future revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1,776	2,009	1,759	1,302	1,126	1,329	1,441	1,625	1,041	1,642	1,900	1,282
2	1,675	1,972	1,776	1,617	1,115	1,349	1,412	1,617	1,008	1,419	1,918	1,132
3	1,650	1,954	1,794	1,625	1,109	1,269	1,384	1,593	1,086	1,302	1,650	1,174
4	1,691	1,945	1,811	1,900	1,103	1,181	1,356	1,570	1,103	1,478	1,398	1,515
5	1,691	1,945	1,829	1,972	1,091	965	1,322	1,546	1,074	1,642	1,427	1,578
6	1,751	1,838	1,855	1,972	1,091	1,057	1,363	1,523	1,063	1,811	1,456	1,500
7	1,776	1,683	1,855	1,954	1,126	1,199	1,405	1,634	1,035	1,909	1,384	1,478
8	1,794	1,329	1,891	1,625	1,156	1,250	1,448	1,609	878	1,802	1,470	1,617
9	1,820	1,193	1,918	1,384	944	1,144	1,441	1,578	908	1,593	1,218	1,776
10	1,838	1,168	1,855	1,384	792	1,035	1,434	1,546	898	1,356	1,243	2,037
11	1,864	1,150	1,691	1,384	878	992	1,427	1,515	934	1,237	1,205	1,972
12	1,882	1,126	1,256	1,384	1,035	863	1,412	1,478	992	1,405	1,302	1,900
13	1,515	1,126	1,150	1,391	1,187	834	1,434	1,448	1,080	1,562	1,282	1,829
14	1,456	1,138	1,199	1,391	1,336	801	1,463	1,419	1,199	1,725	1,187	1,776
15	1,523	1,237	1,250	1,398	1,441	783	1,500	1,391	1,356	1,617	1,224	1,691
16	1,609	1,343	1,296	1,398	1,434	839	1,634	1,363	1,515	1,398	1,309	1,617
17	1,776	1,456	1,349	1,398	1,427	923	1,675	1,384	1,398	1,174	1,427	1,531
18	1,846	1,434	1,356	1,391	1,427	1,002	1,708	1,500	1,156	1,074	1,846	1,493
19	1,864	1,412	1,377	1,384	1,427	1,144	1,725	1,384	1,193	1,237	1,954	1,493
20	1,846	1,370	1,434	1,377	1,427	1,224	1,717	1,174	1,156	1,391	1,927	1,500
21	1,846	1,322	1,478	1,370	1,434	1,302	1,829	1,243	1,150	1,546	1,900	1,500
22	1,829	1,343	1,538	1,377	1,515	1,384	1,820	1,322	1,282	1,675	1,873	1,515
23	1,829	1,356	1,593	1,377	1,523	1,463	1,820	1,405	1,412	1,776	1,900	1,725
24	1,811	1,419	1,650	1,377	1,508	1,546	1,829	1,282	1,405	1,882	1,650	1,751
25	2,019	1,493	1,700	1,405	1,470	1,625	1,742	1,156	1,405	1,982	1,617	1,666
26	2,028	1,546	1,666	1,405	1,441	1,700	1,734	1,068	1,309	1,855	1,609	1,642
27	2,037	1,593	1,500	1,412	1,405	1,776	1,708	1,091	1,199	1,864	1,734	1,625
28	2,037	1,642	1,329	1,363	1,370	1,508	1,691	1,115	1,384	1,882	1,725	1,601
29	2,047	1,683	1,150	1,132		1,485	1,666	1,138	1,562	1,963	1,675	1,585
30	2,047	1,725	1,057	1,126		1,470	1,650	1,263	1,742	1,891	1,441	1,617
31	2,037		1,109	1,126		1,463		1,263		1,891	1,269	
Min	1,456	1,126	1,057	1,126	792	783	1,322	1,068	878	1,074	1,187	1,132
Max	2,047	2,009	1,918	1,972	1,523	1,776	1,829	1,634	1,742	1,982	1,954	2,037
EOM	2,037	1,725	1,109	1,126	1,370	1,463	1,650	1,263	1,742	1,891	1,269	1,617



**Appendix A (Table 25 of 38)
Flatiron Reservoir, CO**

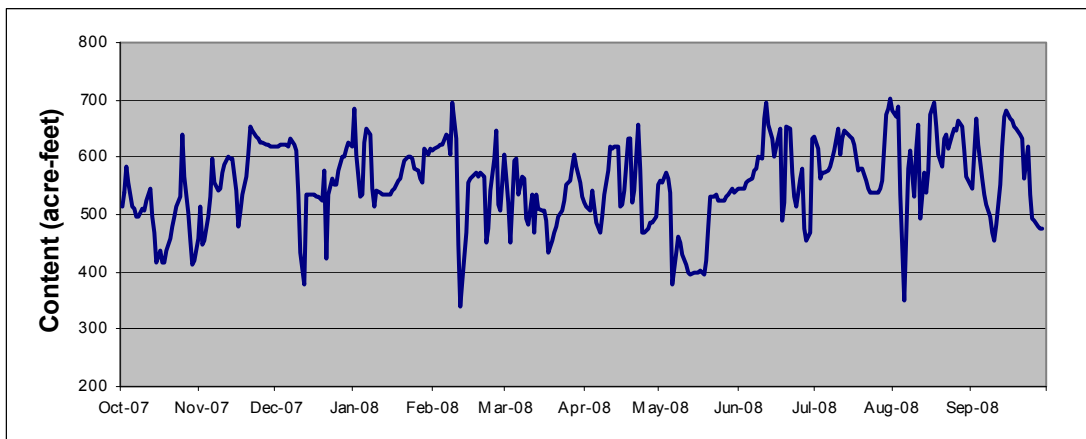
Location. --Lat 40°22.1', long 105°13.3', Larimer County, Hydrologic Unit 10190006, 8 miles southwest of Loveland, Colorado.

Gage.-- Water-level recorder with satellite telemetry. Elevation of gage is 5,600 feet from topographic map.

Remarks.-- Constructed between 1951 and 1953. Impoundment began in January, 1954. Active capacity between elevations 5,462.00 and 5,472.80 is 436 acre-feet. Used as the afterbay storage for Flatiron Powerplant. Recorder was operated from 01-Oct-2007 to 30-Sep-2008. Record is complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	514	514	619	685	610	606	530	551	542	632	703	559
2	538	447	619	606	614	563	522	559	546	636	681	546
3	584	455	623	530	619	522	514	555	546	614	672	606
4	555	498	623	534	623	451	506	572	546	563	690	667
5	514	530	623	627	623	593	542	563	555	572	534	623
6	510	597	619	649	640	597	514	538	559	572	350	563
7	498	555	632	640	636	534	486	378	563	576	463	534
8	498	542	623	546	606	567	467	432	576	584	580	518
9	510	546	610	514	694	563	498	463	580	597	610	498
10	506	572	534	542	632	494	534	451	601	610	530	470
11	526	588	432	538	447	482	576	429	597	649	614	455
12	546	601	378	534	340	534	619	414	667	606	658	482
13	498	597	534	534	385	470	614	400	694	632	494	551
14	467	597	534	534	467	534	619	396	658	645	572	619
15	418	542	534	534	555	510	619	400	632	640	538	672
16	436	478	534	542	563	506	514	400	601	636	576	681
17	418	502	530	546	567	506	518	400	619	632	676	667
18	418	534	530	559	572	490	542	403	649	623	694	663
19	436	567	526	563	567	432	632	396	490	576	654	654
20	459	606	576	580	572	455	632	421	522	580	606	649
21	478	654	425	593	567	467	522	478	654	580	584	640
22	498	645	534	601	451	478	542	530	649	559	632	632
23	514	636	563	601	474	498	658	530	572	546	640	563
24	530	632	551	597	542	506	576	534	530	538	614	619
25	640	627	551	580	597	526	470	526	514	538	640	534
26	567	627	576	576	645	551	467	526	563	538	649	494
27	502	623	601	563	518	559	474	526	580	538	645	490
28	455	623	601	555	506	584	486	530	474	546	663	478
29	414	619	614	614		606	486	534	455	559	654	474
30	421	619	627	606		584	498	546	467	676	610	474
31	459		619	614		555		538		685	567	
Min	414	447	378	514	340	432	467	378	455	538	350	455
Max	640	654	632	685	694	606	658	572	694	685	703	681
EOM	459	619	619	614	506	555	498	538	467	685	567	474



**Appendix A (Table 26 of 38)
Flatiron Powerplant Unit #3 Pump, CO**

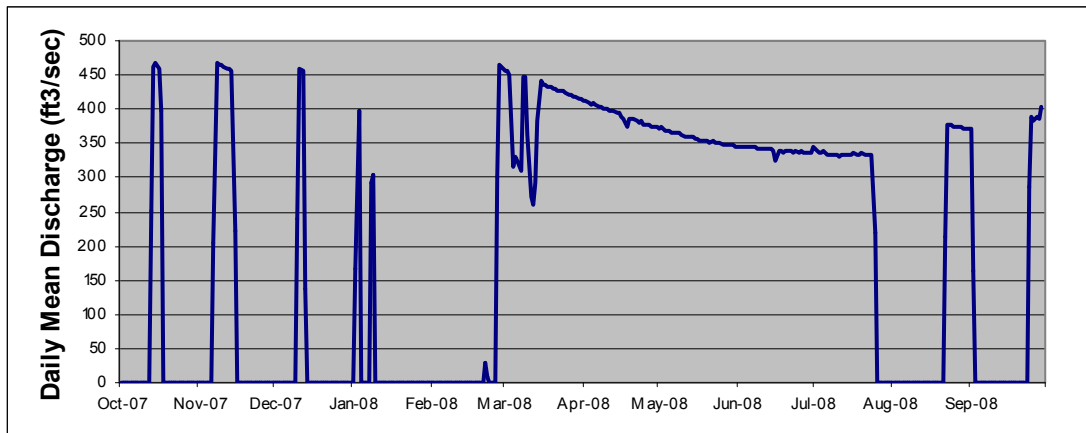
Location. --Lat 40°21'53", long 105°14'09", Larimer County, Hydrologic Unit 10190006, 9 miles west of Loveland, Colorado

Gage.-- There is no flow meter or gage in place. Flow is estimated by converting Megawatt-hours to cubic feet per second from calibrated tables.

Remarks.-- Constructed between 1951 and 1953. The Powerplant consists of three generating units. Unit #3 can be used to pump water from Flatiron Reservoir to Carter Lake. The maximum capacity is approximately 425 cubic feet per second, but the efficiency varies according to the water surface levels at Carter Lake and Flatiron Reservoir. Discharges are obtained by converting the electric energy needed to pump into flow by using rating tables. Record is complete and fair but it has not been revised. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	460	414	373	346	337	0	372
2	0	0	0	166	0	456	413	372	345	346	0	372
3	0	0	0	397	0	456	412	373	345	338	0	163
4	0	0	0	0	0	451	411	369	345	335	0	0
5	0	0	0	0	0	314	408	370	345	336	0	0
6	0	0	0	0	0	331	408	369	345	341	0	0
7	0	205	0	0	0	325	405	366	344	334	0	0
8	0	469	0	292	0	310	402	365	346	334	0	0
9	0	466	0	305	0	449	403	364	344	334	0	0
10	0	466	239	0	0	448	402	365	343	333	0	0
11	0	462	460	0	0	364	401	363	343	335	0	0
12	0	460	456	0	0	271	397	361	343	331	0	0
13	251	459	139	0	0	261	398	360	342	333	0	0
14	461	457	0	0	0	292	397	359	342	335	0	0
15	468	221	0	0	0	384	394	358	342	333	0	0
16	458	0	0	0	0	440	395	356	340	335	0	0
17	399	0	0	0	0	437	390	357	325	333	0	0
18	0	0	0	0	0	435	386	355	339	335	0	0
19	0	0	0	0	0	434	374	354	339	333	0	0
20	0	0	0	0	0	433	387	353	337	334	0	0
21	0	0	0	0	0	431	386	353	339	335	0	0
22	0	0	0	0	29	430	387	352	340	334	0	0
23	0	0	0	0	10	426	384	353	339	334	215	0
24	0	0	0	0	0	427	381	351	337	334	376	0
25	0	0	0	0	0	427	382	352	339	334	377	285
26	0	0	0	0	0	424	378	350	337	220	375	388
27	0	0	0	0	301	421	379	349	339	0	376	384
28	0	0	0	0	464	420	376	349	335	0	374	388
29	0	0	0	0		418	375	348	337	0	373	386
30	0	0	0	0		419	374	348	335	0	373	403
31	0		0	0		416		348		0	373	
Min	0	0	0	0	0	261	374	348	325	0	0	0
Max	468	469	460	397	464	460	414	373	346	346	377	403
Mean	66	122	42	37	29	400	393	359	340	277	104	105
ac-ft	4033	7254	2562	2296	1590	24572	23359	22009	20224	17020	6355	6220



Appendix A (Table 27 of 38)
Charles Hansen Feeder Canal 930 Section, CO

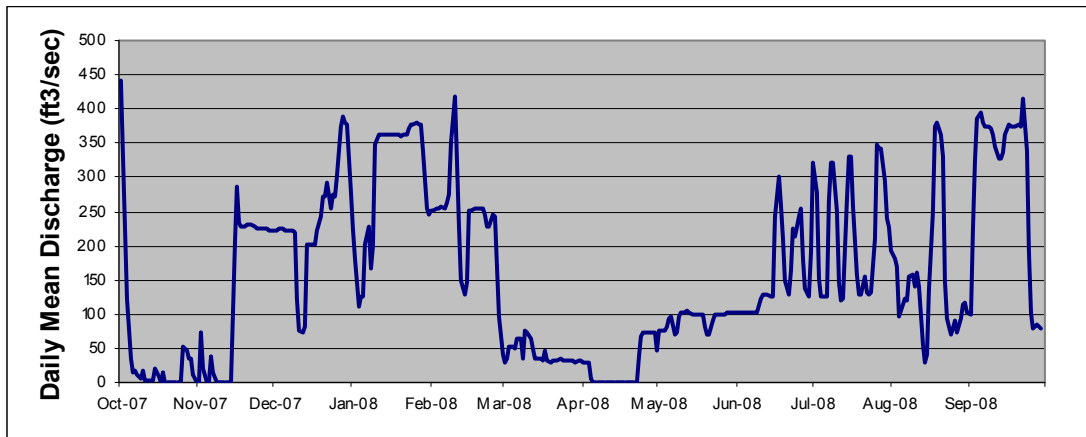
Location. --Lat 40°22'26", long 105°13'52", Larimer County, Hydrologic Unit 10190006, 8 miles southwest of Loveland, Colorado.

Gage.-- Water-stage recorder with satellite telemetry. Elevation of gage is 5470 feet from topographic map.

Remarks.-- Constructed between 1949 and 1953. The canal is 3.8 miles long and has a maximum capacity of 930 cubic feet per second. The canal is used to move Colorado-Big Thompson Project water and diverted native water to the Big Thompson River and/or Horsetooth Reservoir. Recorder was operated from 01-Oct-2007 to 30-Sep-2008. Record is complete and fair. This record contains operational data which could be subject to future revisions and changes.

Flow, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	440	1	223	226	250	42	31	46	102	190	229	103
2	330	74	223	182	252	31	31	75	102	322	193	99
3	232	22	224	110	253	36	30	75	103	279	181	221
4	123	1	224	125	255	52	30	75	103	153	171	324
5	35	1	223	126	257	52	7	81	103	126	97	387
6	14	38	223	201	255	50	0	94	103	126	114	394
7	19	15	223	228	263	65	0	97	103	127	123	380
8	13	1	224	167	274	65	0	70	102	267	121	374
9	6	1	220	199	350	36	0	74	103	322	156	373
10	16	1	124	347	420	75	0	97	102	323	158	373
11	3	1	75	363	328	74	0	102	122	251	141	361
12	3	1	73	362	228	64	0	103	129	147	160	346
13	3	1	83	362	148	51	0	104	130	120	139	327
14	3	1	202	363	129	34	0	102	128	122	55	328
15	20	205	202	362	147	34	0	100	126	268	30	335
16	9	287	202	362	252	35	0	100	127	329	41	362
17	1	233	202	363	253	34	0	100	243	329	134	376
18	14	229	222	363	253	47	0	100	302	260	248	375
19	1	229	241	362	253	31	0	100	260	157	373	375
20	1	230	271	360	254	30	0	81	212	129	379	376
21	1	230	271	363	254	31	0	70	150	130	363	378
22	1	230	293	363	244	32	0	70	128	156	331	375
23	1	228	256	372	228	33	0	92	163	130	149	414
24	1	226	274	378	228	34	38	100	224	130	93	340
25	2	226	272	377	246	32	69	100	212	130	72	194
26	53	225	302	381	242	32	73	100	243	212	80	102
27	48	225	376	378	173	32	73	100	255	349	90	79
28	36	224	390	376	96	33	73	100	181	342	73	85
29	36	224	381	340		31	74	101	138	342	93	83
30	11	223	379	255		30	74	102	125	296	114	80
31	1		279	246		32		102		239	117	
Min	1	1	73	110	96	30	0	46	102	120	30	79
Max	440	287	390	381	420	75	74	104	302	349	379	414
Mean	48	128	238	302	242	42	20	91	154	219	155	291
ac-ft	2925	7591	14608	18540	13435	2556	1196	5574	9156	13472	9536	17263

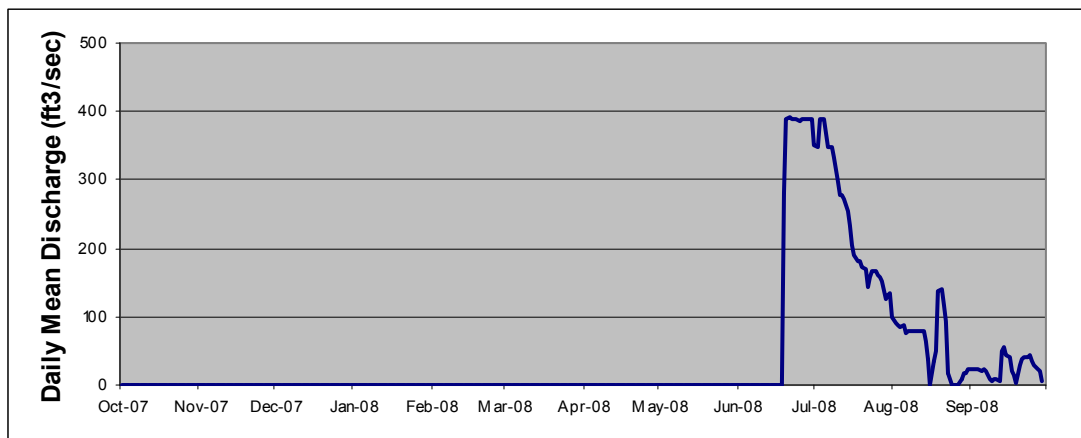


Appendix A (Table 28 of 38)
Dille Tunnel near Drake, CO

Location. --Lat 40°25'02", long 105°14'35", Larimer County, Hydrologic Unit 10190006, 11 miles west of Loveland, Colorado, on the Big Thompson River.
Gage.-- Water-stage recorder with satellite telemetry at Parshall Flume. Elevation of gage is 5520 feet from topographic map.
Remarks.-- Constructed in 1950. Maximum capacity is 600 cubic feet per second. Dille Tunnel diverts water from the Big Thompson River for power generation and water supply. The hydropower diversion operation, also known as the skim operation, diverts water from the Big Thompson River through Dille Tunnel for power generation at the Big Thompson Power Plant, where the diverted water is returned to the river. The Skim daily value is determined based on the data from the gage. Recorder was operated from 01-Oct-2007 to 20-Dec-2007, and from 04-Apr-2008 to 30-Sep-2008. Record is complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Hydropower Diversion Flow (Skim), Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	37	0
8	0	0	0	0	0	0	0	0	0	0	65	0
9	0	0	0	0	0	0	0	0	0	0	86	0
10	0	0	0	0	0	0	0	0	0	0	91	0
11	0	0	0	0	0	0	0	0	0	0	74	0
12	0	0	0	0	0	0	0	0	0	0	46	0
13	0	0	0	0	0	0	0	0	0	0	38	0
14	0	0	0	0	0	0	0	0	0	0	38	0
15	0	0	0	0	0	0	0	0	0	0	34	0
16	0	0	0	0	0	0	0	0	0	0	41	0
17	0	0	0	0	0	0	0	0	0	0	44	0
18	0	0	0	0	0	0	0	0	0	0	44	0
19	0	0	0	0	0	0	0	0	0	0	44	0
20	0	0	0	0	0	0	0	0	0	0	63	0
21	0	0	0	0	0	0	0	0	0	0	62	0
22	0	0	0	0	0	0	0	0	0	0	45	0
23	0	0	0	0	0	0	0	0	0	0	35	0
24	0	0	0	0	0	0	0	0	0	0	29	0
25	0	0	0	0	0	0	0	0	0	0	27	0
26	0	0	0	0	0	0	0	0	0	0	26	0
27	0	0	0	0	0	0	0	0	0	0	7	0
28	0	0	0	0	0	0	0	0	0	0	4	0
29	0	0	0	0	0	0	0	0	0	0	6	0
30	0	0	0	0	0	0	0	0	0	0	12	0
31	0	0	0	0	0	0	0	0	0	0	6	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	0	0	0	0	0	0	0	0	0	0	91	0
Mean	0	0	0	0	0	0	0	0	0	0	32	0
ac-ft	0	0	0	0	0	0	0	0	0	0	1979	0



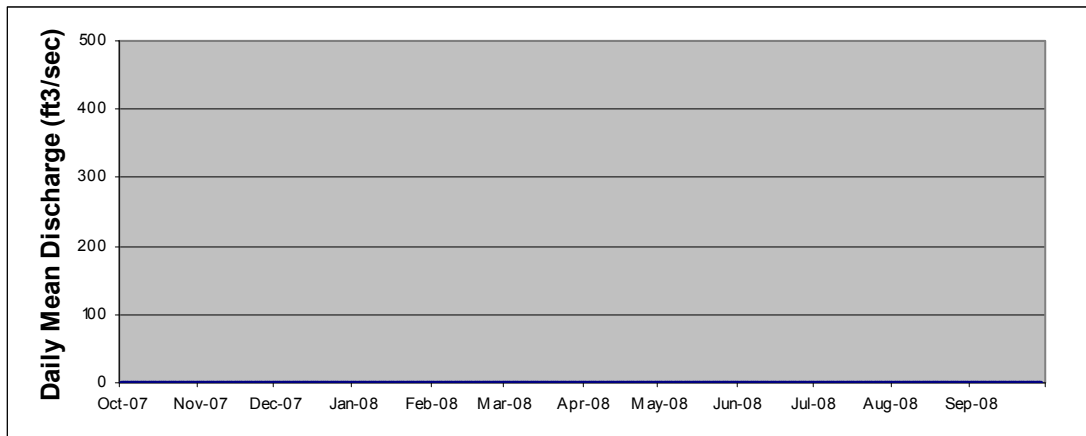
**Appendix A (Table 29 of 38)
Dille Tunnel near Drake, CO**

Location. --Lat 40°25'02", long 105°14'35", Larimer County, Hydrologic Unit 10190006, 11 miles west of Loveland, Colorado, on the Big Thompson River.
Gage.-- None.

Remarks.-- Constructed in 1950. Maximum capacity is 600 cubic feet per second. Dille Tunnel diverts water from the Big Thompson River for power generation and water supply. The right to divert native run-off is determined by the State of Colorado. Recorder was operated from 01-Oct-2007 to 20-Dec-2007, and from 04-Apr-2008 to 30-Sep-2008. Record is complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Priority Diversion Flow, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	0	0	0	0	0	0	0	0	0	0	0	0
Mean	0	0	0	0	0	0	0	0	0	0	0	0
ac-ft	0	0	0	0	0	0	0	0	0	0	0	0



Appendix A (30 of 38)
Dille Tunnel near Drake, CO

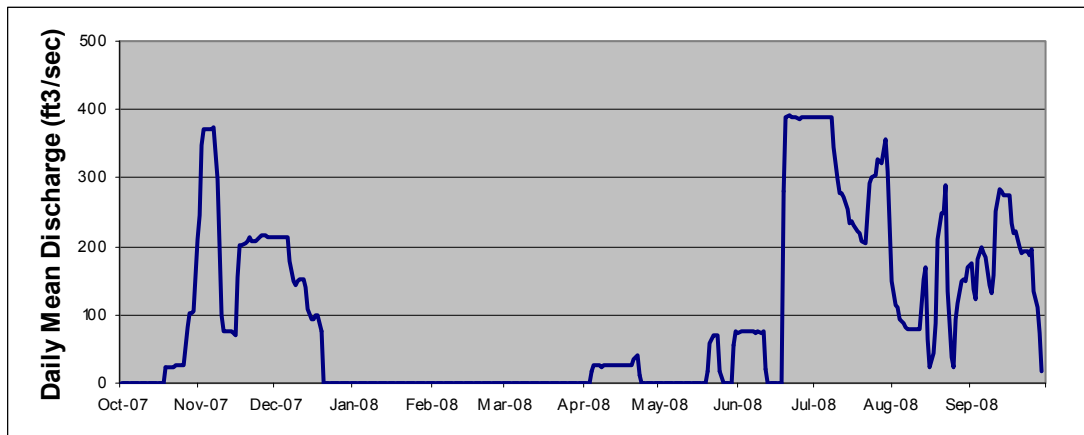
Location. --Lat 40°25'02", long 105°14'35", Larimer County, Hydrologic Unit 10190006, 11 miles west of Loveland, Colorado, on the Big Thompson River.

Gage.-- Water-stage recorder with satellite telemetry at Parshall Flume. Elevation of gage is 5520 feet from topographic map.

Remarks.— Constructed in 1950. Maximum capacity is 600 cubic feet per second. Dille Tunnel diverts water from the Big Thompson River for power generation and water supply. Recorder was operated from 01-Oct-2007 to 20-Dec-2007, and from 04-Apr-2008 to 30-Sep-2008. Record is complete and reliable, although data has not been revised. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	246	213	0	0	0	0	0	75	388	235	169
2	0	347	213	0	0	0	0	0	74	389	148	174
3	0	371	213	0	0	0	0	0	75	389	114	136
4	0	372	213	0	0	0	0	0	75	388	111	124
5	0	371	213	0	0	0	18	0	75	388	94	180
6	0	371	213	0	0	0	25	0	75	388	87	200
7	0	375	179	0	0	0	25	0	75	389	82	189
8	0	297	149	0	0	0	25	0	75	389	80	185
9	0	197	144	0	0	0	24	0	74	389	80	142
10	0	100	150	0	0	0	25	0	75	345	80	133
11	0	75	153	0	0	0	27	0	74	298	80	159
12	0	75	152	0	0	0	26	0	75	277	80	252
13	0	75	140	0	0	0	25	0	21	278	80	283
14	0	75	109	0	0	0	26	0	0	272	152	282
15	0	69	93	0	0	0	26	0	0	255	170	275
16	0	156	95	0	0	0	26	0	0	234	63	274
17	0	202	100	0	0	0	26	0	0	236	24	275
18	0	202	100	0	0	0	26	0	0	232	43	233
19	24	206	77	0	0	0	25	0	0	221	87	219
20	23	209	0	0	0	0	25	0	280	219	210	222
21	23	212	0	0	0	0	25	18	389	209	249	200
22	24	207	0	0	0	0	36	58	391	205	248	191
23	25	208	0	0	0	0	40	70	390	251	289	194
24	25	211	0	0	0	0	11	70	389	293	134	194
25	25	213	0	0	0	0	0	70	388	301	37	188
26	25	215	0	0	0	0	0	19	387	304	23	195
27	83	215	0	0	0	0	0	0	389	327	94	134
28	102	213	0	0	0	0	0	0	389	326	116	112
29	102	213	0	0	0	0	0	0	388	323	150	74
30	104	213	0	0	0	0	0	0	388	356	153	17
31	210	0	0	0	0	0	0	55	0	309	149	0
Min	0	69	0	0	0	0	0	0	0	205	23	17
Max	210	375	213	0	0	0	40	70	391	389	289	283
Mean	26	217	94	0	0	0	17	12	170	309	121	187
ac-ft	1574	12892	5780	0	0	0	1014	713	10070	18945	7409	11098



**Appendix A (Table 31 of 38)
Big Thompson Power Plant, CO**

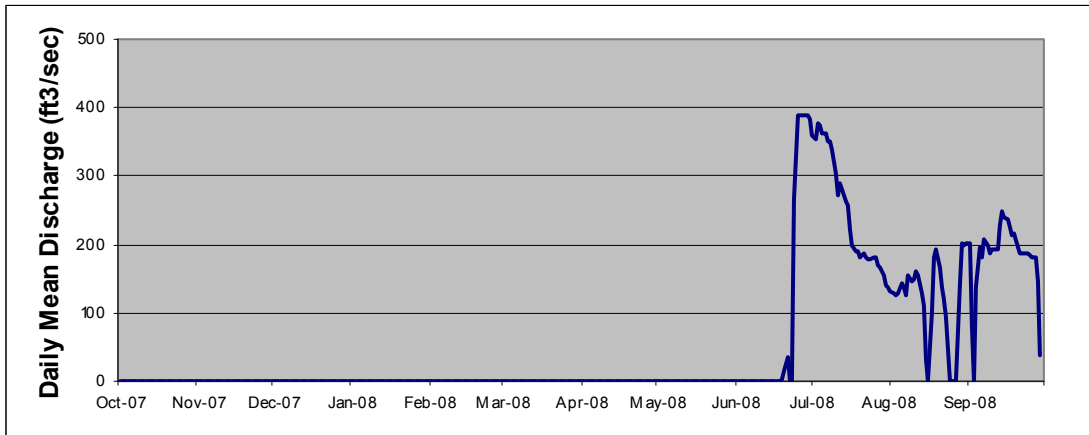
Location. --Lat 40°25'16", long 105°13'26", Larimer County, Hydrologic Unit 10190006, 9 miles west of Loveland, Colorado, on the Big Thompson River.

Gage.-- Flow meter with satellite telemetry. Elevation of gage is 5280 feet from topographic map.

Remarks.-- Initial operation in 1959. Maximum capacity is 400 cubic feet per second. Power plant returns hydropower diversions to the Big Thompson River downstream of the canyon mouth. Power plant is also used to deliver Colorado-Big Thompson project water. Recorder was operated from 01-Oct-2007 to 05-Oct-2007 and from 17-Junl-2008 to 30-Sep-2008. The plant is winterized from October through April each year. Record is complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	383	137	202
2	0	0	0	0	0	0	0	0	0	360	131	203
3	0	0	0	0	0	0	0	0	0	353	129	81
4	0	0	0	0	0	0	0	0	0	378	127	0
5	0	0	0	0	0	0	0	0	0	375	128	138
6	0	0	0	0	0	0	0	0	0	362	142	197
7	0	0	0	0	0	0	0	0	0	363	136	182
8	0	0	0	0	0	0	0	0	0	352	125	207
9	0	0	0	0	0	0	0	0	0	352	155	198
10	0	0	0	0	0	0	0	0	0	338	147	188
11	0	0	0	0	0	0	0	0	0	303	149	194
12	0	0	0	0	0	0	0	0	0	272	162	193
13	0	0	0	0	0	0	0	0	0	289	154	192
14	0	0	0	0	0	0	0	0	0	281	129	229
15	0	0	0	0	0	0	0	0	0	263	111	248
16	0	0	0	0	0	0	0	0	0	258	31	240
17	0	0	0	0	0	0	0	0	0	221	0	236
18	0	0	0	0	0	0	0	0	0	199	98	224
19	0	0	0	0	0	0	0	0	0	190	181	213
20	0	0	0	0	0	0	0	0	3	190	193	217
21	0	0	0	0	0	0	0	0	15	182	168	197
22	0	0	0	0	0	0	0	0	35	186	138	187
23	0	0	0	0	0	0	0	0	0	181	120	187
24	0	0	0	0	0	0	0	0	0	177	94	187
25	0	0	0	0	0	0	0	0	266	179	0	187
26	0	0	0	0	0	0	0	0	388	180	0	184
27	0	0	0	0	0	0	0	0	390	180	0	182
28	0	0	0	0	0	0	0	0	389	171	0	182
29	0	0	0	0	0	0	0	0	389	167	140	145
30	0	0	0	0	0	0	0	0	389	154	201	38
31	0	0	0	0	0	0	0	0	0	140	200	0
Min	0	0	0	0	0	0	0	0	0	140	0	0
Max	0	0	0	0	0	0	0	0	390	383	201	248
Mean	0	0	0	0	0	0	0	0	75	257	117	182
ac-ft	0	0	0	0	0	0	0	0	4483	15798	7179	10807



Appendix A (Table 32 of 38)
Charles Hansen Feeder Canal Wasteway, CO

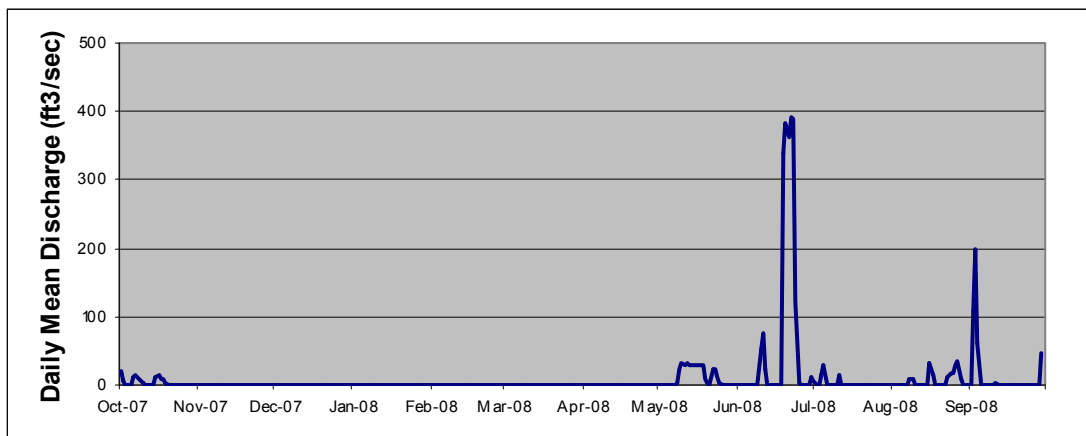
Location. --Lat 40°25'13", long 105°13'28", Larimer County, Hydrologic Unit 10190006, 9 miles west of Loveland, Colorado, on the Big Thompson River.

Gage.-- Water-stage recorder with satellite telemetry at 15 foot Parshall Flume. Elevation of gage is 5465 feet from Designer's Operating Criteria.

Remarks.-- Constructed between 1949 and 1953. Maximum capacity is 400 cubic feet per second. The structure is used to return diverted water and deliver Colorado-Big Thompson Project water to the Big Thompson River. Recorder was operated from 01-Oct-2007 to 09-Nov-2007, and from 08-May-2008 to 30-Sep-2008. Record is complete and reliable. These data are provisional operations data and are subject to further revision and change.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	20	0	0	0	0	0	0	0	0	11	0	0
2	7	0	0	0	0	0	0	0	0	5	1	0
3	0	0	0	0	0	0	0	0	0	0	0	109
4	0	0	0	0	0	0	0	0	0	0	0	199
5	0	0	0	0	0	0	0	0	0	14	0	60
6	12	0	0	0	0	0	0	0	0	29	0	0
7	16	0	0	0	0	0	0	0	0	0	0	0
8	12	0	0	0	0	0	0	0	0	0	0	0
9	5	0	0	0	0	0	0	2	0	0	9	0
10	3	0	0	0	0	0	0	23	0	0	9	0
11	0	0	0	0	0	0	0	31	54	0	0	1
12	0	0	0	0	0	0	0	31	75	15	0	3
13	0	0	0	0	0	0	0	31	22	0	0	1
14	0	0	0	0	0	0	0	30	0	0	0	0
15	13	0	0	0	0	0	0	30	0	0	0	0
16	16	0	0	0	0	0	0	30	0	0	0	0
17	8	0	0	0	0	0	0	30	0	0	34	0
18	9	0	0	0	0	0	0	30	0	0	14	0
19	3	0	0	0	0	0	0	30	0	0	0	0
20	0	0	0	0	0	0	0	9	339	0	0	0
21	0	0	0	0	0	0	0	3	384	1	0	0
22	0	0	0	0	0	0	0	1	364	0	0	0
23	0	0	0	0	0	0	0	23	391	0	0	0
24	0	0	0	0	0	0	0	24	389	0	12	0
25	0	0	0	0	0	0	0	11	123	0	18	0
26	0	0	0	0	0	0	0	2	2	0	18	0
27	0	0	0	0	0	0	0	0	0	0	29	0
28	0	0	0	0	0	0	0	0	0	0	35	0
29	0	0	0	0	0	0	0	0	0	0	10	0
30	0	0	0	0	0	0	0	0	0	0	0	48
31	0	0	0	0	0	0	0	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	20	0	0	0	0	0	0	31	391	29	35	199
Mean	4	0	0	0	0	0	0	12	71	2	6	14
ac-ft	246	0	0	0	0	0	0	734	4243	149	373	833



Appendix A (Table 33 of 38)
Charles Hansen Feeder Canal 550 Section, CO

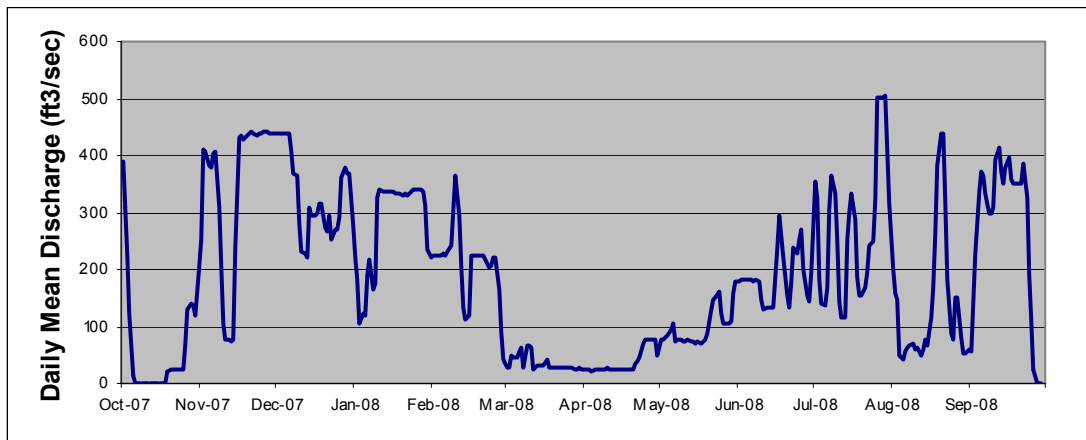
Location. --Lat 40°25'25", long 105°13'34", Larimer County, Hydrologic Unit 10190006, 9 miles west of Loveland, Colorado.

Gage.-- Water-stage recorder with satellite telemetry. Elevation of gage is 5460 feet from topographic map.

Remarks.-- Constructed between 1949 and 1953. The canal is 9.4 miles long and has a maximum capacity of 550 cubic feet per second. The canal is used to convey Colorado-Big Thompson Project water and diverted native water to Horsetooth Reservoir. Recorder was operated from 01-Oct-2007 to 30-Sep-2008. Record is complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	391	252	438	223	225	41	26	48	180	198	317	58
2	307	409	438	182	225	27	26	78	181	354	201	57
3	225	408	438	106	225	28	25	79	181	327	157	139
4	122	383	439	124	226	48	25	79	182	182	149	227
5	16	381	439	118	227	45	20	84	182	142	51	337
6	n/a	405	438	188	225	47	24	95	183	138	42	373
7	n/a	407	406	217	231	57	24	105	181	167	55	366
8	n/a	309	370	164	242	62	25	73	181	305	63	332
9	n/a	207	364	174	301	28	24	76	181	365	65	300
10	n/a	107	279	325	364	67	24	75	180	334	69	299
11	n/a	76	231	339	294	67	26	74	148	253	59	310
12	n/a	76	227	338	207	62	25	74	132	146	62	393
13	n/a	75	220	337	135	24	25	77	134	115	51	414
14	n/a	76	307	337	113	31	26	74	134	117	60	373
15	n/a	240	293	336	121	31	25	72	132	251	78	352
16	n/a	433	293	335	223	32	25	72	132	299	67	380
17	n/a	435	299	335	224	31	25	72	235	335	116	395
18	n/a	428	316	334	225	43	25	72	294	289	167	359
19	21	432	316	332	225	28	25	72	261	187	262	353
20	23	438	272	330	225	27	25	76	220	156	381	351
21	23	443	267	332	225	28	25	87	154	153	437	352
22	24	437	296	330	219	28	34	128	134	170	440	350
23	25	436	253	336	205	29	38	149	180	195	323	385
24	25	438	271	341	206	29	44	151	237	241	184	326
25	25	440	269	339	221	27	70	163	227	248	87	190
26	68	441	292	341	222	26	76	124	253	324	78	110
27	130	441	362	340	164	27	76	105	270	500	150	24
28	139	439	379	338	93	28	77	106	199	502	152	n/a
29	137	438	369	311		26	77	107	156	501	82	n/a
30	119	438	368	235		25	77	107	143	507	53	n/a
31	206		277	221		27		158		406	53	
Min	16	75	220	106	93	24	20	48	132	115	42	24
Max	391	443	439	341	364	67	77	163	294	507	440	414
Mean	112	346	330	279	216	36	36	94	186	271	146	293
ac-ft	4008	20526	20251	17104	11958	2225	2157	5769	11059	16647	8933	15655



Appendix A (34 of 38)
Horsetooth Reservoir near Fort Collins, CO

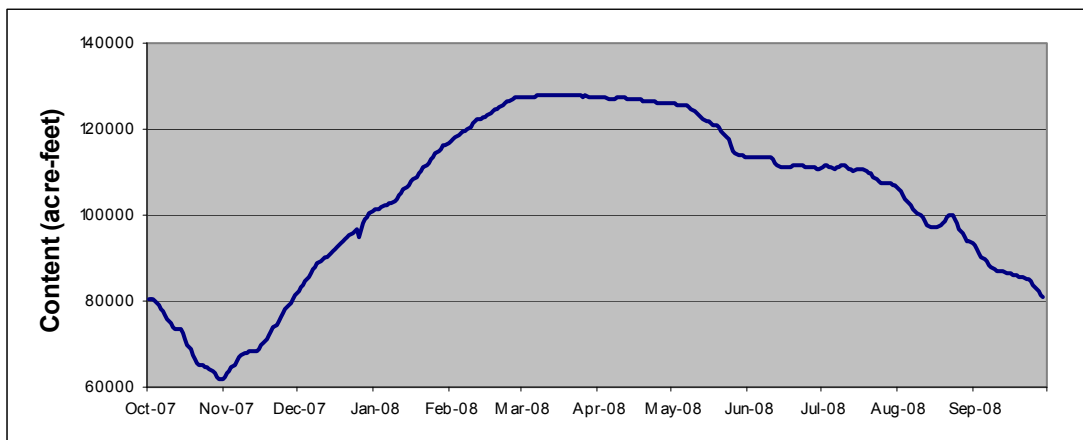
Location. --Lat 40°36'00", long 105°10'05", Larimer County, Hydrologic Unit 10190007, at Horsetooth Dam outlet works, 4.8 miles west of Fort Collins, Colorado.

Gage.— Water level recorder with satellite telemetry. Elevation of gage is 5300 from topographic map.

Remarks.—Reservoir is formed by four earth-fill dams. Construction completed in 1949. Impoundment began in 1951. Horsetooth Reservoir is one of two terminal reservoirs for Colorado-Big Thompson Project diversions. Transmountain diversions are stored at Horsetooth Reservoir before final delivery. Maximum capacity is 156,735 acre-feet at elevation 5430.00 ft, with 142,038 acre-feet of active storage. Recorder was operated from 01-Oct-2007 to 30-Sep-2008. Record is complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	80,669	62,375	82,399	101,228	117,248	127,523	127,377	125,834	113,612	110,829	106,747	93,615
2	80,640	63,042	83,073	101,585	117,668	127,486	127,450	125,907	113,371	111,151	106,148	92,838
3	80,365	63,869	83,794	101,585	118,053	127,432	127,377	125,834	113,268	111,406	105,419	91,863
4	79,904	64,635	84,651	101,942	118,491	127,505	127,341	125,780	113,320	111,457	104,709	91,016
5	79,143	65,339	85,661	102,121	118,930	127,541	127,250	125,690	113,320	111,202	103,788	90,464
6	78,356	66,113	86,421	102,414	119,335	127,596	127,122	125,617	113,543	110,998	102,773	89,791
7	77,617	66,957	87,262	102,773	119,758	127,596	127,159	125,581	113,526	110,829	102,121	89,076
8	76,838	67,514	88,030	102,953	120,147	127,705	127,122	125,400	113,594	110,998	101,309	88,378
9	75,951	67,873	88,711	103,297	120,695	127,687	127,159	125,148	113,646	111,168	100,839	87,910
10	75,027	68,033	89,289	103,854	121,405	127,705	127,213	124,841	113,697	111,406	100,581	87,517
11	74,136	68,166	89,654	104,627	121,974	127,779	127,250	124,373	113,405	111,440	100,081	87,156
12	73,651	68,273	90,082	105,221	122,295	127,797	127,213	123,708	112,925	111,202	99,485	87,006
13	73,471	68,353	90,449	105,883	122,545	127,797	127,213	123,171	112,224	110,812	98,652	86,901
14	73,430	68,420	90,985	106,530	122,742	127,833	127,177	122,742	111,730	110,557	97,838	86,811
15	72,453	68,834	91,539	107,146	122,885	127,852	127,122	122,331	111,304	110,456	97,202	86,646
16	71,183	69,613	92,095	107,798	123,296	127,760	126,977	121,992	111,015	110,574	97,011	86,511
17	69,910	70,464	92,683	108,417	123,637	127,870	126,922	121,654	110,947	110,693	97,106	86,436
18	68,687	71,360	93,257	109,039	123,978	127,852	126,941	121,281	111,202	110,795	97,249	86,213
19	67,567	72,069	93,880	109,713	124,445	127,870	126,813	121,103	111,389	110,608	97,551	85,945
20	66,601	72,947	94,380	110,337	124,823	127,833	126,704	120,766	111,474	110,354	98,077	85,721
21	65,772	73,803	94,835	110,947	125,238	127,961	126,596	120,235	111,491	109,983	98,812	85,468
22	65,261	74,650	95,416	111,610	125,635	127,888	126,614	119,600	111,406	109,983	99,405	85,363
23	65,039	75,516	95,888	112,224	125,943	127,797	126,469	119,089	111,474	108,703	99,839	85,170
24	64,674	76,330	96,409	112,908	126,305	127,833	126,342	118,351	111,440	108,183	99,936	85,007
25	64,426	77,205	96,900	113,508	126,686	127,779	126,342	117,493	111,321	107,748	99,148	84,518
26	64,206	78,057	97,435	114,214	127,032	127,833	126,251	116,186	111,321	107,347	98,013	83,823
27	63,636	78,871	98,204	114,886	127,395	127,650	126,160	114,973	111,372	107,380	96,884	83,029
28	63,042	79,746	98,924	115,440	127,578	127,687	126,178	114,369	111,219	107,330	95,888	82,268
29	62,439	80,568	99,646	116,047		127,632	126,178	114,024	110,998	107,330	94,756	81,466
30	61,787	81,437	100,306	116,499		127,559	126,015	113,852	110,880	107,280	94,052	80,698
31	61,825		100,791	116,882		127,505		113,766		107,130	93,849	
Min	61,787	62,375	82,399	101,228	117,248	127,432	126,015	113,766	110,880	107,130	93,849	80,698
Max	80,669	81,437	100,791	116,882	127,578	127,961	127,450	125,907	113,697	111,457	106,747	93,615
EOM	61,825	81,437	100,791	116,882	127,578	127,505	126,015	113,766	110,880	107,130	93,849	80,698



Appendix A (35 of 38)
Charles Hansen Supply Canal below Horsetooth Reservoir, CO

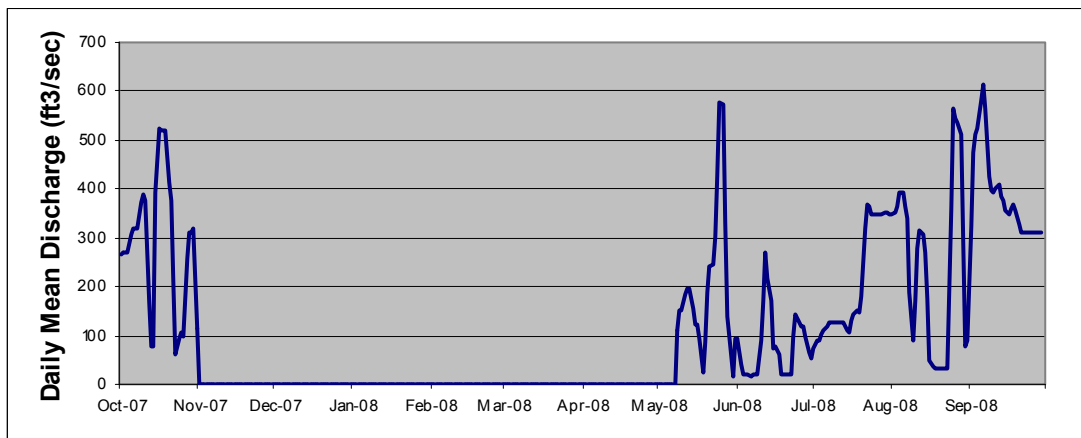
Location. --Lat 40°36'01", long 105°10'18", Larimer County, Hydrologic Unit 10190007, 4 miles west of Fort Collins, Colorado.

Gage.-- Water-stage recorder with satellite telemetry at concrete control. Elevation of gage is 5280 feet from topographic map.

Remarks.-- Constructed between 1950 and 1952. The canal is 5.1 miles long and has a maximum capacity of 1500 cubic feet per second. The canal is used to deliver Colorado-Big Thompson Project water stored at Horsetooth Reservoir. Recorder was operated from 01-Oct-2007 to 01Nov-2007 and from 04-Apr-2008 to 30-Sep-2008 by Northern Colorado Water Conservancy District. Record is complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	268	0	0	0	0	0	0	0	94	53	348	89
2	269	0	0	0	0	0	0	0	96	75	349	324
3	270	0	0	0	0	0	0	0	40	91	353	475
4	270	0	0	0	0	0	0	0	20	91	365	512
5	306	0	0	0	0	0	0	0	20	104	394	523
6	318	0	0	0	0	0	0	0	20	111	394	582
7	318	0	0	0	0	0	0	0	18	120	363	616
8	318	0	0	0	0	0	0	0	18	126	341	564
9	371	0	0	0	0	0	0	113	19	126	189	424
10	388	0	0	0	0	0	0	150	19	126	92	395
11	376	0	0	0	0	0	0	150	91	127	172	393
12	166	0	0	0	0	0	0	184	171	128	277	403
13	79	0	0	0	0	0	0	195	270	128	317	408
14	79	0	0	0	0	0	0	195	217	128	308	384
15	392	0	0	0	0	0	0	154	170	109	269	377
16	524	0	0	0	0	0	0	124	73	108	176	358
17	520	0	0	0	0	0	0	124	77	129	50	347
18	521	0	0	0	0	0	0	95	61	143	36	358
19	521	0	0	0	0	0	0	24	19	152	31	367
20	414	0	0	0	0	0	0	84	19	146	33	357
21	378	0	0	0	0	0	0	189	19	182	34	326
22	219	0	0	0	0	0	0	240	19	319	34	312
23	61	0	0	0	0	0	0	245	19	369	34	312
24	95	0	0	0	0	0	0	305	98	363	34	312
25	107	0	0	0	0	0	0	427	142	346	359	312
26	99	0	0	0	0	0	0	576	125	346	564	312
27	258	0	0	0	0	0	0	571	119	346	543	312
28	312	0	0	0	0	0	0	333	121	346	538	312
29	312	0	0	0	0	0	0	139	97	349	513	312
30	319	0	0	0	0	0	0	59	64	351	281	312
31	116	0	0	0	0	0	0	18	0	351	79	0
Min	61	0	0	0	0	0	0	0	18	53	31	89
Max	524	0	0	0	0	0	0	576	270	369	564	616
Mean	289	0	0	0	0	0	0	151	78	193	254	379
ac-ft	17743	0	0	0	0	0	0	9287	4661	11859	15582	22538



**Appendix A (36 of 38)
Carter Lake near Berthoud, Colorado, CO**

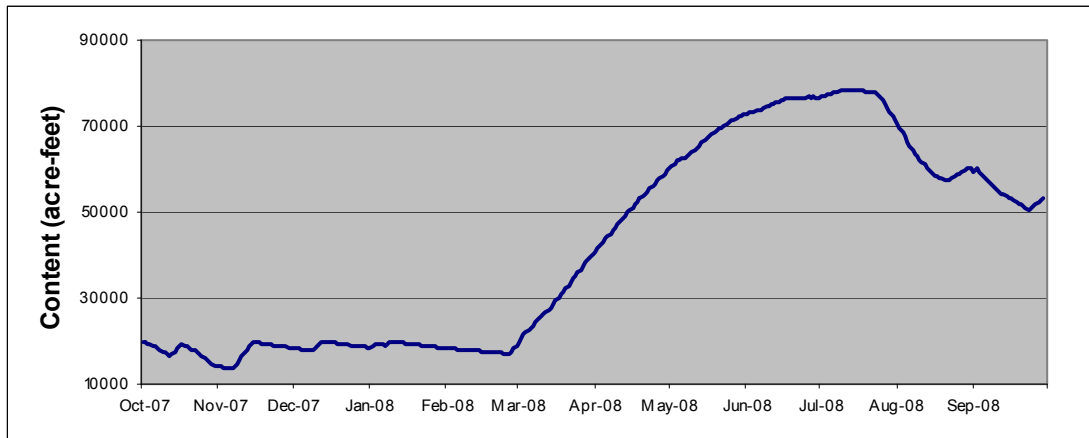
Location. --Lat 40°19' 28" , long 105°12' 41" , Larimer County, Hydrologic Unit 10190006, on Dam #1, 7 miles northwest of Berthoud, Colorado, and 10 miles west of Loveland, Colorado.

Gage.--Water level recorder with satellite telemetry. Elevation of gage is 5770 from topographic map.

Remarks.--Reservoir is formed by three earth-fill dams. Construction completed in 1952. Carter Lake is one of two terminal reservoirs for Colorado-Big Thompson Project water diversions. Transmountain water diversions are stored at Carter Lake before final delivery. Maximum capacity is 112,200 acre-feet at elevation 5759.00 ft, with 108,900 acre-feet of active capacity. Recorder was operated from 01-Oct-2007 to 30-Sep-2008. Record is complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	19,956	14,063	18,355	18,464	18,230	19,063	40,326	59,547	72,790	76,726	71,348	60,247
2	19,660	13,988	18,230	18,641	18,201	19,897	40,926	60,108	72,909	76,877	70,379	59,464
3	19,455	13,878	18,145	19,337	18,150	20,742	41,700	60,616	73,107	77,018	69,392	60,247
4	19,215	13,809	18,088	19,215	18,145	21,480	42,405	61,256	73,305	77,189	68,478	59,446
5	18,924	13,709	18,031	19,156	18,116	21,975	43,049	61,879	73,405	77,321	67,511	58,768
6	18,607	13,611	17,975	19,098	18,094	22,576	43,745	62,206	73,554	77,543	66,444	58,220
7	18,258	13,878	17,947	19,011	18,060	23,083	44,371	62,439	73,743	77,745	65,365	57,556
8	17,890	14,743	17,862	19,484	18,031	23,602	45,116	62,730	73,862	77,897	64,482	56,941
9	17,637	15,532	17,806	19,986	17,918	24,381	45,790	63,199	74,191	78,028	63,575	56,382
10	17,381	16,362	18,201	19,927	17,862	25,176	46,502	63,669	74,440	78,302	62,851	55,852
11	16,988	17,159	19,017	19,838	17,806	25,782	47,141	64,094	74,809	78,484	62,140	55,314
12	16,720	17,947	19,808	19,778	17,806	26,246	47,902	64,482	74,909	78,556	61,534	54,859
13	16,884	18,693	19,956	19,719	17,721	26,665	48,591	64,956	75,159	78,556	60,940	54,370
14	17,526	19,484	19,867	19,596	17,699	27,182	49,232	65,479	75,450	78,535	60,274	54,015
15	18,201	19,897	19,755	19,513	17,665	27,834	49,885	66,062	75,720	78,454	59,583	53,599
16	18,837	19,719	19,690	19,484	17,604	28,596	50,532	66,540	75,971	78,454	59,088	53,299
17	19,337	19,660	19,601	19,396	17,554	29,345	51,147	67,068	76,273	78,403	58,585	53,035
18	19,011	19,507	19,572	19,343	17,526	30,087	51,887	67,492	76,474	78,332	58,175	52,684
19	18,687	19,425	19,484	19,215	17,470	30,836	52,420	67,994	76,625	78,231	57,892	52,377
20	18,378	19,367	19,396	19,186	17,381	31,564	53,035	68,575	76,605	78,079	57,702	52,018
21	18,088	19,244	19,302	19,133	17,292	32,254	53,608	68,857	76,574	78,049	57,484	51,695
22	17,778	19,215	19,215	19,011	17,298	32,994	54,281	69,362	76,655	77,947	57,212	51,408
23	17,470	19,040	19,098	18,930	17,242	33,815	54,850	69,704	76,655	77,897	57,303	51,060
24	17,076	19,011	19,069	18,866	17,132	34,502	55,628	70,144	76,675	77,897	57,711	50,696
25	16,687	18,895	18,982	18,780	17,049	35,285	56,166	70,437	76,605	77,492	58,220	51,017
26	16,200	18,809	18,930	18,664	16,939	35,968	56,661	70,807	76,726	76,957	58,631	51,451
27	15,670	18,722	18,872	18,607	17,470	36,665	57,276	71,171	76,776	76,072	59,042	51,800
28	15,218	18,636	18,837	18,521	18,287	37,413	57,847	71,565	76,705	75,109	59,400	52,193
29	14,799	18,498	18,664	18,464		38,221	58,402	71,910	76,756	74,091	59,740	52,640
30	14,290	18,378	18,699	18,378		38,856	58,887	72,157	76,726	73,206	60,062	53,035
31	14,164		18,550	18,315		39,566		72,512		72,315	60,062	
Min	14,164	13,611	17,806	18,315	16,939	19,063	40,326	59,547	72,790	72,315	57,212	50,696
Max	19,956	19,897	19,956	19,986	18,287	39,566	58,887	72,512	76,776	78,556	71,348	60,247
EOM	14,164	18,378	18,550	18,315	18,287	39,566	58,887	72,512	76,726	72,315	60,062	53,035



Appendix A (37 of 38)
Saint Vrain Canal below Carter Reservoir, CO

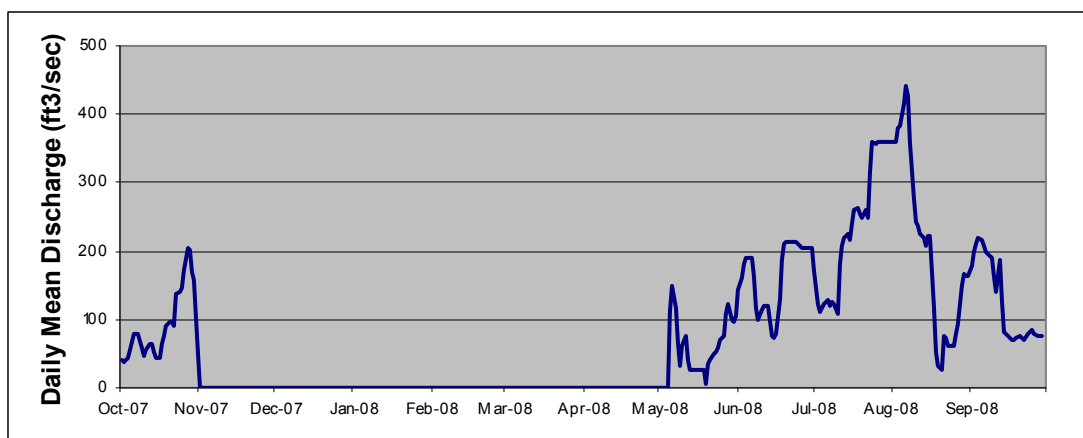
Location. --Lat 40°19'27", long 105°12'35", Larimer County, Hydrologic Unit 10190006, downstream from Carter Reservoir Dam #1, 7 miles northwest of Berthoud, Colorado, and 10 miles west of Loveland, Colorado.

Gage.-- Water-stage recorder with telephone telemetry. Data provided by the Northern Colorado Water Conservancy District. Elevation of gage is 5,590 feet from topographic map.

Remarks.-- Constructed between 1952 and 1954. The canal is 9.8 miles long and has a maximum capacity of 625 cubic feet per second. The canal is used to deliver Colorado-Big Thompson Project water and diverted native water to project share holders. Recorder was operated by Northern Colorado Water Conservancy District from 01-Oct-2007 to 30-Sep-2008. Record is complete and fair. This record contains operational data which could be subject to future revisions and changes.

Flow, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	41	0	0	0	0	0	0	0	107	206	360	165
2	38	0	0	0	0	0	0	0	143	173	360	178
3	42	0	0	0	0	0	0	0	160	123	360	198
4	45	0	0	0	0	0	0	0	180	111	379	211
5	68	0	0	0	0	0	0	0	190	116	382	219
6	79	0	0	0	0	0	0	113	190	123	416	217
7	79	0	0	0	0	0	0	150	190	130	441	208
8	79	0	0	0	0	0	0	117	163	121	426	200
9	58	0	0	0	0	0	0	67	117	125	361	192
10	48	0	0	0	0	0	0	33	100	123	278	190
11	56	0	0	0	0	0	0	60	113	107	243	164
12	63	0	0	0	0	0	0	75	120	181	236	142
13	65	0	0	0	0	0	0	42	120	207	225	187
14	52	0	0	0	0	0	0	25	120	218	220	129
15	45	0	0	0	0	0	0	25	77	225	207	83
16	45	0	0	0	0	0	0	25	73	215	223	79
17	66	0	0	0	0	0	0	25	80	241	223	73
18	75	0	0	0	0	0	0	25	129	261	121	71
19	90	0	0	0	0	0	0	25	186	263	54	71
20	97	0	0	0	0	0	0	7	210	254	32	74
21	97	0	0	0	0	0	0	35	213	250	25	75
22	90	0	0	0	0	0	0	40	213	259	75	72
23	136	0	0	0	0	0	0	49	212	250	73	70
24	139	0	0	0	0	0	0	53	212	314	60	78
25	146	0	0	0	0	0	0	58	212	359	60	83
26	172	0	0	0	0	0	0	70	208	358	60	85
27	205	0	0	0	0	0	0	75	206	358	80	79
28	202	0	0	0	0	0	0	108	206	360	93	76
29	170	0	0	0	0	0	0	122	206	360	148	76
30	158	0	0	0	0	0	0	101	206	360	167	76
31	53	0	0	0	0	0	0	97	0	360	165	0
Min	38	0	0	0	0	0	0	0	73	107	25	70
Max	205	0	0	0	0	0	0	150	213	360	441	219
Mean	90	0	0	0	0	0	0	52	162	229	211	127
ac-ft	5543	0	0	0	0	0	0	3209	9626	14078	12975	7564



Appendix A (38 of 38)
Colorado-Big Thompson Project, CO

Location. -- Larimer , Grand, Summit, Boulder, Weld counties in Colorado, hydrologic units 14010001, 14010002 and 10190006, 10190007, on the Colorado River, Big Thompson River and Cache La Poudre River basins.

Remarks.— This table presents a summation of all the daily deliveries of C-BT water through the Saint Vrain Canal, the Charles Hansen Supply Canal, the Dixon Canal and from the Charles Hansen Feeder Canal (it does not include metered water). The C-BT Project is a transmountain water diversion system that stores, regulates and transports water from the Colorado River Basin to the Big-Thompson River Basin. The water diverted is used for irrigation, municipal and industrial purposes, to generate hydroelectric power and to provide recreation for the public. This record contains operational data which could be subject to future revisions and changes. Period of record between 01-Oct-2007 and 30-Sep-2008. Data was provided by the Northern Colorado Water Conservancy District. Record is complete and reliable.

Total Daily Water Deliveries, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	321	0	0	0	0	0	0	8	279	284	757	450
2	319	0	0	0	0	0	0	17	315	281	760	698
3	323	0	0	0	0	0	0	25	275	253	768	854
4	326	0	0	0	0	0	0	25	275	241	800	909
5	379	0	0	0	0	0	0	25	285	257	839	930
6	399	0	0	0	0	0	0	138	285	270	881	988
7	399	0	0	0	0	0	0	175	283	286	876	1000
8	399	0	0	0	0	0	0	142	257	283	836	970
9	431	0	0	0	0	0	0	207	211	295	605	821
10	439	0	0	0	0	0	0	212	194	296	433	782
11	435	0	0	0	0	0	0	332	279	281	482	760
12	233	0	0	0	0	0	0	419	366	350	580	748
13	147	0	0	0	0	0	0	397	465	372	606	798
14	133	0	0	0	0	0	0	383	402	382	593	711
15	438	0	0	0	0	0	0	336	307	381	547	666
16	571	0	0	0	0	0	0	300	206	392	468	648
17	588	0	0	0	0	0	0	285	217	424	323	654
18	598	0	0	0	0	0	0	261	249	448	198	677
19	649	0	0	0	0	0	0	190	265	456	125	684
20	563	0	0	0	0	0	0	150	289	442	103	693
21	527	0	0	0	0	0	0	269	292	472	97	619
22	373	0	0	0	0	0	0	387	269	624	147	580
23	243	0	0	0	0	0	16	398	256	666	143	579
24	263	0	0	0	0	0	6	452	335	721	129	586
25	263	0	0	0	0	0	17	565	379	749	454	593
26	303	0	0	0	0	0	25	746	358	757	659	599
27	521	0	0	0	0	0	25	757	350	762	669	560
28	580	0	0	0	0	0	25	552	352	761	678	545
29	558	0	0	0	0	0	25	381	328	763	813	512
30	639	0	0	0	0	0	25	283	295	764	644	467
31	229	0	0	0	0	0	0	205	0	764	440	0
Min	133	0	0	0	0	0	0	8	194	241	97	450
Max	649	0	0	0	0	0	25	757	465	764	881	1000
Mean	406	0	0	0	0	0	5	291	297	467	531	703
ac-ft	24923	0	0	0	0	0	324	17860	17655	28663	32581	41741

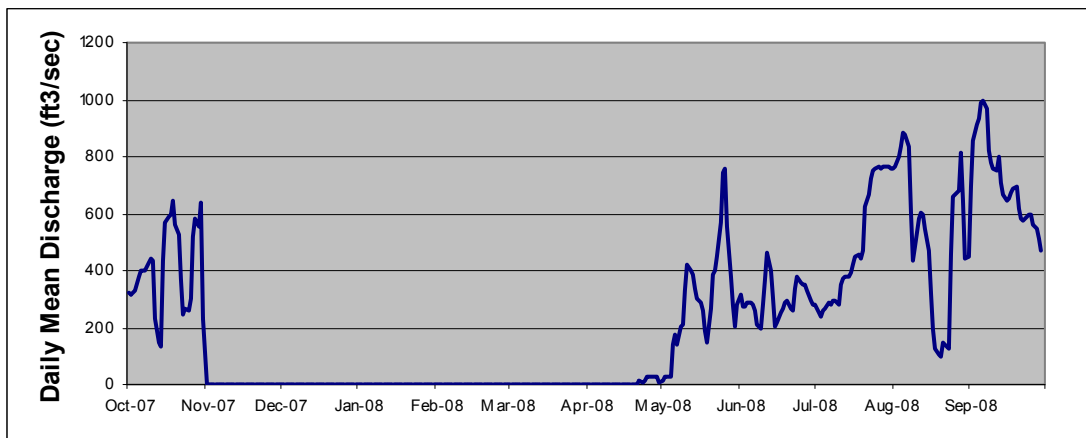


TABLE 1

WESTERN DIVISION – PICK-SLOAN MISSOURI BASIN PROGRAM
PERTINENT RESERVOIR DATA

(Data in Acre-feet)					
Reservoir	Dead Storage 1/	Active Storage 2/	Total Storage	Normal Minimum Storage	Limitation on normal minimum storage
Green Mountain	6,860	146,779	153,639	47,684	Minimum elevation for rated power output
Willow Creek	1,486	9,779	10,553	6,675	Elevation of pump canal head-works
Lake Granby	74,190	465,568	539,758	74,190	Lowest outlet elevation
Shadow Mountain	506	16,848	17,354	16,026	Minimum permissible Grand Lake elevation; 8,366 ft.
Grand Lake	3/	511	1,015	504	Legislation limits fluctuation
Marys Lake	42	885	927	308	Minimum elevation for power generation
Lake Estes	409	2,659	3,068	740	Minimum elevation to release 550 ft ³ /s
Pinewood Lake	416	1,765	2,181	613	Minimum elevation for power generation
Flatiron	125	635	760	324	Minimum elevation to release 550 ft ³ /s
Carter Lake	3,306	108,924	112,230	306	Lowest outlet elevation
Horsetooth	7,003	149,732	156,735	17,600	Elevation on highest delivery works
Total	94,343	903,373	998,220	167,970	

1/ Storage capacity below elevation of lowest outlet

2/ Total storage minus dead storage

3/ Not determined

TABLE 2

COLORADO-BIG THOMPSON PROJECT														
WATER YEAR 2008	MONTHLY SUMMARY OF BLUE RIVER OPERATIONS													TOTAL
	(ACRE-FEET)	(ACRE-FEET)	(ACRE-FEET)	(ACRE-FEET)	(ACRE-FEET)	(ACRE-FEET)	(ACRE-FEET)	(ACRE-FEET)	(ACRE-FEET)	(ACRE-FEET)	(ACRE-FEET)	(ACRE-FEET)	(ACRE-FEET)	
	INI	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
UNDEPLETED RUNOFF ABOVE GREEN MTN.														
RESERVOIR		19,150	11,900	11,100	11,000	9,700	10,800	20,100	87,060	154,300	91,800	37,600	22,300	486,810
UNDEPLETED RUNOFF ABOVE DILLON RES.		9,000	6,000	5,300	5,700	4,800	5,100	9,500	44,070	92,800	52,200	22,300	11,700	268,470
PERCENT OF TOTAL UN- DEPLETED RUNOFF ORI- GINATING ABOVE DILLON		0.470	0.504	0.477	0.518	0.495	0.472	0.473	0.506	0.601	0.569	0.593	0.525	0.551
DEPLETIONS BY 1929 COLORADO SPRINGS RIGHT	0		0	0	0	0	0	38	156	611	337	110	58	1310
DEPLETIONS BY 1948 COLORADO SPRINGS RIGHT	0		0	0	0	0	0	43	1005	6956	2832	1645	581	13,062
INFLOW TO DILLON	9,000		6,000	5,300	5,700	4,800	5,000	9,400	42,900	85,200	49,000	20,500	11,000	253,800
DILLON STORAGE (1000 AF)	251.8	251.8	245.1	241.8	240.0	238.2	233.5	222.2	219.8	257.6	254.1	253.5	252.1	
ROBERTS TUNNEL DIVERSIONS		0	100	4,500	4,260	3,500	1,500	0	9,500	24,500	21,300	7,300	1,100	77,560
DILLON OUTFLOW TO THE RIVER		7,800	11,500	4,100	3,200	3,000	8,300	20,600	35,700	21,900	30,200	12,600	10,100	169,000
TOTAL DEPLETIONS BY DENVER		1,200	-5,500	1,160	2,500	1,800	3,200	-11,200	7,100	62,700	18,700	7,800	900	83,960
RUNOFF ORIGINATING BETWEEN DILLON AND GREEN MTN RESERVOIR		10,300	6,100	5,900	5,400	4,910	5,900	10,800	43,730	62,820	40,320	15,680	10,800	222,660
ACTUAL INFLOW TO GREEN MTN RESERVOIR		18,000	17,500	9,900	8,500	7,900	14,050	31,200	78,800	84,100	69,900	28,100	20,700	388,650
GREEN MTN RESERVOIR STORAGE (1000 AF)	108.9	91.7	91.0	88.3	84.4	75.6	64.1	65.4	95.9	144.4	151.4	147.3	109.5	
TOTAL GREEN MTN OUTFLOW		34,900	18,100	12,600	12,400	16,600	25,500	29,800	47,700	34,800	61,900	31,400	57,900	383,600

TABLE 3
PAGE 1 OF 3

PICK-SLOAN MISSOURI BASIN PROGRAM
WESTERN DIVISION WATER AND POWER SYSTEM

COLORADO-BIG THOMPSON PROJECT

2008 ACTUAL OPERATIONS

OR	WATER IN 1000 ACRE-FEET				***	***	***	***	***	ENERGY IN GWH			
	INITIAL TOTAL	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
GREEN MOUNTAIN RESERVOIR													
Depleted Watershed Inflow	388.7	18.0	17.5 18.1	9.9	8.5	7.9	14.1	31.2	78.8	84.1	69.9	28.1	20.7
Turbine Release	367.1	34.9		12.6	12.4	16.6	25.5	29.8	47.7	34.8	49.0	31.4	54.3
Bypass	16.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.8	0.0	3.5
Spill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
End of Month Content	108.9	91.7	91.0	88.3	84.4	75.6	64.1	65.4	95.9	144.4	151.4	147.3	109.5
Kwh/AF		169.0	154.7	127.0	129.0	150.6	156.9	154.4	165.6	175.3	202.0	207.0	193.4
Generation	63.9	5.9	2.8	1.6	1.6	2.5	4.0	4.6	7.9	6.1	9.9	6.5	10.5
WILLOW CREEK RESERVOIR													
Inflow	79.6	2.2	1.5	1.3	1.1	0.9	1.0	4.1	34.0	24.1	5.7	2.3	1.4
Release to River	18.7	0.4	0.4	0.4	0.4	0.4	0.4	0.4	9.9	3.5	1.1	0.2	1.2
Pumped to Granby	61.1	1.0	2.4	0.0	0.0	0.0	2.4	2.9	23.3	20.1	4.0	2.1	2.9
End of Month Content	8.5	9.1	7.6	8.5	9.1	9.6	7.6	8.2	8.6	8.9	9.2	9.0	6.2
Pump Energy	12.9	0.2	0.5	0.0	0.0	0.0	0.5	0.6	5.0	4.3	0.8	0.4	0.6
GRANBY - SHADOW MOUNTAIN - GRAND LAKE													
Natural Watershed Inflow	274.3	9.8	3.9	5.0	4.6	4.0	3.7	10.2	63.2	105.3	38.7	16.6	9.3
Total Inflow into Granby	289.5	8.1	6.6	5.3	4.5	3.8	5.9	13.1	85.5	107.0	27.1	13.6	9.0
Granby Fish Release	26.6	1.8	1.2	1.3	1.2	1.2	1.2	1.2	3.5	4.8	5.0	1.9	2.3
Granby Seepage	3.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.5	0.4
Granby Spill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adams Tunnel	286.9	8.9	27.7	22.6	20.3	15.0	26.9	26.4	28.5	28.4	33.1	16.7	32.4
Granby End of Month content	376.3	374.3	351.1	332.0	314.8	302.3	279.9	267.0	338.5	437.0	437.1	433.9	408.3
SM-GL End of Month Content	17.6	17.7	17.7	17.7	17.7	17.8	17.7	17.8	17.3	17.9	17.9	17.8	17.8
Pumped from Granby	212.2	6.7	28.0	22.9	20.2	14.9	26.7	23.6	8.3	0.4	18.5	12.2	29.8
Granby Pump Kwh/AF		164.2	160.7	165.9	168.3	174.5	176.0	178.0	180.7	250.0	151.4	155.7	154.4
Granby Pump Energy	35.2	1.1	4.5	3.8	3.4	2.6	4.7	4.2	1.5	0.1	2.8	1.9	4.6

TABLE 3

PICK-SLOAN MISSOURI BASIN PROGRAM
WESTERN DIVISION WATER AND POWER SYSTEM
COLORADO-BIG THOMPSON PROJECT

OR	2008 ACTUAL OPERATIONS														
	WATER IN 1000 ACRE-FEET				***					***				ENERGY IN GWH	
	INITIAL TOTAL	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
MARYS LAKE – ESTES – FLATIRON															
Adams Tunnel Water	286.9	8.9	27.7	22.6	20.3	15.0	26.9	26.4	28.5	28.4	33.1	16.7	32.4		
Marys Lake Generation	46.2	0.1	1.6	4.0	3.5	2.4	4.9	4.8	5.2	5.1	6.0	2.7	5.9		
Estes Generation	126.1	3.7	12.4	9.6	8.1	6.6	12.0	11.5	12.8	12.5	14.9	7.5	14.5		
Divertible Big-Thompson 43.0		0.4	0.3	0.0	0.0	0.0	0.0	0.3	5.1	22.1	10.7	2.6	1.5		
Diverted Big-Thompson Water	1.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	1.3	0.0		
Olympus Tunnel	213.3	6.6	14.5	16.7	20.0	14.9	26.9	25.2	27.7	30.7	30.1	15.0	22.9		
Pole Hill Generation 174.6		3.9	9.4	10.9	13.6	9.4	19.3	18.0	20.1	22.4	21.6	10.0	16.0		
Flatiron 1 & 2 Generation 214.2		5.3	12.7	13.6	15.8	10.5	23.9	22.8	26.2	25.4	24.3	13.6	20.1		
Flatiron 3 Turbine Release	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Flatiron 3 Kwh/AF Gen.		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Flatiron 3 Generation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Flatiron 3 Pumping	138.5	4.0	7.3	2.6	2.3	2.5	24.5	23.3	22.0	20.2	16.4	7.1	6.3		
Flatiron 3 Kwh/AF Pump		250.0	246.6	230.8	260.9	240.0	261.2	287.6	309.1	316.8	323.2	295.8	285.7		
Flatiron 3 Pump Energy	40.1	1.0	1.8	0.6	0.6	0.6	6.4	6.7	6.8	6.4	5.3	2.1	1.8		
CARTER LAKE															
Pumped from Flatiron	138.5	4.0	7.3	2.6	2.3	2.5	24.5	23.3	22.0	20.2	16.4	7.1	6.3		
Release to Flatiron	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Irrigation Delivery	90.8	9.3	2.3	2.1	2.2	1.4	2.2	2.6	7.2	14.7	19.7	16.6	10.5		
Evaporation & Seepage	1.8	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4	0.5	0.2	0.2		
End of Month Content	20.2	14.2	18.4	18.6	18.3	19.1	40.3	59.5	72.8	76.7	71.3	60.2	53.4		
BIG THOMPSON POWERPLANT															
Diverted Dille Tunnel Water	69.7	1.6	12.9	5.8	0.0	0.0	0.0	1.0	0.9	10.7	18.7	7.3	10.8		
Irrigation Delivery	30.56	1.7	0.01	0.01	0.02	0.01	0.01	0.4	5.8	3.5	2.9	4.5	11.7		
Turbine Release	38.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	15.3	7.2	10.4		
Generation	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	2.3	0.9	1.5		
HORSETOOTH RESERVOIR															
Hansen Feeder Canal Inflow 121.8		3.4	20.6	20.3	17.1	12.0	2.2	1.8	3.3	5.3	14.7	7.1	14.0		
Irrigation Delivery	109.7	20.2	1.1	1.0	1.0	1.1	1.3	2.1	13.7	8.6	16.3	17.9	25.4		
Evaporation	4.0	0.2	0.1	0.0	0.0	0.0	0.1	0.6	0.6	0.7	0.8	0.5	0.4		
End of Month Content	80.6	61.8	81.4	100.8	116.9	127.5	127.4	125.8	113.6	110.8	106.7	93.6	80.0		
TOTAL CBT DELIVERY	231.0	31.2	3.4	3.1	3.2	2.5	3.5	5.1	26.7	26.8	38.9	39.0	47.6		

TABLE 3
PAGE 3 OF 3

PICK-SLOAN MISSOURI BASIN PROGRAM
WESTERN DIVISION WATER AND POWER SYSTEM
COLORADO-BIG THOMPSON PROJECT

2008 ACTUAL OPERATIONS

OR	WATER IN 1000 ACRE-FEET					***					ENERGY IN GWH			
	INITIAL TOTAL	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
BASE GENERATION														
Green Mountain	63.9	5.9	2.8	1.6	1.6	2.5	4.0	4.6	7.9	6.1	9.9	6.5	10.5	
Flatiron 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Big Thompson	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	2.3	0.9	1.5	
TOTAL	69.4	5.9	2.8	1.6	1.6	2.5	4.0	4.6	7.9	6.9	12.2	7.4	12.0	
LOAD FOLLOWING GENERATION														
Marys Lake	46.2	0.1	1.6	4.0	3.5	2.4	4.9	4.8	5.2	5.1	6.0	2.7	5.9	
Estes 126.1		3.7	12.4	9.6	8.1	6.6	12.0	11.5	12.8	12.5	14.9	7.5	14.5	
Pole Hill	174.6	3.9	9.4	10.9	13.6	9.4	19.3	18.0	20.1	22.4	21.6	10.0	16.0	
Flatiron 1 & 2	214.2	5.3	12.7	13.6	15.8	10.5	23.9	22.8	26.2	25.4	24.3	13.6	20.1	
TOTAL	561.1	13.0	36.1	38.1	41.0	28.9	60.1	57.1	64.3	65.4	66.8	33.8	56.5	
PUMP ENERGY														
Willow Creek	12.9	0.2	0.5	0.0	0.0	0.0	0.5	0.6	5.0	4.3	0.8	0.4	0.6	
Granby 35.2		1.1	4.5	3.8	3.4	2.6	4.7	4.2	1.5	0.1	2.8	1.9	4.6	
Flatiron 3	40.1	1.0	1.8	0.6	0.6	0.6	6.4	6.7	6.8	6.4	5.3	2.1	1.8	
TOTAL	88.2	2.3	6.8	4.4	4.0	3.2	11.6	11.5	13.3	10.8	8.9	4.4	7.0	
TOTAL GENERATION	630.5	18.9	38.9	39.7	42.6	31.4	64.1	61.7	72.2	72.3	79.0	41.2	68.5	
TOTAL GENERATION MINUS PUMP	542.3	16.6	32.1	35.3	38.6	28.2	52.5	50.2	58.9	61.5	70.1	36.8	61.5	

TABLE 4

COLORADO-BIG THOMPSON PROJECT
FLOOD DAMAGE PREVENTED IN WATER YEAR 2008

	Cumulative Total Prior to WY2007	WY2008	Cumulative Total Current
Granby, Willow Creek, Shadow Mountain and Grand Lake	\$288,200	\$8000.00	\$296,200
Green Mountain	\$105,100	\$1,000.00	\$106,100
Total	\$393,300	\$9,000.00	\$402,300

RECLAMATION

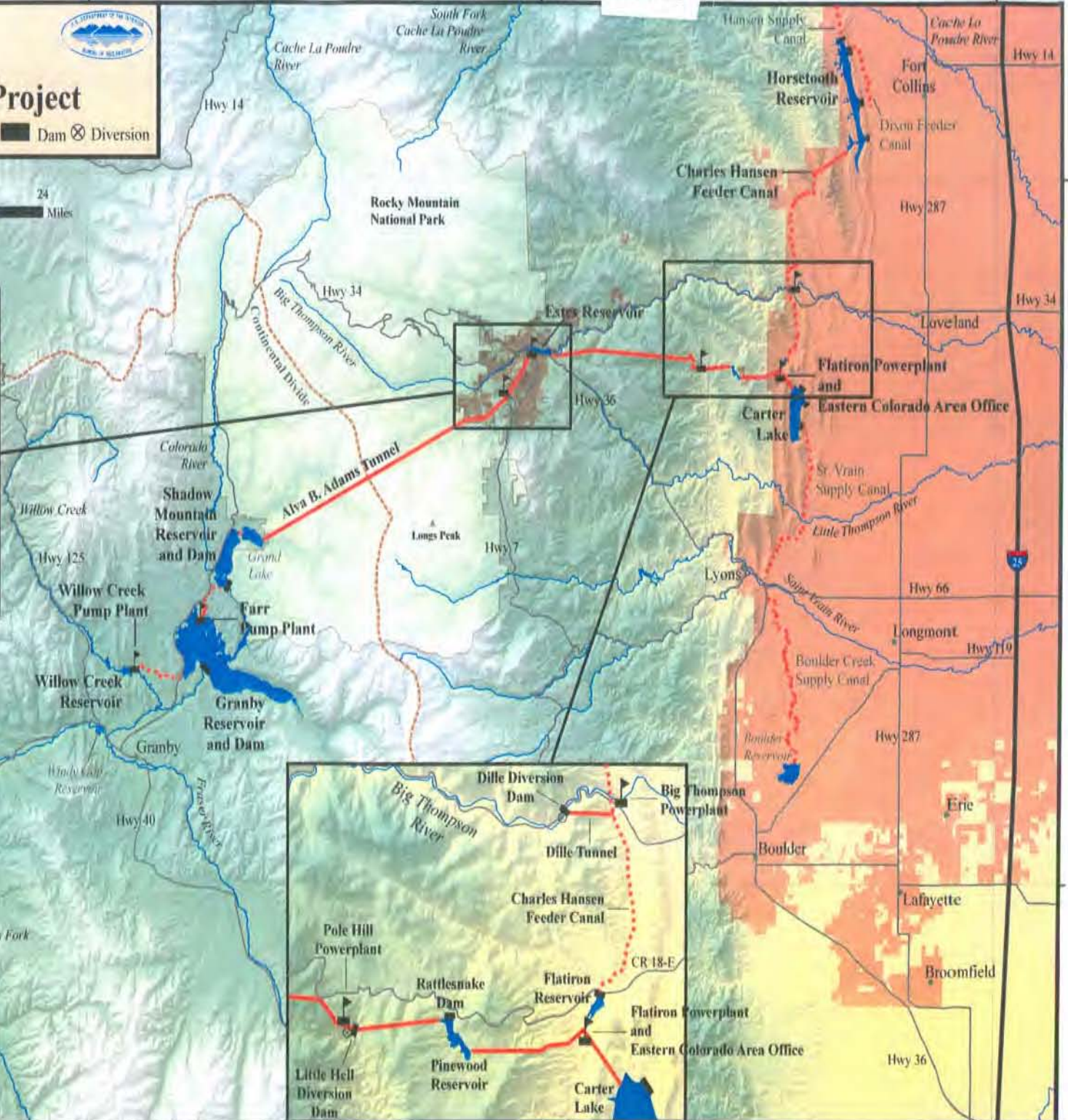
Managing Water in the West

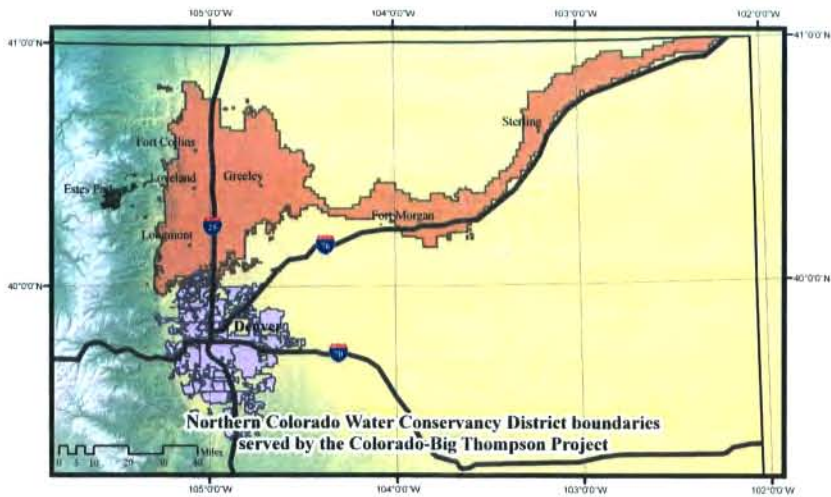
Colorado-Big Thompson Project

— Conduit or Tunnel - - - - Canal ■ Project Service Area ■ Dam ⊗ Diversion



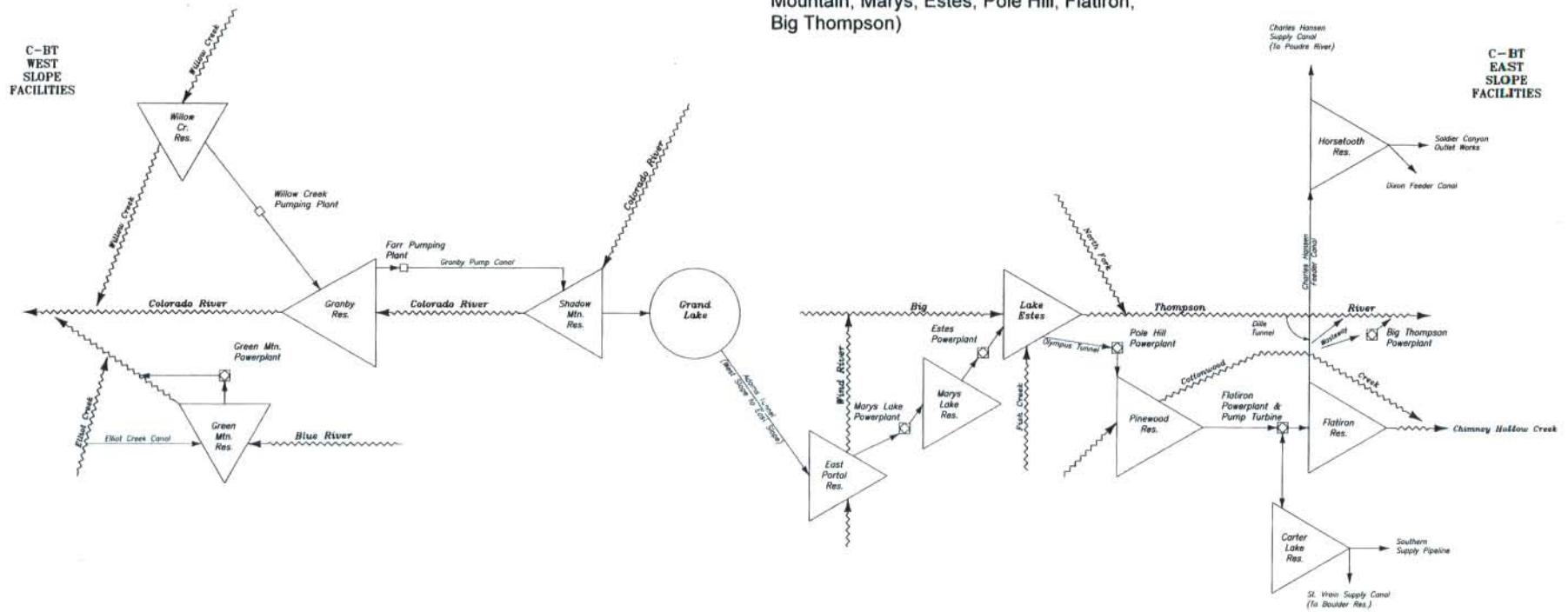
Exhibit I

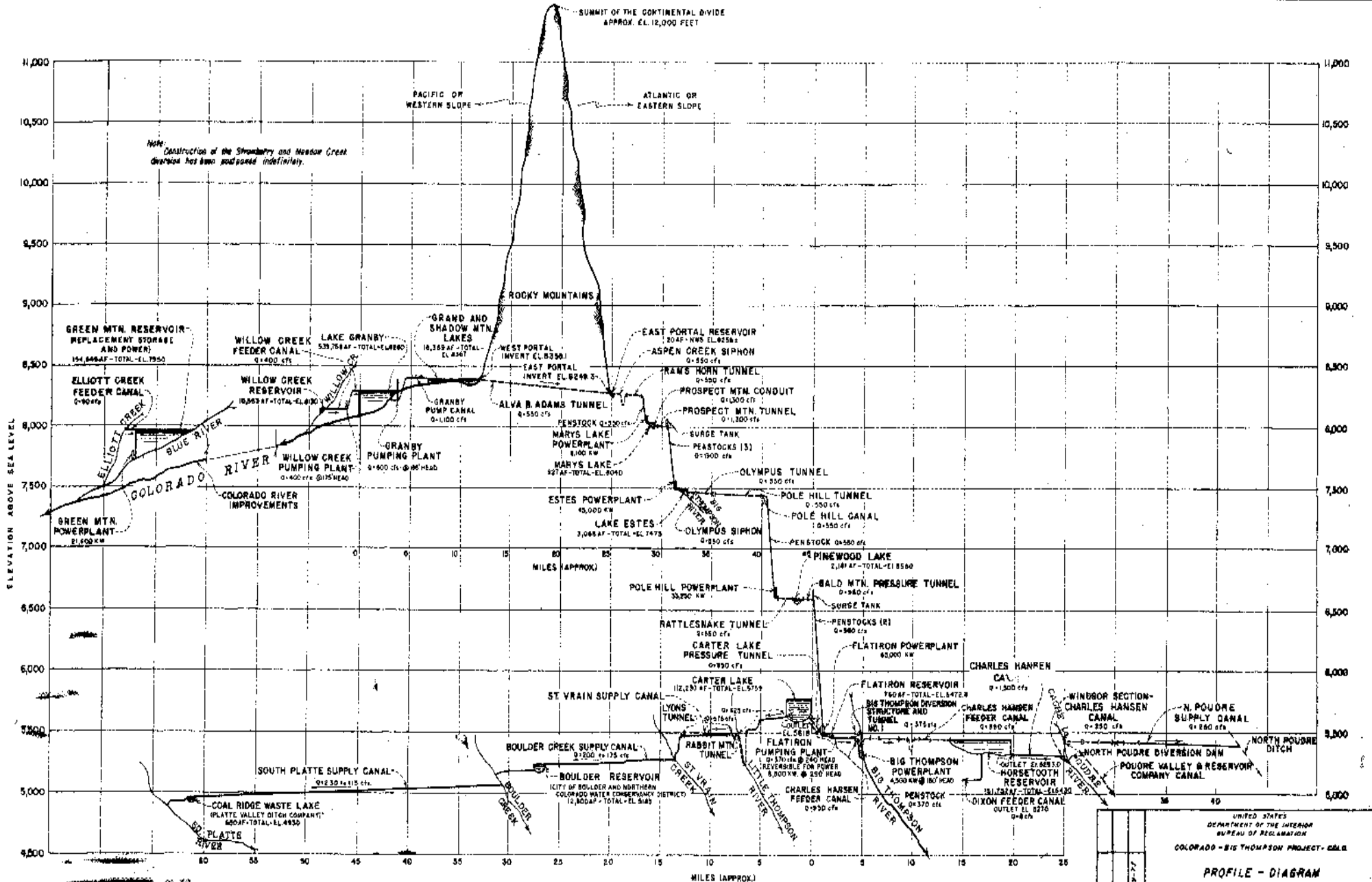




Colorado-Big Thompson Facts

- A trans-mountain, trans-basin water diversion, storage, and delivery project
- Signed into law by President Roosevelt in 1937
- Construction period: 1938-1952
- Ten major reservoirs (Green Mountain, Willow Creek, Granby, Shadow Mountain, Marys Lake, Estes, Pinewood, Carter, Flatiron and Horsetooth)
- Twenty major dams and dikes
- Twenty-two tunnels, canals and other conduits covering about 130 miles
- Six hydroelectric powerplants (Green Mountain, Marys, Estes, Pole Hill, Flatiron, Big Thompson)
- Water right allows for diversion of up to 310,000 acre-feet of water a year
- Average annual diversion over life of project is 260,000 acre-feet
- Water falls over 2000 feet from Continental Divide to Colorado's eastern Plains, providing for hydroelectric power generation.
- Together, all six powerplants generate approximately 759 million kilo-Watt hours of electricity a year—enough to power 58,300 American homes for a year.
- The C-BT provides water to 29 cities and towns, including 620,000 irrigated acres and a population of 725,000 people





NOTE: Construction of the Strawberry and Meadow Creek Diversion has been postponed indefinitely.

NOTE: All water surface elevations for reservoirs refer to maximum operating water surfaces.

EXPLANATION: --- Underground, as buried conduit, siphon, or tunnel

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
COLORADO - BIG THOMPSON PROJECT - CMB

PROFILE - DIAGRAM

DRAWN: C.R.W. SUBMITTED: 6/2/24
 TRACED: J.P. (SPR) RECOMMENDED: [Signature]
 CHECKED: [Signature] APPROVED: [Signature]
 DENVER, COLORADO FEB 24, 1938 248-104-2704

WESTERN DIVISION POWER SYSTEM WATER YEAR 2008 – GENERATION AND PUMP ENERGY SUMMARY

The total hydropower generation produced by Colorado-Big Thompson Project (C-BT) powerplants during water year 2008 was 105% of average. The Western Division Power System's (System) gross power generation for the water year was 2454.1 GWh or 93% of average. The System's total generation (gross generation minus the energy used for pumping at Farr Plant, Willow Creek pump, Flatiron unit #3 and Mount Elbert's) was 1901.8 GWh.

Total generation is the gross generation less the energy used for pumping; gross generation also includes one-half of the Yellowtail generation. The total System load includes firm energy deliveries, C-BT use energy, support energy, plant station service, and an estimate of transmission system losses. The Western Division Power System boundaries are illustrated in Exhibit 1. Table 1 in this section includes the total generation for every powerplant in the system. Table 3 shows monthly generation and pumping energy, by plant, as well as monthly System loads for the water year. The total energy that was required to operate the pumps in the System is included in Table 2. The numbers included in this section were provided by Western Area Power Administration.

Inflow for the C-BT collection system over the west slope was high during the spring and summer, especially for Green Mountain Reservoir. There were near-record snowpack readings at some location over the west slope in the spring of 2008. The runoff conditions combined with high demands for C-BT water during the spring and summer months from the east slope produced conditions that required prolonged water diversions through Adams Tunnel. Pumping at the Willow Creek Canal, the Farr Plant, and the Flatiron Powerplant was significant as C-BT diversions continued through the summer months. The energy used at those three plants to pump C-BT water during water year 2008 totaled 88.2 GWh. That represents 140% of the 30-year average. The total energy used from the System to pump water during water year 2008 totaled (including Mount Elbert) 552.37 GWh. That pumping energy total represents 225% of the 30-year average.

The Western Area Power Administration's Loveland Area Office sold 2,658,000 mega-watt-hours (MWh) of power during water year 2008 for a total of \$83,510,000 (numbers provided by Western Area Power Administration). Energy deficits were covered by a combination of scheduled interchange energy, use of the Mount Elbert pumped storage plant, and power purchases. The Western Area Power Administration's Loveland Area Office power purchases totaled 677,000 MWh during water year 2008, for which they paid a total of \$46,119,000 (numbers provided by Western Area Power Administration).

TABLE 1

WESTERN DIVISION SYSTEM
GROSS GENERATION - WATER YEAR 2008
(Energy in GWh)

Powerplant	Accumulated Gross Generation <u>1/</u>		
	WY 2008	Yearly Avg. <u>2/</u>	Percent of Avg.
Green Mountain	63.9	51.9	123
Marys Lake	46.2	37.3	124
Estes	126.1	100.3	126
Pole Hill	174.6	172.3	101
Flatiron 1 & 2	214.2	226.7	94
Big Thompson	5.5	10.9	50
Seminole	115.7	132.5	87
Kortes	140.8	140.3	100
Fremont Canyon	162.1	239.6	68
Alcova	82.5	118.1	70
Glendo	69.7	80.3	87
Guernsey	17.4	19.4	90
Boysen	40.9	69.3	59
Heart Mountain	16.6	15.2 <u>3/</u>	109
Buffalo Bill	70.2	69.4 <u>3/</u>	101
Shoshone	20.6	20.4 <u>3/</u>	101
Spirit Mountain	14.5	14.0 <u>3/</u>	104
Mt. Elbert	374.4	169.0 <u>4/</u>	222
Yellowtail ^{4/}	698.2	959.0 <u>5/</u>	73
Total	2454.1	2645.9	93

1/ October-September

2/ 1976-2005 average

3/ 1995-2005 average

4/ 1990-1999 average

5/ 1971-1990 average; one-half of the Yellowtail energy is dedicated to the Western Division System through marketing arrangement. The other half is marketed through the Eastern Division System.

TABLE 2

WESTERN DIVISION SYSTEM
PUMP ENERGY-WATER YEAR 2008

Pumping Plant	October-September Pump Energy		
	WY2008 (GWh)	Avg. <u>1</u> / (GWh)	Percent of Avg.
Willow Greek	12.9	5.7	226
Granby (Farr Plant)	35.2	30.6	115
Flatiron Unit #3	40.1	26.8	150
Mt. Elbert	464.1	182.1 <u>2</u> /	255
Total	552.3	245.2	225

1/ 1976-2005 average

2/ 1990-1999 average

**PICK-SLOAN MISSOURI BASIN PROGRAM WESTERN DIVISION POWER SYSTEM
WATER YEAR 2008 OPERATIONS
GROSS GENERATION LESS PUMPING IN GIGAWATT-HOURS**

OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Mt. Elbert *	0.7	6.5	6.1 4.3 3.6		6.9 6.3 0.6			7.1 7.6 1.3			0.0	51.1
Green Mtn.	5.9	2.8	1.6 1.6 2.5		4.0 4.6 7.9			6.1 9.9 6.5			10.5	63.9
Willow Cr. pump	0.2	0.5	0.0 0.0 0.0		0.5 0.6 5.0			4.3 0.8 0.4			0.6	12.9
Farr pump	1.1	4.5	3.8 3.4 2.6		4.7 4.2 1.5			0.1 2.8 1.9			4.6	35.2
Marys Lake	0.1	1.6	4.0 3.5 2.4		4.9 4.8 5.2			5.1 6.0 2.7			5.9	46.2
Estes	3.7	12.4	9.6 8.1	6.6	12.0 11.5 12.8			12.5 14.9	7.5		14.5	126.1
Pole Hill	3.9	9.4	10.9 13.6	9.4	19.3 18.0 20.1			22.4 21.6 10.0			16.0	174.6
Flatiron 1&2	5.3	12.7	13.6 15.8 10.5		23.9 22.8 26.2			25.4 24.3 13.6			20.1	214.2
Flatiron 3	0.0	0.0	0.0 0.0 0.0		0.0 0.0 0.0			0.0 0.0 0.0			0.0	0.0
Flatiron 3 pump	1.0	1.8	0.6 0.6	0.6	6.4 6.7 6.8			6.4 5.3 2.1			1.8	40.1
Big Thompson	0.0	0.0	0.0 0.0 0.0		0.0 0.0 0.0			0.8 2.3 0.9			1.5	5.5
Seminole	4.0	3.5	3.7 3.8 3.6		3.7 9.5		18.2	22.1 21.1	15.4		7.1	115.7
Kortes	5.7	5.2	5.5 5.6	5.1	5.5 12.7 23.0			25.1 22.7 16.7			8.0	140.8
Fremont Canyon	3.1	4.9	5.4 5.0	4.7	7.6 24.5 25.5			13.3 31.1 26.1			10.9	162.1
Alcova	4.3	2.9	3.0 3.0	2.8	4.1 10.9 14.9			5.9 14.0 11.6			5.1	82.5
Glendo	0.0	0.0	0.0 0.0 0.0		0.0 1.7		13.1	11.0 23.2	18.4		2.3	69.7
Guernsey	0.0	0.0	0.0 0.0 0.0		0.0 1.0 4.5			4.2 2.2 4.2			1.3	17.4
Pilot Butte **	0.7	0.0	0.0 0.0 0.0		0.0 0.0 0.0			0.0 0.2 0.6			0.5	2.0
Boysen	1.3	1.6	1.4 1.6 1.3		1.5 2.2 4.6			9.1 6.9 5.7			3.7	40.9
Shoshone	1.6	1.7	1.1 1.2 1.4		1.6 1.8 2.0			1.9 2.2 2.1			2.0	20.6
Buffalo Bill	1.1	0.0	0.0 0.0	0.0	0.0 4.9		13.1	12.8 13.4	12.9		12.0	70.2
Spirit Mtn.	1.0	0.0	0.0 0.0 0.0		0.0 0.0 1.8			2.5 3.2 2.9			3.1	14.5
Diamond Cr. pump	0.0	0.0	0.0 0.0	0.0	0.0 0.0 0.0			0.0 0.0 0.0			0.0	0.0
Heart Mtn.	0.9	0.0	0.0 0.0 0.0		0.0 0.3 3.4			3.1 2.8 2.8			3.3	16.6
Yellowtail/2	13.3	16.8	19.9 19.0 17.8		18.3 16.9 26.4			86.9 57.1 28.6			28.3	349.1
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Fry-Ark	0.7	6.5	6.1 4.3 3.6		6.9 6.3 0.6			7.1 7.6 1.3			0.0	51.1
CBT	16.6	32.1	35.3 38.6 28.2		52.5 50.2 58.9			61.5 70.1 36.8			61.5	542.3
North Platte	17.1	16.5	17.6 17.4 16.2		20.9 60.3 99.2			81.6 114.3 92.4			34.7	588.2
Bighorn	19.9	20.1	22.4 21.8 20.5		21.4 26.1 51.3			116.3 85.8 55.6			52.9	513.9
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TOTAL GEN	54.3	75.2	81.4 82.0	68.5	101.7 142.9 210.0			266.5 277.8 186.1			149.1	1695.5
TOTAL LOAD	162.5	162.3	177.2 172.6 137.1		149.2 176.3 184.8			211.2 262.2 211.2			156.8	2163.4
SURPLUS/DEFICIT	-108.2	-87.1	-95.8 -90.6	-68.6	-47.5 -33.4 25.2			55.3 15.6	-25.1		-7.7	-467.9

Table 5

COLORADO-BIG THOMPSON AND FRYINGPAN-ARKANSAS PROJECTS MAINTENANCE SCHEDULE FOR WATER YEAR 2008

Facility	Description of outage	Begin date	Ending date	Power Generation Affected	Water Deliveries Affected
Marys Lake Plant	Annual Maintenance	Mon 10/26/09	Fri 12/4/09	Yes	No
Estes Units #1	Annual Maintenance	Mon 1/12/09	Fri 2/20/09	partial	No
Estes Units #2	Annual Maintenance	Mon 3/2/09	Fri 4/10/09	partial	No
Estes Units #3	Annual Maintenance	Mon 4/13/09	Fri 5/22/09	partial	No
Flatiron Units - 1 & 2	Power Constraint	Fri 1/2/09	Mon 9/28/09	partial	partial
Flatiron Unit 1	Unit Rewind	Mon 1/5/09	Sun 8/30/09	Yes	partial
Flatiron Unit 2	Annual Maintenance	Thu 10/1/09	Sun 11/1/09	partial	No
Flatiron Unit 3	Annual Maintenance	Mon 4/20/09	Fri 5/29/09	No	No
Pole Hill Unit	Annual Maintenance	Mon 11/2/09	Fri 12/4/09	Yes	Yes
Big T Unit	Annual Maintenance.	Mon 2/9/09	Fri 3/20/09	No	No
CHFC (550 section)	NCWCD Maintenance	Mon 9/7/09	Fri 9/18/09	No	partial
CHFC (930 section)	NCWCD Maintenance	Fri 4/3/09	Fri 4/17/09		
Green Mtn Unit 1	Annual Maintenance	Mon 2/9/09	Thu 3/19/09	No	No
Green Mtn Unit 1	Excitation Contract	Mon 2/9/09	Thu 3/19/09	No	No
Green Mtn Unit 1	Transformer KZ1A/WAPA	Mon 3/23/09	Thu 3/26/09	No	No
Green Mtn Unit 2	Annual Maintenance	Mon 12/1/08	Thu 1/22/09	No	No
Green Mtn Unit 2	Excitation Contract	Thu 1/1/09	Thu 1/22/09	No	No
Green Mountain	Spillway Repair	Thu 1/1/09	Sun 12/6/09	No	No
Mt. Elbert Units 1&2	Power Constraint	Mon 12/1/08	Thu 12/31/09	Yes	No
Mt. Elbert Unit 1	Repair Rotor Arms	Mon 12/1/08	Tue 3/31/09	Yes	No
Mt. Elbert Unit 2	Annual Maintenance	Mon 11/1/09	Thu 12/10/09	Yes	No
Mt. Elbert Unit 1	Unit Breaker - SF-6	Mon 5/25/09	Fri 6/5/09	Yes	No
Mt. Elbert Unit 2	Unit Breaker - SF-6	Mon 11/9/09	Fri 11/20/09	Yes	No

TABLE 6

WESTERN DIVISION - PICK-SLOAN MISSOURI BASIN PROGRAM

POWERPLANT DATA

Facility	No. Units	Capacity Each Unit	Total Installed Capacity	Normal Operating Head (ft)	Output at Rated Head (ft ³ /s)
Green Mountain	2	13,000	26,000	192-262	1,660
Marys Lake	1	8,100	8,100	202-217	550
Estes	3	16,500	49,500	551-571	1,300
Pole Hill	1	33,250	33,250	830-838	550
Flatiron	2	43,000	86,000	1,096 - 1,118	1,070
(Flatiron <u>1</u> /)	1	8,500	8,500	158-287	440
Big Thompson	1	5,300	5,300	183- 184	350
Seminole	3	15,000	45,000	97-227	2,850
Kortes	3	12,000	36,000	192-204	2,700
Fremont Canyon	2	33,000	66,000	247-363	2,200
Alcova	2	18,000	36,000	153-165	2,200
Glendo	2	19,000	38,000	73-156	2,800
Guernsey	2	2,400	4,800	89-91	820
Pilot Butte ² /	2	800	1,600	-- --	---
Boysen	2	7,500	15,000	72-112	2,415
Shoshone ³ /	1	3,000	3,000	-- --	---
Buffalo Bill ³ /	3	6,000	18,000	-- --	---
Heart Mountain	1	5,000	5,000	265-275	355
Mt. Elbert	2	103,000	206,000	447-477	6,400
Yellowtail	4	72,000	288,000	327-440	8,500
TOTAL	34	-----	979,050	-----	-----

TABLE 7

WESTERN DIVISION - PICK-SLOAN MISSOURI BASIN PROGRAM

PUMPING PLANT DATA

Facilities	<u>Pumping Units</u>		<u>Plant Rating</u>		Kwh to Pump 1-Acre-ft at Maximum Head
	No	Capacity (ft ³ /s)	Normal Operating Head (ft)	Installed (Hp)	
Granby	3	600	92-186	18,000	227
Willow Creek	2	400	167-169	18,000	227
Flatiron	1 <u>1</u> /	440	173-287	13,000	391
Mt. Elbert	2	5,690	447-477	340,000	620

LAP GROSS GENERATION LESS PUMPING
WATER YEAR 2008

