

Clark Canyon Water Supply Company 2004 Water Conservation Plan



I. DESCRIPTION OF THE COMPANY

A. General Description

The East Bench Unit of the Pick-Sloan Missouri Basin Program is in southwestern Montana, along the Beaverhead River. The unit provides supplemental irrigation service to 24,848 acres and 3,156 acres which receive no additional water because early priority water rights provide an adequate supply. Principal features include Clark Canyon Reservoir, Barretts Diversion Dam, East Bench Irrigation District and Clark Canyon Water Supply Company (CCWSC).

Clark Canyon Dam has been constructed at the head of the Beaverhead River to impound surplus flows of Horse Prairie Creek and Red Rock River, which join to form the Beaverhead River. Water stored at Clark Canyon Reservoir is released into the Beaverhead River for downstream irrigation.

Barretts Diversion Dam, 11 miles downstream Clark Canyon Dam, diverts water from the Beaverhead River to the East Bench Canal and the Canyon Canal.

B. Physical Features

1. Clark Canyon Dam and Reservoir

Clark Canyon Dam is constructed at the head of the Beaverhead River. The zoned earth filled dam has a structural height of 147.5 feet, a crest length of 2,950 feet, and a volume of 1,970,000 cubic yards of material. The spillway consists of an approach channel, a concrete inlet channel, a non-gated concrete crest, a concrete chute, a concrete stilling basin, and an outlet channel. The outlet works consist of an approach channel, a concrete intake structure, a concrete conduit, a gate chamber with four 3 by 6.5 foot high-pressure gates, two of which serve for emergency ahead of the regulating gates; a concrete access shaft and shaft house; and a concrete stilling basin. The outlet works and spillway share the outlet channel.

Clark Canyon Reservoir has a total capacity of 257,152 acre-feet which includes an active capacity of 126,117 acre-feet, a joint use capacity of 50,436 acre-feet, and an exclusive flood control capacity of 79,090 acre-feet as well as dead storage and inactive storage capacities. The reservoir surface area is 5,903 acres.

2. Barretts Diversion Dam

Barretts Diversion Dam is concrete, gated structure with embankment wings on the Beaverhead River 8 miles southwest of Dillon, Montana. The spillway capacity is 2,500 cubic feet per second, controlled by one 24 by 10 foot radial gate. The sluiceway is controlled by one 8 by 10 foot radial gate. The headwork capacity of East Bench Canal is 440 cubic feet per second, and is controlled by two 10 by 8 foot radial gates. The Canyon Ditch Canal headwork capacity is 200 cubic feet per second, controlled by one 10 by 8 foot radial gate. A fish excluder is upstream of the canal headworks.

3. Table of Ditches and Canal Companies

There is a total of 70 diversion points from the Beaverhead River for CCWSC Water Users. The following table is a list of all the diversion points from the river. For each diversion point, the table includes the name of the associated ditch, operating company or water user, location, and quantity of water right.

Table 1 – Ditches and Canal Companies

<i>Diversion Ditch</i>	<i>Water User or Company</i>	<i>Location</i>	<i>Capacity</i>
HILDRETH	Joachim Kempin		
HENNEBERRY SPRINGS	Steve Carl		
MIDGE-HENNEBERRY	Steve Carl		
	Tom Rice		
RICE-BLM	B.L.M. Land (Ney)		
	Tom Rice		
RIVER	Gary Williams		
SMITH-REBICH	Tommerup		
	Bolick/Schuett		
	Harrington (Swenson)		
	Harrington(Schonenberger)		
EAST BENCH			
CANYON DITCH			
BARRETT'S (OUTLAW)	Bolick/Schuett		
PERKINS	Seyler (NS)		
	Seyler Ranch		
	Marshall (NS)		
	Steve Jenkins (Sub)		
	Platt/McWilliams		
SCHULTZ	Berg/Schuett		
HORTON-HAINDS	Rice		
RIVER	Rebich & Sons		
RIVER	Godecke, P		
	Gribble/Renfree		
RIVER	Keith Peters		
RIVER	Rorabaugh		
VAN CAMP	Ed Stefonic		
	Val Prophet		
	Ron Johnson		
	Bill Tash, Jr.		
	Wheat Inc.		

<i>Diversion Ditch</i>	<i>Water User or Company</i>	<i>Location</i>	<i>Capacity</i>
DILLON CANAL			
OWEN	Roger Cleverly		
	Plutt (NS)		
	Phil Taylor		
	John Arrigoni (NS)		
	John Arrigoni		

DRAFT

<i>Diversion Ditch</i>	<i>Water User or Company</i>	<i>Location</i>	<i>Capacity</i>
WESTSIDE CANAL			
DILLON STATION			
OLD UNION	Harris Wheat		
	John Erb		
GUIDICI	Non-singers .025		
	Denton/Hassler .006		
	Christianson .022		
	Maddock .004		
	Tolman .875		
	Erhenberg .002		
	Thompson .004		
	Donnelly .006		
	Harrison .037		
	Nelson .004		
	Lemhouse .015		
PORCH-INNES	Craig Hansen		
	Wade Hansen		
	Joe Morstein		
	Emory Rouse		
	Craig Hansen		
PORCH-BLEVIN (Taylor Subdivision) Alottment 288.6a/f Acres 72.15	Allen		
	Bianchi/Bullard		
	Daenzer		
	Hawkins		
	Holland		
	Nemeth		
	Nichols		
	Pellett		
	Pierce		
	Miller, Otto		
	Robinson & Hardacre		
	Rowe		
	Snowden		
	Tinsley		
CLARK BISHOP	Rebish, Jane/Taylor		
SELWAY SLOUGH Porch-Blevin (Ibey Subdivision)	Walker, I		
	Laknar, L		
	Sawyer, T		
	McClure, J		
	Stoddard, S		
	Rouse, Clint & Pierce		
HAYDEN-MORTON	Erb, C		

<i>Diversion Ditch</i>	<i>Water User or Company</i>	<i>Location</i>	<i>Capacity</i>
	Nicholas, JP		
	Jarvis, Lane		
	Wright, J/Lower		
	McClinch		
	Hayden, A		
	Meine Brothers		
REINHARD	Edwards		
	Gutzner		
	Shannon		
	Lindroth		
	Macioroski		
	Probst		
	Clark		
	Yahraes		
	Shield		
	Pence		
	Owenby		
	Coleman		
	Waylette		
	Wardwell		
	Webster, T		
	Webster, R		
RIVER	McCollum, J		
STODDEN DITCH	Mussard, W		
	Konen & Rebish		
LOWER RIVER	Laden, K (NS)		
	McClinch		
CARTER SLOUGH	McClinch		
STODDEN SLOUGH	McClinch		
BURFIEND-DAVIS	Rebish/Konen		
	Hull (NS)		
	McClinch		
	Leap (NS)		
	Mull (NS)		
	Williams (NS)		
	Haugland (NS)		
	Cossell (NS)		
	Barnes, Ray (NS)		
	Leap Rental (NS)		
STODDEN SLOUGH	Leap (NS)		
HAYSTACK #1	Rebish/Konen		
HAYSTACK #2	Leap		

<i>Diversion Ditch</i>	<i>Water User or Company</i>	<i>Location</i>	<i>Capacity</i>
	McClinch		
SW OF HOUSE	McClinch		
HAYSTACK #3	Jones, A		
STODDEN SLOUGH Ball Ditch Carter River	McClinch		
SELWAY DITCH West of River	Schulz, Earl (NS)		
	Dooling (NS)		
JOHNSON	Keller (NS)		
	Erb (NS)		
	Laden, K (NS)		
	Malesich (Smith)		
BILLY WOODS	Erb (NS)		
ISLAND DITCH	Malesich (Smith)		
MURRAY SLOUGH	Erb (NS)		
	Meine Brothers (NS)		

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<i>Diversion Ditch</i>	<i>Water User or Company</i>	<i>Location</i>	<i>Capacity</i>
STAUDAHER/BISHOP	Malesich		
	Malesich		
	Geoduck LLC		
ANDERSON LANE			
STAUDAHER 1872	Malesich		
	MT Trout Club		
	MT Trout Club (NS)		
ALDERS SLOUGH	Erb (NS)		
DRUMMY #1	Van Deren (NS)		
DRUMMY #2	Van Deren (NS)		
ALBERS SWAMP	Van Deren (NS)		
ALBERS SPRING	Van Deren (NS)		
ALBERS RIVER	Van Deren (NS)		
SLOUGH DITCH	Geoduck LLC		
BROWN	Geoduck LLC		
STAUDAHER WEST	Geoduck LLC		
STAUDAHER EAST	Geoduck LLC		
STAUDAHER SWAMP	Geoduck LLC		
MAILEY DITCH (Ditch is gone)	Town, Karen		
	Goodman, C		
	Merrick and Guinard		
CO-OP CANAL			
BLAINE STATION RIVER	USGS Reading		
	Beaverhead Ranch LLC		
MULESHOE CANAL	Davis 0.58		
	Osborne 0.15		
	Morris 0.07		
	Broksle 0.17		
	Smith/Osborne 0.03		
BAKER DITCH	Giem (NS)		
	Hughes		
	Sitton, Michael		
	Delaney		
	Fournier		
	Garth (NS)/Nyhart		
	Lasich, Doug (NS)		
EAST RIVER	Garth, H/Dan High		
SEIDENSTICKLER	Potter, Gene		
BROKSLE	Potter, Gene		
GIEM	Giem		

NS = non-singer

C. Company Organization

1. Clark Canyon Water Supply Company, Inc.

Clark Canyon Water Supply Company, Inc. was formed in 1956. The corporation was organized to contract with the United States for the regulation of the water to which its members have appropriate rights.

Clark Canyon Water Supply is located in southwestern Montana, on the Beaverhead River from Clark Canyon Reservoir to Giem Bridge, approximately 20 miles north of Dillon, Montana. It is part of the East Bench Unit which consists of two entities, CCWSC and the East Bench Irrigation District. CCWSC provides irrigation service to water users in the valley lands which adjoin the Beaverhead River. It is composed of 24,848 acres along with 3,156 acres of the non-signers, which do not receive supplemental water. Numerous canals and ditches run off the Beaverhead River to irrigate the valley lands. Some of the major ditches are the Canyon Ditch, Westside Canal, and Co-op Ditch

2. Distribution of Water

The following is a set of guidelines used by CCWSC for the distribution of water.

- a. The Board of Directors shall have the authority to file a request for a water commissioner for Beaverhead River, with the District Court on behalf of the entire membership of the Corporation.
- b. The Directors shall have the right to inspect at any and all times the measuring devices installed by the shareholders and may require at any time the installation, modification, repair or replacement of any unsuitable, inaccurate or defective measuring devices. If such installation, modification, repairs or replacements are not expeditiously instituted and diligently carried out, the Directors may do or have the required work done, and the shareholder shall pay the cost thereof as determined by the Board.
- c. No stockholder of this Company shall open, raise or tamper with his own or any head gate or other measuring device after the same has been fixed by the Water Commissioner, or interfere in any manner with the Water Commissioner or other agents of the Company in the discharge of their duties, and any stockholder so doing or permitting the same to be done by any of his agents or employees shall be subject to a penalty of \$50.00 for the first, \$75.00 for the second, and \$100.00 for any offense thereafter, to be fixed, determined and levied by the Board of Directors; said fine and penalty shall become and remain a lien upon all stock held by said stockholder until said fine and penalty is paid; and said fine may be recovered and said lien enforced by the Company in any court of competent jurisdiction. No penalty shall be assessed against any shareholder, his agent or other person, for changing, opening or closing any head gate which is done in order to preserve property and at a time of emergency. It shall be in the

discretion of the Directors of said Company to determine whether an emergency existed or not to justify such changing of head gates.

d. No water shall be delivered by the Clark Canyon Water Supply Company into any ditch of any shareholder until his annual payment to the Company has been made for his shares of stock purchased, together with payment in full of all assessments for operation and maintenance and administration expenses and all amounts due for measuring devices and fines.

e. No water shall be turned into the ditch of any shareholder except upon his request; and in all cases where tenants or lessees of any shareholder are in possession of his lands, such request to be served with water must be in writing, upon a form prescribed by the Board, and must be signed by the shareholder, or his agent, tenant or lessee.

f. It shall be the duty of the Water Commissioner to keep a written record of the amount of water each stockholder has received, which record shall be open to inspection of any stockholder.

g. The Company shall establish and maintain account and other books and records and furnish to the Secretary of Interior of the United States of America, reports and statements as to information contained therein pertaining to:

1. Accounts and financial transactions of the Company.

2. Corps raised and agricultural or livestock products produced on the lands of the Company's shareholders.

3. Irrigation water supply and the disposition thereof, a report thereon to be furnished to the Secretary of Interior annually on or before December 31, or such other date or dates as may be fixed the Secretary of the Interior.

2. Operating Agency of Clark Canyon Dam and Reservoir

Operation and maintenance functions of Clark Canyon Dam and Reservoir are being performed by the East Bench Irrigation District.

D. Development

1. History

Cattle were first raised commercially in 1847 in the Beaverhead Valley and agricultural settlement began as early as 1862. The local market for farm produce and cattle at that time was restricted to miners and Army personnel. The cattle industry became well established by 1879, the date of completion of the first railroad to the vicinity. Before the

railroad was built, overland cattle drives were made to Salt Lake City and other points to the south. Severe drought caused a setback in the cattle industry in 1886.

Farming was taken up in earnest in the early 1900's. Settlement was encouraged, in part as a result of vigorous campaigns by the railroads. The low rainfall and short growing season have tended to discourage farming operations, especially dry farming. As a result, livestock ranching is the predominant activity.

2. Investigations

The first comprehensive inventory of water resources relating to the Unit was made by the War Department during 1928- 1938, the Bureau of Reclamation began investigations that ultimately led to a reconnaissance report for the Missouri River and its tributaries. Field work was started in May 1940, and a draft of the report was completed in May 1943. Before construction of Clark Canyon Dam and the organization of the East Bench Unit, the Bureau of Reclamation conducted an in-depth study of the Beaverhead River for the period of 1910 to 1960. The study included historic river flows, water rights, water use and requirements, and historic accretions in various stretches of the Beaverhead River. The results of the study are in the East Bench Definite Plan Report. The document was required to obtain authorization and funding from Congress for the construction of Clark Canyon Dam. The final report was published in Senate Document 191 (78th Congress, 2d session). The East Bench Unit was included in the plan for the Pick-Sloan Missouri Basin Program (formerly Missouri River Basin Project) presented in this report. Following authorization of the Pick-Sloan Missouri River Basin Program, detailed and semi detailed investigations were begun throughout the basin. Investigations for the East Bench Unit were conducted in 1956.

The valley lands were organized under the Clark Canyon Water Supply Company for the purpose of contracting storage water from Clark Canyon Dam to supplement their water rights during periods of low flows and low water years. The study showed that water users with rights earlier than May 1, 1875 would not benefit from storage from Clark Canyon Dam. However, many of those having early rights chose to participate in the project realizing a dam would firm up the river flows and minimize the fluctuation from year to year, and through out the season.

3. Authorizations

The Unit features were authorized by the Flood Control Acts of 1944 and 1946 (58 Statue. 887 and 60 Statue. 641).

E. Benefits

1. Irrigated Crops and Acres

Clark Canyon Water Supply Company serves 28,004 acres. Those acres are primarily alfalfa and grass hay with a smaller percentage of cereal grain and potatoes. The balance is in irrigated pasture for livestock grazing.

2. Recreation, Fish and Wildlife

Recreation on Clark Canyon Reservoir and Barrett’s Diversion Dam, located on the Beaverhead River south of Dillon, Montana, and is managed by the Bureau of Reclamation. Clark Canyon Reservoir is the site of Camp Fortunate, one of the more significant spots along the Lewis and Clark Trail. It was at Camp Fortunate that the Lewis and Clark expedition met the Lemhi Shoshoni Tribe, and cashed their canoes and a stash of supplies for the return trip. Sacagawea was reunited with her people here.

The irrigation system has stabilized and enhanced the fishery along the Beaverhead River. It has also created a fishery in the Reservoir.

3. Flood Control

Controlled flows of the Beaverhead River at its head result in extensive flood control benefits downstream. Clark Canyon Reservoir has an exclusive flood control capacity of 79,090 acre feet. It also has replacement storage capacity of 56,475 acre feet allocated to assist with the flood and power operations of the Corps of Engineers Missouri River Main Stem System. It has a surcharge capacity of 71,827 acre feet and a total flood control capacity of 150,917 acre feet. As of 1998, the reservoir has reduced flood damages by about \$11.5 million.

F. Climatic Factors

The climate on the East Bench Unit is characterized by marked fluctuations. Short periods in summer are moderately hot. Temperatures as high as 100 degrees Fahrenheit have been recorded. Winters are usually cold with periods of exceedingly low temperatures. Table 1 provides a summary of the climatic data.

Table 2 - Climatic Data

Annual Precipitation ¹	
Normal	10.21 inches
Maximum – 1987	14.60 inches
Minimum – 1961	6.20 inches
Temperature ²	
Mean Annual	56.2° F.
Daily Maximum (7/20/1960)	101° F.
Daily Minimum (12/24/1983)	-37° F.
<u>Growing Season</u>	<u>95 days</u>

¹Dillon, MT 1961-1990

²Dillon, MT 1948-1992

G. Terrain and Soils

Soils of the Valley are in two major areas based on physical characteristics:

- A. The Blacktail Creek Fan
- B. The alluvial land along the Beaverhead

Most all of the arable soils south of Dillon occur on a gently sloping, broad alluvial fan deposited by Blacktail Creek as it enters the Beaverhead Valley. The soil and topographic features have a pattern which trends in a northwest-southeast direction parallel to the streams and deposition. Surface textures are loam or silt loam with local areas of fine sandy loam. The depth of surface soil usually ranges for 12-22 inches. Most subsoil is stratified with loam, fine sandy loam, or sandy loam, deposited over a gravelly loam, which becomes progressively sandier with depth and finally grades into clean sand with gravel at depths ranging from 18-36 inches. Igneous, sedimentary, and metamorphic gravel and pebbles are found over the entire area, with smooth and rounded quartzite gravel and cobbles being the most abundant. Numerous shallow, old stream channels meandering across the fan have shallow gravelly soils. The natural surface drainage of the Beaverhead Valley is controlled by the Beaverhead River and its outlet from the valley at the Beaverhead rock. The natural gradient of the river is 20 feet per mile. Channel erosion is controlled by the constriction in the bottomland at the Beaverhead Rock, and by the gravels and cobbles in the streambed.

H. Land Use

Land use on the valley bottoms is largely devoted to hay meadows, pastures, and other shallow-rooted crops that tolerate or require relatively shallow ground water in the types of soil which are dominant. Nearly all of the valley land is irrigated or sub-irrigated. Better land areas are cultivated in a grain, tame hay, and pasture rotation.

Table 3 – Average Monthly Crop Water Requirements

	Grass	Alfalfa	?	
Acres				
	Crop Rqmt. in.	Crop Rqmt. in.	Crop Rqmt. in.	Total Crop Rqmt, af
April				
May				
June				
July				
August				
September				
October				
Total				

I. Land Classification

The standards for East Bench Unit consider soils, topography, and drainage, and are based on average management practices and diversified farming. Before attempting to determine the limits for each land class, a study was made of the cropping practices, crop records, controlling economic factors, and soils, topography, drainage conditions of both the irrigated and the non irrigated land on the Unit. To check the standards and to determine the range of each topographic deficiency allowable in each class, a farm

budget analysis was made for each soil class using approved land use, crop yields and farm organization.

1. Land Classes

Class One (1) Land – Soils are deep, medium textured, readily permeable, and free of soluble salts. Topography is excellent for irrigation; slopes range from 1 to 2 percent, and surface irregularities are minor that surface smoothing will be enough to permit effective irrigation in fields of eight or more acres.

Class Two (2) Land – South of Dillon the usual Class 2 land has gravel at about 30 inches below the surface. This land is suitable for the same crops as Class 1 land. The sandy soils and the shallow soils over gravel require more water shorter runs, and more labor to maintain equivalent yields.

Class Three (3) Land – The usual Class 3 land south of Dillon is medium textured soil, 30 inches deep over gravel, lying on a slope of 1 percent, but its surface topography has an irregular pattern because of old channel marks. In the valley, the usual class 3 land has a moderately deep soil with little topographic deficiencies, but with a rather high water table. The class 3 land is used for hay and grain crops.

Class Four (4P) Land – All Class 4P land is in the supplemental irrigation service area. This land usually comprises extensive tracts of hay meadows and pastures on the valley floor where ground water is shallow during at least part of the season. Wild flooding or sup-irrigation is effective in maintaining growth and grasses and other shallow-rooted crops.

Class Six (6) or Six W (6W) Land – Class 6 includes dry land classified as non arable. Class 6W consists of poor quality irrigated land that does not meet the minimum requirements for arable land. The Class 6W land is intermingled with larger areas of arable land, mostly Class 4P land. Its main value is in providing winter-feeding for cattle and sheep.

Table 4 on the next page provides a summary of land class acreage served by CCWSC.

Table 4 – East Bench Unit Land Classification Summary – Supplemental Irrigation Service Area

	Class 1	Class 2	Class 3	Class 4P	Classes 1 – 4P	Class 6W	Classes 1 – 6W	Class 6 & R.O.W	Total
Survey area – Arable	5,458	7,110	5,742	12,507	30,817	2,567	33,384	19,989	53,373
Reduction of irrigated land that does not receive water from Beaverhead River and all non irrigated tracts	474	789	1,590	239	3,092	80	3,172		
Unit arable area	4,984	6,321	4,152	12,268	27,725	2,487	30,212		
Reductions in field review and during contract negotiations	306	391	332	967	1,996	212	2,208		
Unit net irrigated area	4,678	5,930	3,820	11,301	25,729	2,275	28,004		
Full supply – Class A* Stock	205	274	403	2,095	2,977	179	3,156		
Ply class – Classes B And C Stock	4,473	5,656	3,417	9,206	22,752	-	-		

*Because of early water rights, a supplemental supply of water is not needed.

II. Inventory of Water Resources

The Clark Canyon Reservoir serves two irrigation entities. They are the CCWSC which holds “senior” rights and the East Bench Irrigation District. The Clark Canyon Water Supply is made up from individuals owning water shares to the water in the reservoir. These individuals have turned their shares over to the CCWSC to manage. They use water from April 15 through October 15 but not during the winter months. There are five basic entities managed by the company.

A. Water Rights

The Bureau of Reclamation filed water rights for Clark Canyon Reservoir and East Bench Irrigation District in 1982 pursuant to Montana statute requiring water right claims to be filed with the Department of Natural Resources and Conservation. The claims will be finalized through the Montana Water Court in an adjudication process. The Beaverhead River Basin is a low priority for the State and Water Court compared to other basins in Montana, and it may be more than 10 years before an adjudication of Clark Canyon Reservoir and East Bench Irrigation District water rights will begin.

The water right claims for Clark Canyon Reservoir are for 257,152 acre feet of water from the Beaverhead River for irrigation, flood control, fish and wildlife, recreation, municipal and industrial, and other uses. The water right claims have February 21, 1961 priority dates. Historically, there was insufficient water in the Beaverhead River after snowmelt runoff to satisfy the water needs in the basin prior to construction of Clark Canyon Reservoir. This is evidenced by the fact that there is an existing old decree in the basin. Clark Canyon Reservoir was constructed to store water during periods of excess flow, normally spring snowmelt runoff, then release water to the Beaverhead River to provide water to East Bench Irrigation District. The Bureau of Reclamation also entered a contract with water users who had decreed water rights prior to construction of Clark Canyon Reservoir. This group of existing water users formed the CCWSC and entered a contract for supplemental water from the reservoir. The CCWSC is generally guaranteed 4 acre feet of water per acre by contract, which includes the amount of water diverted under their direct flow water rights.

Water can be stored under this right any time downstream senior rights are satisfied. The downstream fishery does not have a water right. However, releases as discussed under “Fish and Wildlife Consideration” will be made to maintain the fishery in the Beaverhead River if the release would not jeopardize the irrigation water supply. There is a minimum flow requirement of 25 cfs at the low point of the river, regardless of where that low point is. The operating agency has always cooperated and exceeded the minimum requirement for fishery and wildlife considerations.

B. Beaverhead River

The United States Geological Survey maintains a stream gauging station (Station 060160000) located just upstream from Barretts Diversion Dam. Annual records were kept from the establishment of the station in August 1907 through September 1986. Seasonal records have been kept from October 1986 through the present. The seasonal records are kept from March through October. Table 4 provides a summary of the stream gauging records from the station.

Table 5 - Beaverhead River at Barretts, MT

	Water Years ¹ 1908 -1964 (cubic feet per second)	Water Years ² 1908 – 1998 (cubic feet per second)
Annual Mean	401	441
Highest Annual Mean	738	1,101
Lowest Annual Mean	168	168
Instantaneous Peak Flow	3,720	3,720
Instantaneous Low Flow	69	69

¹Prior to Clark Canyon Dam Construction

²Period of annual and seasonal records

III. ANNUAL WATER BUDGET

A. Storage

The operation, maintenance, and replacement cost for storage includes the Unit's share of the OM&R cost of Canyon Ferry Dam and Reservoir, and the OM&R costs of Clark Canyon Dam and Reservoir and Barretts Diversion Dam. The CCWSC pays to the Bureau of Reclamation 21.6%. The year of 2002 costs totaled \$37,645.18.

The annual operation, maintenance, and replacement cost of Clark Canyon Dam and Reservoir, estimated at \$78,000, are divided amount irrigation, fish and wildlife, municipal, and flood control. Division of the cost among these purposes is bases on the determination of separable costs and the allocation of joint construction cost. Of the total OM&R cost, irrigation would share 60.1%, which is \$46,878; flood control, 29.3%, which is \$22,854; Municipal, .2%, which is \$156; and fish and wildlife, 10.4%, which is \$8,112.

B. Supplemental Service Land

The supplemental service land will be assessed only for a share of the OM&R cost of the supply system, exclusive of the OM&R cost assigned to irrigation from Canyon Ferry Dam and Reservoir. The repayment contract with the water users' corporation provides for payment of 36 percent of the OM&R cost of the supply system. The average rate per acre-foot of storage water required for pay class land is 13 cents. The total storage cost is exclusive of operation and maintenance of private ditches and diversions. On or before April 15 of each year of the term of the contract with the Bureau of Reclamation, the CCWSC shall pay to the United States the sum of \$29,000

IV. RESOURCE MANAGEMENT

Water management is a very important part of the Beaverhead River system. With the importance of water service contracts between the two organizations, CCWSC, the senior appropriation, and East Bench Irrigation District, the junior appropriator, it is critical to manage the river system to meet the needs of all the interests involved. Since the construction of the Clark Canyon Reservoir the Beaverhead River has become a world renowned blue ribbon trout stream, drawing fishing interest from all over the world. This has become a very important industry to the Dillon area. Storage and releases from Clark Canyon Reservoir are so managed to protect and balance water resources between all the interests in the watershed area.

One of the most controversial topics is the introduction of the Arctic Grayling to the Beaverhead River. The designated reintroduction site on the Beaverhead River encompasses the 40 miles of river between the confluence of Stodden Slough, downstream from Dillon, and the river's mouth at Twin Bridges. The dam at Barrett's Diversion would prevent grayling from straying upstream and entering the popular and highly productive trout fishery of the upper Beaverhead River. In order to survive, the grayling need a specific amount of water during the winter months in the river. It will be a challenge to the CCWSC to meet the needs of the Grayling and put the needs of the CCWSC first and foremost.

V. EXISTING WATER MANAGEMENT MEASURES AND PROGRAMS

A. Water Measurement and Accounting

The Company measures and accounts for their water all through the system. From the beginning of the river at Clark Canyon Reservoir to the Gies Bridges twenty miles north of Dillon, Montana, the River Commissioner records each diversion from the Beaverhead River.

B. Water Ordering Procedure

The water users contact either the River Commissioner of the District Unit Office generally by telephone to order water. They give their name and the location of their diversion point from the river by their ditch name. Daily logs are kept of water requests. During working hours, the water requests are radioed to the River Commissioner. Because of telephone-radio communication, the water user can be advised when water will be available. All water delivered is measured. Daily records are kept by the River Commissioner of all water delivered. Measurements are generally made three times each week. Monthly water use cards are mailed to each water user advising of the amount of water used each month, used to date, and amount remaining. The daily sheets are filled out by the River Commissioner so the water is all accounted for monthly.

Examples of water accounting sheets are included with the Water Conservation Plan.

C. Assessments

The Company's average year basic allotment is 4.0 acre feet per irrigable acre. For the basic allotment, the Company charges what is needed to meet the repayment of contract and the ongoing and maintenance program. The Company bills on an annual basis. In 2003, the Company charged \$3.50 for O&M/stock, Subscription costs were Class B stock at \$1.45 per stock and Class C stock at .50 per stock. Any combination of the B and C stocks is averaged out to come up with a subscription charge. Class A stock does not pay a subscription cost but it does pay O&M.

D. Review of Operation and Maintenance Program

1. Measuring Devices

The project has been in operation for over 30 years. Maintenance on measuring devices is on going. With on farm changes in irrigation equipment, it has become necessary for the Company to set policies concerning water measurement, insuring that all farms are measured correctly based on Company specifications.

2. Canal and Lateral Maintenance

CCWSC actively encourages all ditches and individuals to clean their appropriate laterals on the Beaverhead River system.

3. Aquatic Weed Control

Aquatic weed chemical is used annually for submerged vegetation to ensure ditch capacity to meet irrigation delivery demands. Some measures of excavation are also used. One is removing slit bars, which act as beds for tuber plants, which lay dormant during the winter months. When silt bars are removed, plants have a much more difficult time finding habitat to grow.

VI. WATER MANAGEMENT PROBLEMS AND OPPORTUNITIES

Headwaters flowing into the Clark Canyon Reservoir are stored for release into the Beaverhead River. Releases along with the return flows and accretions are used to deliver water to downstream irrigators. Water is then diverted into ditches and canals to supply water to the irrigable acres of CCWSC. Measuring devices are located at the point of diversion from the Beaverhead River for all ditches and canals. Water management and water efficiency are imperative to the proper use of water.

A. Water Management Problems and Opportunities

1. Water Measurement and Accounting

Problem

The Company currently measures the diversions from the Beaverhead River and appropriate sloughs by a River Commissioner. Measuring devices are either faulty, missing or inaccurate.

Opportunity

Management of the Company has set a goal of requiring all canals and ditches to have an accurate measuring device installed within the next two (2) years.

2. Water Supply

Problem

Changes of water use above the reservoir and drought conditions of the last four to five years in the Beaverhead area have decreased storage in Clark Canyon Reservoir.

Opportunity

At this time, there is no opportunity. We have no control over the drought and how water is used above the Clark Canyon Reservoir.

3. Accountable Acres

Problem

Due to new and innovative irrigation practices, there has been an increase of the number of acres being irrigated with the same amount of water.

Opportunity

CCWSC has been updating there farm unit maps and trying to identify the excess acres.

4. River System Automation

Problem

Due to the fluctuation of the flows from Grasshopper Creek into the Beaverhead River, it is impossible to be able to predict the flows of the Beaverhead River at any given time.

Opportunity

With the placing of a stream gaging station at a strategic point on Grasshopper Creek, releases from Clark Canyon Reservoir could be tightly monitored. Thus saving lost water downstream due to fluctuations.

5. Management Role**Problem**

CCWSC only meets once a year and is unable to effectively have a working knowledge of the river system.

Opportunity

CCWSC will meet more often to understand and become aware of the changing demands of the river system.

6. Resource Management**Problem**

The water resources of the Beaverhead River Drainage are vital to many interests, including supporting a blue ribbon fishery, wildlife, recreation, agriculture, municipal and industrial uses. The competition for the existing resource is becoming more acute as the area is receiving increased attention. Recreational; values, continued demands of agriculture, municipal, industrial uses, and water quality concerns all play an important role in the local watershed.

Opportunity

The CCWSC has the opportunity to work with other entities to participate in addressing their concerns while maintaining and protecting the interest of the CCWSC's mission.

B. Five Year Goals

The Primary Goals of the Company's water conservation plan are to:

Goal 1. Develop a comprehensive water accounting model to account for the water resource utilized by CCWSC.

Objective 1. The CCWSC Directors shall evaluate the proper function of the measurement devices on all diversions from the river and sloughs.

Objective 2. The River Commissioner will maintain accurate records.

Objective 3. Develop a water accounting model to be analyzed to determine the opportunities for future water conservation activities.

Goal 2. Map all irrigable acres

Objective: Resources for mapping???

VII. POTENTIAL CONSERVATION MEASURES

A. Incentive Pricing

CCWSC has considered a multi-tiered water pricing structure based on volume of water delivered to individual turnouts. The current system of recording individual farm deliveries and providing notice to individual operators of their status serves CCWSC needs at this time.

VIII. ADOPTED PLAN ELEMENTS

In order to achieve the District's goals

A. Designate a Water Conservation Coordinator and Water Conservation Education

The district appoints ???? as the water conservation coordinator for CCWSC. The district will offer educational opportunities to CCWSC directors and water users.

B. Assess all Water Measurement Structures

CCWSC will assess all

IX. IMPLEMENTATION SCHEDULE AND BUDGET

To implement the adopted plan elements the following implementation schedule and budget are provided in Tables 6 and 7.

Table 6 – Implementation Schedule

Activity	Schedule
Water Conservation Coordinator and Education	Immediately appoint a coordinator
Assess Water Measurement Structures at Each Diversion	Start in CY 04 and finish by CY 06/ Look at 10 Per Year
Have Properly Working Water Measurement Structures on Each Diversion	Start in CY 04 an finish by CY08

Table 7 – Implementation Budget

Activity	CY 04	CY 05	CY 06	CY 07	CY 08
Water Conservation Coordinator and Education	\$0				

X. ENVIRONMENTAL REVIEW

NEPA and NHPA will be considered for all implementation measures that have a physical effect.

DRAFT