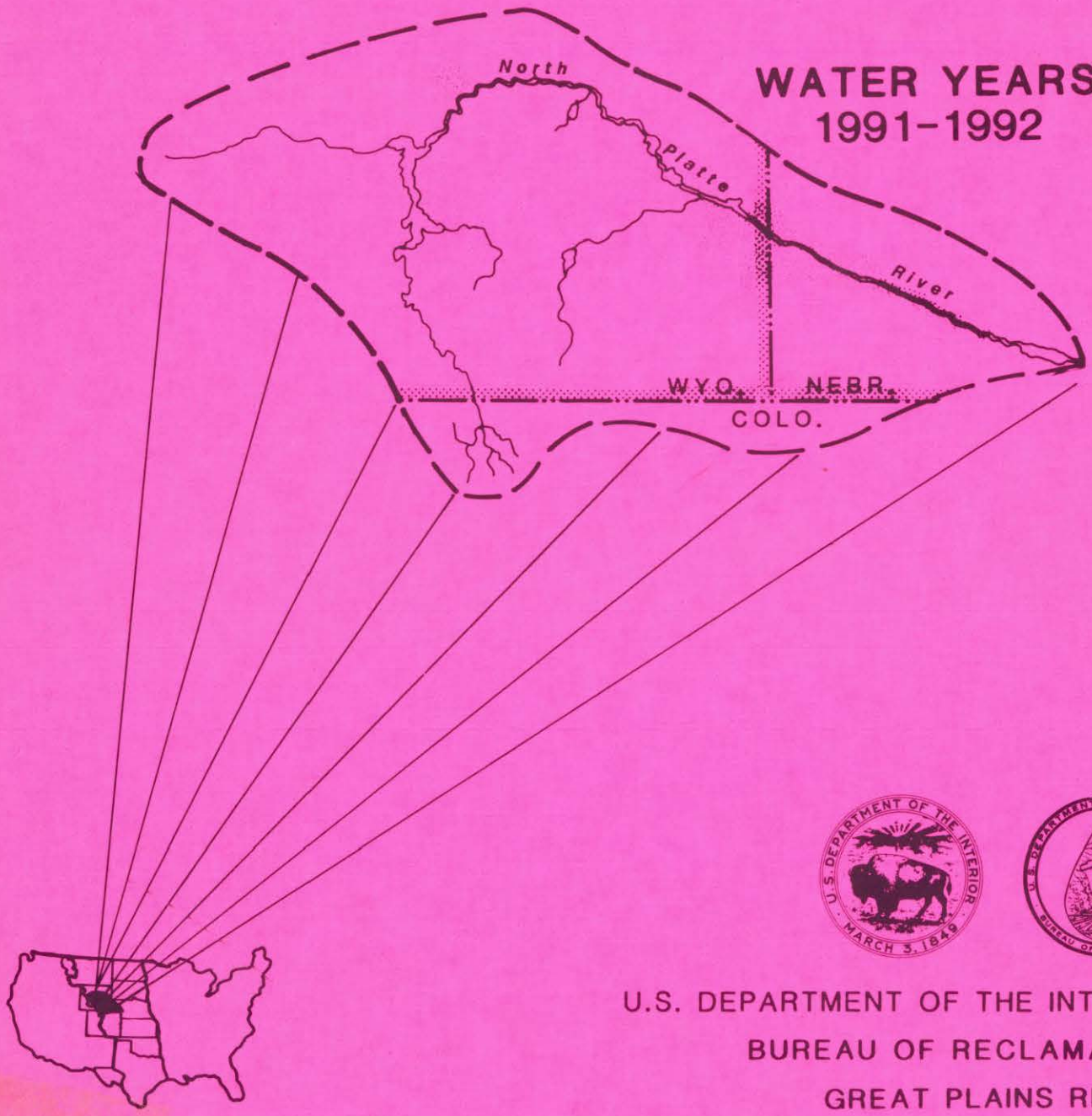
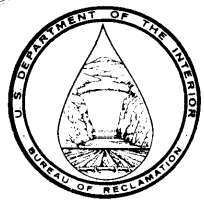
ANNUAL OPERATING PLANS

NORTH PLATTE RIVER AREA



WATER YEARS
1991-1992

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
GREAT PLAINS REGION



U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
GREAT PLAINS REGION
BILLINGS, MONTANA

ANNUAL OPERATING PLANS

NORTH PLATTE RIVER AREA
WYOMING

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PREFACE

This report concerns the operation of all Bureau of Reclamation (Reclamation) facilities in the North Platte River Basin above and including Guernsey Dam. This area of the North Platte River Basin is simply referred to in this report as the Basin. This report is to be published in combination with other river basin reports from the Western Division of the Great Plains Region. The reader is referred elsewhere in the combined report for detailed information on power generation throughout the Western Division.

All references to "average" in this document will refer to the average of the historical record for the years 1961-1990. In each coming year, this period will be advanced by 1 year to maintain a running 30-year average.

HIGHLIGHTS OF 1991 OPERATIONS

Water year 1991 runoff was significantly below average in the upper part of the Basin, with 67 percent of average runoff for the Seminoe watershed and near-average runoff lower in the Basin, with 92 percent of average below Alcova. Dry conditions which were prevalent in the early part of the water year were offset by above-average precipitation in May and June. This precipitation occurred mainly below Alcova, with significant amounts falling on project lands reducing the demand on storage water.

Peak snowmelt runoff inflows to reservoirs within the Basin occurred early in June and were below average. The average daily Seminoe inflow for June 1991 was 4,246 cubic feet per second (c.f.s.). This is 81 percent of the average inflow of 5,214 c.f.s. The highest daily flow occurred on June 4 when the flow of the North Platte River at Sinclair, Wyoming, was 5,993 c.f.s.

All Seminoe-Kortes water releases generated power with the exception of 1 day in both January and August at Seminoe and 1 day in both October and May at Kortes when minor bypasses were required to accommodate maintenance. The highest daily average turbine release of 2,632 c.f.s. occurred on July 14, 1991, at Kortes. Although previous dry years had left the North Platte Project carry-over storage water very low, snowmelt runoff and sufficient rainfall in May and June provided an adequate water supply, and an allocation of water was not necessary. The first North Platte Project storage water was delivered on June 28, 1991; Kendrick storage water was delivered on May 7, 1991; and from Glendo Storage on July 6, 1991. The North Platte Project Irrigation Districts took steps to conserve water throughout the irrigation season

to ensure a greater amount of North Platte Project carry-over storage for the year to come.

Water year precipitation totals for October-September were above average throughout the Basin, from 102 percent of average for the Seminoe watershed to 147 percent of average for the Guernsey watershed. Significant rainfall occurred throughout the Basin in May and June, with some of the precipitation stations recording their highest monthly precipitation in over 30 years. One significant rainstorm event on May 16, 1991, produced 3.68 inches of rain at the Glendo weather station. Precipitation throughout the Basin for the year was characterized by variation from far below average to far above average in the individual months. (Table 8) For example, the Guernsey watershed experienced only 35 percent of average precipitation in December and 268 percent of average precipitation in May.

The maximum snow-water accumulations for all watersheds in the Basin occurred during April 1991. The upper watersheds of the North Platte River Basin, Seminoe and Pathfinder, recorded 17.4 inches and 14.3 inches respectively of snowpack water content on May 1, 1991. This was 92 percent of average for the Seminoe watershed and 101 percent of average for the Pathfinder watershed.

For water year 1991, the minimum recorded temperature at Casper, Wyoming, was -41°F on December 21, 1990. The minimum recorded temperature at Walden, Colorado, was -36°F on December 22, 1990.

Very warm summer temperatures were recorded throughout the entire Basin with temperatures peaking from May through August. The maximum temperature at Walden, Colorado, was 88°F recorded on July 15, 1991. The maximum temperature at Casper, Wyoming, was 99°F on July 14, 1991.

The North Platte Guernsey storage right was filled on March 30, 1991, when the account reached 45,612 acre-feet. The Inland Lakes storage right accrued 42,127 acre-feet of water during the water year, which was not enough to fill. At the beginning of the water year, the Glendo ownership account contained 101,495 acre-feet of water. The greatest amount of water in the account (172,092 acre-feet) was reached on May 25, 1991. Throughout the water year, 81,092 acre-feet of water accrued to the account. (See 1991 water ownership section of this report for a detailed description.) After starting the year with almost no water, the North Platte Pathfinder storage water ownership account peaked at 752,975 acre-feet on June 25, 1991, which was 263,532 acre-feet below the maximum allowable amount. This

was the third year in a row of limited water supply for the North Platte Project. A voluntary allocation of water was requested by water users, who through significant conservation measures were able to conserve some of their water supply. The year ended with 170,796 acre-feet of water to be carried over for use in water year 1992. The Kendrick Project did not come into priority in water year 1991, and no accrual of water to this storage ownership was allowed. This balance declined throughout the water year as depletions occurred due to evaporation and deliveries leaving 693,288 acre-feet, the lowest end-of-September amount since 1969.

Delivery of irrigation water satisfied the requirements of the Kendrick Project and Glendo Unit water users during the 1991 irrigation season. The North Platte Project, however, did not take a full delivery because of their conservation efforts to save some water for carryover into water year 1992.

Power generation for the Reclamation facilities in the Basin for the water year was 562.3 gwh (71 percent of average).

DESCRIPTION OF THE NORTH PLATTE RIVER SYSTEM

The system of dams, reservoirs, and powerplants on the North Platte River (referred to as the "System" in this text) is operated and managed from the North Platte River Projects Office in Mills, Wyoming. The operation and management of the System is aided by the use of a Programmable Master Supervisory Control System, computerized accounting process, extensive Hydromet stations, SNOTEL stations, and the Water Scheduling and Hydrology Branch. The System consists of a number of individual water resource projects that were planned and constructed by the Bureau of Reclamation. The individual projects and features are operated as an integrated system to achieve efficiency and to produce increased multipurpose benefits. The System is located in the North Platte River drainage basin which includes parts of northern Colorado, southeastern Wyoming, and western Nebraska as shown on the cover and exhibit 10.

Upstream storage reservoirs are located at high elevations where 70 to 80 percent of the annual streamflow occurs from snowmelt runoff during the April-July period. Primary water use is irrigation, and the period of delivery of irrigation water normally extends from May through September. The System furnishes irrigation water to over 440,000 acres of land in Wyoming and Nebraska.

The System includes the Kendrick Project in Wyoming; the North Platte Project in Wyoming and Nebraska; and the Kortes and Glendo Units of the Pick-Sloan Missouri Basin Program in Wyoming and Nebraska. Major rivers are the North Platte River in Colorado, Wyoming, and Nebraska, and the Medicine Bow, Sweetwater, and Laramie Rivers in Wyoming.

The System has seven main stem reservoirs and four off-stream reservoirs, with six of the storage facilities having powerplants with a generating capacity totaling 232.6 megawatt (MW). The Department of Energy, by Executive Order dated October 1, 1977, assumed the responsibility of marketing power from Federal resources and operation and maintenance of Federal transmission facilities.

Western Area Power Administration (WAPA) of the Department of Energy, headquartered in Golden, Colorado, operates and maintains the 3,500 miles of interconnected electrical transmission lines within the System. The power system is also interconnected with other Federal, public, and private power systems. Bulk power from the System is marketed to about 40 preferred customers and results in annual revenues of about 10 million dollars.

SYSTEM PLANNING AND CONTROL

The System is operated for irrigation, hydroelectric power production, municipal and industrial water supply, flood control, recreation, fish and wildlife preservation, and other purposes. Each project of the System must be operated under the purposes for which it was authorized and constructed. The objective of an integrated system is to obtain optimum benefits from the individual projects.

The System's integrated operation is planned and coordinated by Reclamation's Water Scheduling and Hydrology Branch of the North Platte Projects Office in Mills, Wyoming. This office collects and analyzes information daily and makes the decisions necessary for successful operation of the System. The continuous water management function involves coordination between Reclamation, the Department of Energy, and many other local, state, and Federal agencies. When water levels rise into the exclusive flood control pool at Glendo Reservoir, the flood control operation of Glendo Dam is directed by the Corps of Engineers, Omaha District, Omaha, Nebraska.

Experience has proven that proper utilization of the available water resource in a system such as this can be achieved only through careful budgeting of the anticipated water supply. The technical end product of this budgeting process is an Annual Operating Plan (AOP).

The System is operated on a water year basis (October 1 through September 30). The AOP is prepared in December 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 System is operated to optimize the most probable water supply and still allow changes in operation should either reasonable maximum or reasonable minimum water supply conditions occur. This flexibility is the basis of the plan. Reclamation makes use of computer programs to revise and adjust the AOP to reflect changing conditions. A computerized process of forecasting the anticipated water supply also aids the revision process during late winter and early spring.

Seminoe Reservoir

Seminoe Dam and Reservoir, on the North Platte River, is the main storage facility for the Kendrick Project. Construction of the dam was completed in 1939 providing a storage capacity of 1,017,273 acre-feet. The powerplant contains three electrical generating units with a total installed capacity of 51 MW at a full release capability of about 4,000 c.f.s. A river outlet works in the dam also provides the capability to release approximately 2,800 c.f.s through two jet-flow gates. The spillway consists of a concrete-lined tunnel through the right abutment controlled by three fixed-wheel gates with a release capability of close to 48,000 c.f.s.

Reservoir storage at the beginning of water year 1991 totaled 432,886 acre-feet, which was 61 percent of average. Release of water continued during the winter to generate power while maintaining the minimum required flow of 500 c.f.s. in the Miracle Mile reach of the North Platte River. Because of the short water supply, the water releases from the Seminoe and Kortes powerplant turbines into the Miracle Mile were kept to the minimum of 500 c.f.s. from October through mid-March, except for January and February when water releases were increased to about 700 to 800 c.f.s. in accordance with the operating plan. Winter (October to January) inflow to Seminoe was 69 percent of average and decreased to 59 percent of average in January. Reservoir storage was near the most probable plan by the end of January, standing at 361,059 acre-feet.

Winter precipitation on the Seminoe watershed was recorded at 88 percent of average. Spicer, Colorado recorded its third highest October precipitation in 30 years, and Walden, Colorado, recorded its fourth highest precipitation in 30 years. Snow-water content within the Seminoe watershed was 75 percent of average for February 1, 1991.

February precipitation in the Seminoe watershed was 79 percent of average. Snow-water content within the Seminoe watershed was 71 percent of average as of March 1, 1991.

March precipitation was 126 percent of average in the Seminoe watershed, and the March inflow to Seminoe Reservoir remained low at 74 percent of average. April 1 snow-water content reached 82 percent of the average at 15.9 inches. Water releases from the Kortes turbines for March averaged 550 c.f.s.

Precipitation was varied throughout the Basin during April with below-normal rainfall in the Basin above Seminoe Dam at 75 percent of average and above-normal precipitation in the basin below Glendo Dam at 109 percent of average. April inflow to Seminoe Reservoir dropped to 47 percent of average, the third lowest in 50 years. Water releases through the Kortes turbines averaged 1,062 c.f.s. during April. Water in storage for use by the Kendrick Project was at the lowest end-of-April content since 1970.

Precipitation within the Seminoe watershed rose above normal for May to 178 percent of average. The Saratoga weather station recorded its highest May precipitation in the last 30 years, while the Elk Mountain weather station recorded its second highest May precipitation in the last 30 years. May inflow to Seminoe Reservoir increased to 70 percent of average. Water releases through the Kortes turbines averaged 1,035 c.f.s. during May. The May 1 snow-water content was 92 percent of average.

The first 3 days of June saw an accumulation of precipitation at Seminoe Dam of 3.03 inches. June precipitation in the watershed above Seminoe Dam was 117 percent of average, and the inflow to Seminoe Reservoir was 81 percent of average with average daily flows of about 4,246 c.f.s. Water releases through the Kortes turbines were reduced on June 13th and averaged 560 c.f.s. for the rest of the month.

July water releases through Kortes turbines averaged 1,645 c.f.s. Total April-July inflow volume from the watershed above Seminoe Dam was 526,100 acre-feet, which was 67 percent of average. Precipitation remained above normal in July at 109 percent of average.

Water releases through the Kortes turbines during August averaged 2,000 c.f.s. Precipitation decreased in August to 76 percent of average. The August inflow to Seminoe Reservoir remained low at 62 percent of average.

Precipitation remained low in September at 71 percent of average. September inflow to Seminoe Reservoir also remained low at 60 percent of average. Water releases through the Kortes turbines were decreased on September 6 to approximately 750 c.f.s and again on September 22 to approximately 500 c.f.s.

Gross generation for the water year at the Seminoe Powerplant totaled 94,400,000 kilowatt-hours (kWh); this was 70 percent of average.

The Seminoe Reservoir end of water year storage of 439,721 acre-feet was 269,700 acre-feet below average but 6,835 acre-feet higher than the reservoir storage at the end of water year 1990. The Kendrick Project ended September with the smallest amount of water in storage since 1969.

Kortes Reservoir

Completed in 1951, Kortes Dam, Reservoir, and Powerplant of the Kortes Unit (A Pick-Sloan Missouri Basin Project) are located about 2 miles below Seminoe Dam. This 4,700 acre-foot reservoir serves as the forebay for Kortes Powerplant which has three electrical generating units with a total installed capacity of 36 MW and a release capability of 2,910 c.f.s.

The spillway on the right abutment consists of an uncontrolled crest with a concrete-lined tunnel and has a capacity of 50,000 c.f.s.

Gross generation for the water year totaled 114,700,000 kWh, which is 73 percent of average.

Pathfinder Reservoir

Pathfinder Dam and Reservoir, a major storage facility of the North Platte Project, has a total capacity of 1,016,507 acre-feet. Construction of the dam was completed in 1909. Operationally, this structure is a bottleneck in the system with its restricted release capability of only 5,000 c.f.s. The two jet-flow gates can release 2,800 c.f.s., and the Fremont Canyon turbines can normally release 2,200 c.f.s. The uncontrolled spillway is a flat-crested weir of natural rock over the left abutment of the dam. It has an estimated capacity of 65,000 c.f.s. at water surface elevation 5858.10 feet or 8 feet above the spillway crest. Fremont Canyon Powerplant, located in the canyon below Pathfinder Dam, has been reconditioned to a capacity of 66.8 MW under full reservoir operating head.

Upon entering water year 1991, storage in Pathfinder Reservoir was 227,610 acre-feet, which was 211,900 acre-feet below average.

The Kortes to Pathfinder river gains for October-January were 69 percent of average. Winter transfer of water to Glendo Reservoir for power generation averaged approximately 500 c.f.s. from October through December. Winter release of water from Pathfinder Reservoir was the lowest since 1961.

February 1 snow-water content for the Sweetwater watershed was 71 percent of average. Precipitation within the watershed was 129 percent of average during the October-January period, with the January precipitation at 87 percent of average. The Lander, Wyoming, weather station recorded its second highest November precipitation in 30 years with a reading of 2.27 inches.

Data for the South Pass, Wyoming, weather station was not available October through April. The data was estimated for that period using the Lander, Wyoming, and Farson, Wyoming, stations as a reference. The Wyoming Highway Department, as of May, now reports the weather reading taken at South Pass, Wyoming.

Precipitation in the Sweetwater watershed during February was 102 percent of average. River gains rose sharply to 280 percent for February, which was the second highest February inflow for Pathfinder Reservoir in 30 years. This was due to higher than normal temperatures which caused some snowmelt runoff. March 1 snow-water content was 60 percent of average.

March precipitation was well below average at 46 percent. River gains below Kortes were 102 percent of average for March. There were no bypass water releases for the month of March, and water releases through the Fremont Canyon powerplant turbines averaged 630 c.f.s. April 1 snow-water content for the Sweetwater watershed was 78 percent of average.

April precipitation improved to 132 percent of average for the Sweetwater watershed, and river gains below Kortes decreased to 77 percent of average for April. The snow-water content on May 1 rose to 101 percent of average. The amount of North Platte Project storage at the end of April was the lowest since 1961 at 38 percent of average.

May precipitation increased to 205 percent of average and river gains between Kortes Dam and Pathfinder Dam, including the discharge of the Sweetwater River, were 87 percent of average. The Muddy Gap, Wyoming, weather station recorded its highest May precipitation in the last 30 years with a reading of 5.11 inches.

June precipitation continued high at 158 percent of average. Kortes Dam to Pathfinder Dam river gains were also high for June at 126 percent. Water releases for June through the Fremont Canyon Powerplant turbines averaged 740 c.f.s. with no bypass release of water for the month. Pathfinder Reservoir reached a maximum content for the water year of 339,875 acre-feet at elevation 5805.00 feet on June 23, 1991.

The Sweetwater watershed precipitation declined to 68 percent of average for the month of July. River gains between Kortes Dam and Pathfinder Dam increased to 132 percent of average for July. Water releases through Fremont Canyon Powerplant turbines for July increased to 1,885 c.f.s.

Kortes Dam to Pathfinder Dam river gains increased for the month of August to 195 percent of average. August precipitation was low at only 48 percent of average. August water releases through the Fremont Canyon Powerplant turbines averaged 2,167 c.f.s. and 724 c.f.s. through the Pathfinder Dam jet-flow gates during the 13 days for which a bypass release was required.

September precipitation was 79 percent of average. Kortes Dam to Pathfinder Dam river gains remained high at 167 percent of average for September. September water releases through the Fremont Canyon turbines averaged 1,625 c.f.s. There was no bypass of water through the turbines during September.

A total of 18,670 acre-feet of water bypassed the turbines during the water year. Generation totaled 184,400,000 kWh, which was 72 percent of average.

The water year ended with 281,930 acre-feet of water in storage in Pathfinder Reservoir, which is 63 percent of average.

Alcova and Gray Reef Reservoirs

Alcova Reservoir is part of the Kendrick Project serving as a diversion dam for the Casper Canal and a forebay for the Alcova Powerplant. The dam, located about 10 miles downstream of Pathfinder Dam, was completed in 1938. Reservoir storage capacity is about 184,400 acre-feet, of which only the top 30,600 acre-feet is active capacity available for irrigation of the Kendrick Project. The powerplant consists of two electrical generating units with a total installed capacity of 36 MW. The reservoir is operated within a 2-foot range during summer and winter but at levels 10 feet apart. A higher operating level is maintained during the summer months to provide adequate head on the Casper Canal and accommodate recreation use, while the lower winter operating level reduces the potential for ice damage to the canal gate and boat docks during the winter. The annual drawdown of Alcova Reservoir began October 1, 1990. The reservoir water surface elevation was lowered to 5488.87 feet by October 21, which was within the winter operating range of 5488.0 feet $\pm$ 1 foot. The reservoir was operated in this range until March 24, 1991, when the refill of Alcova Reservoir was initiated. A water

surface elevation of 5498.00 feet was reached on April 10, 1991, and the reservoir was maintained within 1 foot of that level throughout the summer.

Kendrick Project irrigation deliveries from Alcova Reservoir to the Casper Canal were 94 percent of average during the May-September period. The Kendrick Project ownership account contained 813,508 acre-feet on October 1, 1990, which was the greatest amount for the water year. This was 338,170 acre-feet below maximum allowable ownership storage. Kendrick Project ownership account contained 693,288 acre-feet of water at the end of the water year, which was 508,390 acre-feet less than the maximum allowable ownership storage. Alcova Powerplant generated 84,400,000 kWh of energy during water year 1991. This was below average by 44,900,000 kWh.

Gray Reef Dam and Reservoir are part of the Glendo Unit, Oregon Trail Division, Pick-Sloan Missouri Basin Program. The dam is a three-zoned rock and earthfill structure located about 2.5 miles below Alcova Dam and was completed in 1961. The reservoir has an active water storage capacity of 1,744 acre-feet. Gray Reef Dam was constructed to provide a small reservoir to re-regulate water releases from Alcova Dam. Re-regulation is required to provide stabilized flows acceptable to irrigation, municipal, industrial, and fish and wildlife interests along the 147 miles of river between Alcova and Glendo Dams.

The water release from Gray Reef Dam was maintained near 500 c.f.s. from October 1, 1990, through April 2, 1991. On October 22, 1990, work began on the replacement of a flapper valve at the Alcova Powerplant. Water releases from Alcova Reservoir were made exclusively from the spillway until the work was completed on October 31. A total of 9,578 acre-feet of water bypassed the turbines during this period. Water releases for the remainder of the water year were adjusted to meet irrigation demands below Guernsey Reservoir. The largest water release for the water year of 2,911 c.f.s. occurred on August 24, 1991. After September 21, 1991, the Gray Reef water release was maintained near 500 c.f.s.

Glendo Reservoir

Glendo Dam and Reservoir is the only storage facility for the Glendo Unit. The reservoir has a water storage capacity of 789,400 acre-feet, including 271,900 acre-feet allocated to flood control. Glendo Powerplant consists of two electrical generating units with a total installed capacity of 38 MW. A river outlet works of three gates provide an additional controlled release capacity of 13,000 c.f.s. The

uncontrolled spillway, located on the right abutment, has a crest elevation of 4653.00 feet and discharge capacity of about 10,000 c.f.s. at approximately 4669.0 feet.

Reservoir storage of 77,271 acre-feet of water at the beginning of the water year was 4,900 acre-feet below average. Precipitation in the Glendo watershed was above normal throughout the winter months at 112 percent of average with Casper, Wyoming, and Douglas, Wyoming, recording their third highest November precipitation in 30 years. Winter gains to the river between Alcova Dam and Glendo Dam (October-January) were 79 percent of average. Glendo Reservoir contained 234,394 acre-feet of water at the end of January, the lowest content for that time of year since the first year of operation.

Precipitation in March was 62 percent of average, while the Alcova Dam to Glendo Dam river gain for the month was the second lowest since 1956 at 51 percent of average. Release of water was initiated on April 4 in order to transfer water to Guernsey Reservoir for later release to the Inland Lakes.

May brought a dramatic change in the dry weather conditions with precipitation climbing to 215 percent of average and Alcova Dam to Glendo Dam river gains increasing to 103 percent of average. Douglas, Wyoming, weather station recorded the highest May precipitation in 30 years. A rainstorm event on May 16 produced a one day river gain between Alcova Dam and Glendo Dam of over 18,000 acre-feet of water.

Rainfall in June was above normal at 147 percent of average, with the Glendo, Wyoming, weather station recording rainfall on 14 days of the month. Gains to the river between Alcova Dam and Glendo Dam in June rose to 193 percent of average. On June 2, 1991, Glendo Reservoir entered the flood pool. Water in the flood pool was evacuated as directed by the Army Corps of Engineers, with downstream water users making use of much of the flood water. On June 29, 1991, The Glendo Reservoir level receded below the flood pool.

The reservoir reached a maximum storage for the year of 557,555 acre-feet (elevation 4638.13 feet) on June 7, 1991. This was 3.13 feet into the flood pool. The flood pool consists of the space in the reservoir between elevations 4635.00 feet and 4653.00 feet (271,917 acre-feet)

Precipitation declined sharply in August to 71 percent of average. The Alcova Dam to Glendo Dam river gains recorded a net loss of 7,453 acre-feet of water for August and a net gain of 9,546 acre-feet of water for September. Precipitation was 61 percent of average for September.

At the end of the water year, Glendo Reservoir contained 94,061 acre-feet of water (water surface elevation 4578.80 feet). This was 115 percent of the average end-of-September content.

A total of 602,934 acre-feet of water was released through Glendo Powerplant resulting in gross generation of 63,700,000 kWh for the year. This was 22,500,000 kWh below average. A total of 153,133 acre-feet of water bypassed the Glendo turbines during the year.

Guernsey Reservoir

The reservoir, located about 25 miles below Glendo Dam, again stores and re-regulates the flow of the river prior to delivery of storage water to project lands of the North Platte Project and Glendo Unit. Guernsey Powerplant, located on the right abutment of the dam, has two 2.4 MW electrical generating units with a water release capability of about 1,340 c.f.s. The original water storage capacity of the reservoir was 73,800 acre-feet, but this has been greatly reduced by deposition of silt. Utilizing data from the 1980 Sedimentation Survey of Guernsey Reservoir, the March 1982 capacity tables show about 45,600 acre-feet of space available for water storage.

Guernsey Reservoir storage of 11,165 acre-feet at the beginning of water year 1991 was about 400 acre-feet below average. October water releases for diversion to the Inland Lakes totaled 12,351 acre-feet. Storage of water totaled 4,504 acre-feet at the end of the month.

Winter gains (October-January) to the North Platte River from Glendo Dam to Guernsey Dam were below average at 60 percent of average. Winter precipitation in the Guernsey watershed was below average except for November when the Guernsey, Wyoming, weather station recorded its second highest November precipitation in 30 years, at 235 percent of average. Glendo Dam to Guernsey Dam river gains were 109 percent of average in February and precipitation for February remained low at 56 percent of average.

The March river gains between Glendo Dam and Guernsey Dam were above average at 367 percent, while precipitation for March increased slightly to 78 percent of average.

Guernsey Reservoir water releases were started on April 22, 1991, to transfer water to the Inland Lakes. There was a net loss of 1,100 acre-feet of water in the river between Glendo Dam and Guernsey Dam in April. Precipitation for the month was 109 percent of average.

The Glendo Dam to Guernsey Dam river gains rapidly increased to 130 percent of average for May. Precipitation for May rose sharply to 268 percent of average.

June was a wet month as rainfall in the first 3 days accumulated 2.25 inches at Guernsey Dam, which put the precipitation at 212 percent of average for the month. Due to the amount of precipitation, gains in the river between Glendo Dam and Guernsey Dam for the month of June climbed to 377 percent of average. Water releases from Guernsey Dam were resumed on May 22, 1991, when the storage content had reached 42,588 acre-feet. Water releases were increased as necessary throughout June as flood water from Glendo Reservoir was moved downstream.

The annual "silt run" from the reservoir was initiated on July 7, 1991, and continued for 14 days. Reservoir storage was reduced to initiate the "silt run" and was maintained at a low level throughout the period. The minimum reservoir content of 1,187 acre-feet occurred on July 24, 1991. Following the "silt run," the reservoir was refilled to 37,257 acre-feet by July 31.

River gains between Glendo Dam and Guernsey Dam totaled 2,834 acre-feet of water for August. Precipitation for the Guernsey watershed was 150 percent of average during August.

The Glendo Dam to Guernsey Dam river gain in September was 4,496 acre-feet, which is 78 percent of average. Precipitation was only 68 percent of average for September.

Guernsey Reservoir contained 6,823 acre-feet of water at the end of the irrigation season, September 30.

Gross generation for the water year totaled 15,700,000 kWh, which is 66 percent of average.

1991 Water Ownership

It is the responsibility of Reclamation to account for all water being stored in the reservoirs on the North Platte River. Through a process of daily accounting, the ownership of water in storage is determined as water is accumulated and delivered from the system of reservoirs. Seven ownership accounts are maintained to account for water in the reservoirs.

The Kendrick storage account contained 863,508 acre-feet of water at the start of water year 1991 which was 388,170 acre-feet less than the maximum allowable amount. The Kendrick Project did not come into priority, and therefore, no accrual of water to this storage ownership was allowed. Water deliveries of 66,130 acre-feet along with evaporation of 54,211 acre-feet reduced the account to 693,288 acre-feet at the end of the year.

The North Platte Project stores water in three separate accounts, each having a different priority for accrual of water. Those accounts are the Pathfinder account, the Guernsey account, and the Inland Lakes account.

The North Platte Project Pathfinder account contained 17,393 acre-feet of water at the start of the water year. This was only 4 percent of the average amount which is normally carried into the next water year. Throughout the water year 765,906 acre-feet of water was accrued to this account, 36,250 acre-feet was lost to evaporation, and 576,253 acre-feet was delivered from storage. This was considered a limited water supply which prompted the water users to request a voluntary allocation of water. Through significant conservation measures, the water users were able to conserve enough water to end the year with 170,796 acre-feet of water to be carried over for use in water year 1992.

The North Platte Project Guernsey account began and ended the water year with no water stored which is normal operation. On March 30, 1991, water accrual reached 45,612 acre-feet of water, which is the maximum allowed under the water storage right. However, in May when there was available water the account was refilled by accruing an additional 1,397 acre-feet of water as allowed by the Wyoming State Engineer for a total accrual of 47,768 acre-feet. Of this amount, 3,333 acre-feet of water was lost to evaporation and the rest was delivered to water users.

The North Platte Project Inland Lakes account is maintained for water which is temporarily stored in Glendo and Guernsey Reservoirs under the Inland Lakes water right. This water right comes into priority during October, November, and

April; this year, 42,127 acre-feet of water was accrued during those months. Of that amount, 582 acre-feet was lost to evaporation and the rest was transferred for restorage in the Inland Lakes as part of normal operation.

During the water year, the Glendo ownership account accrued a total of 81,092 acre-feet of water. In both 1989 and 1990, the evaporation from Glendo Reservoir has been greater than the 20,090 acre-feet which is set aside for that purpose. As a result, the power pool of Glendo was depleted by a total of 10,518 acre-feet of water (6,530 acre-feet for 1989 and 3,988 acre-feet for 1990). The 10.518 acre feet was accrued to the power pool returning it to its normal quantity of 63,148 acre-feet. A total of 40,000 acre-feet of water (the maximum allowed by the Supreme Court decree) was accrued to the irrigation pool. An evaporation pool of 20,090 acre-feet of water was accrued and was subsequently depleted by 6,989 acre-feet of evaporation ending the year with 13,101 acre-feet remaining to be applied to the evaporation pool for 1992. The remaining 10,484 acre-feet of water, which was accrued to the Glendo account, replaced Glendo excess water which had already been sold in water year 1991 before the runoff events filled the reservoir. At the end of the year, the Glendo ownership account contained 141,835 acre-feet of water, which is 107 percent of average.

When space is available, an account is maintained in Seminoe Reservoir for the city of Cheyenne, Wyoming which obtains water by exchange from the Upper North Platte Basin through a system of trans-basin diversions. In water year 1991, this account accrued 6,169 acre-feet of water of which 108 acre-feet was lost to evaporation and 4,899 acre-feet was released in exchange for North Platte water taken by the city of Cheyenne. The remaining 2,169 acre-feet of water was carried over in the account for water year 1992.

The Pacific Power Company has contracted for storage space in Glendo Reservoir for use by the Dave Johnston Power Plant near Glenrock, Wyoming. As cooling water is taken from the North Platte River at the powerplant, the account in Glendo Reservoir is reduced accordingly. This year the account lost 50 acre-feet to evaporation and, after deliveries, had a net accrual to the account of 26 acre-feet. The beginning balance of 956 acre-feet was therefore reduced to 932 acre-feet of water at year's end.

Flood Benefits

During the 1991 runoff, high precipitation events occurred and the Corps of Engineers, Omaha District, estimated that total flood damages prevented by all the North Platte River Dams in Wyoming for water year 1991 was $4,986,900.

The system of dams and reservoirs on the North Platte River in Wyoming has prevented flood damages totaling $49,113,400 since approximately 1970 when flood benefits were first recorded (table 1).

ANNUAL OPERATING PLAN FOR WATER YEAR 1992

Three operation studies were developed for the North Platte River System to establish the Annual Operating Plan (AOP) for water year 1992. Each of the studies conformed to the established operating criteria but used different runoff conditions and different demand conditions.

The three runoff conditions were determined from a statistical analysis of historic runoff into the Basin and were labeled reasonable minimum, reasonable maximum, and most probable. Runoff into the Basin during water year 1992 has a one-in-ten chance of being less than the reasonable minimum. Statistically, runoff in 1992 will have an eight-in-ten chance of falling between the two extremes. The most probable runoff is based on long-term averages and approximates a 50 percent chance of occurrence. The three studies for water year 1992 are summarized numerically in tables 3A, 3B, and 3C and graphically in exhibits 1 through 8.

The AOP, as developed and reflected in the three studies, provides the flexibility to adjust operations as conditions change during the water year. Forecasts of the April-July snowmelt runoff will be made at the beginning of each month for February through May. Projected operating schedules will be adjusted, as required, throughout the water year as changes occur in the forecasted snowmelt runoff, irrigation demands, maintenance schedules, and power loads.

The carryover water in storage in mainstem reservoirs (including Kortes and Gray Reef) on the North Platte River in Wyoming, totaled 1,009,020 acre-feet at the beginning of the water year. This amount was 70 percent of average.

MOST PROBABLE CONDITION - WATER YEAR 1992

Seminoe Reservoir

October through January -- At the beginning of the water year Seminoe Reservoir storage was 439,700 acre-feet, 269,700 acre-feet less than the 30-year average. During the October-January period, planned turbine releases from Seminoe Reservoir of 122,200 acre-feet of water will lower reservoir storage to about 412,900 acre-feet by January 31. These releases are projected based on a statistically estimated Seminoe inflow of 99,800 acre-feet and are made to accommodate winter power demands as much as possible and maintain a flow of 500 c.f.s. in the Miracle Mile reach of the North Platte River.

TABLE 1

FLOOD DAMAGE PREVENTED BY DAMS
IN THE NORTH PLATTE RIVER SYSTEM 1/

Dam	Water year 1991	Prior to 1991	Accumulated total
Seminoe	$ 195,600	$9,837,000	$10,032,600
Pathfinder	40,100	4,752,100	4,792,200
Alcova	16,600	193,100	209,700
Glendo	4,734,600	28,905,300	33,639,900
Guernsey	0	439,000	439,000
Total	$4,986,900	$44,126,500	$49,113,400

1/This data is received from the Army Corps of Engineer's Omaha District Office and is revised every October. The period of assement is 1970 through 1991 except for Glendo Dam which is 1965 thorough 1991.

UNITED STATES BUREAU OF RECLAMATION
GREAT PLAINS REGION
NORTH PLATTE RIVER PROJECTS
MILLS, WYOMING

1991 ACTUAL SYSTEM OPERATIONS

WATER IN 1000 ACRE FEET * * * * * * * * * * ENERGY IN G W H

	INI-SUM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
SEMINOE RESERVOIR													
INFLOW	704.9	21.8	24.4	18.4	15.3	21.7	39.1	55.3	170.8	252.7	47.3	24.5	13.7
TURBINE RELEASE	659.1	31.8	31.7	32.2	49.5	38.4	33.7	63.2	63.6	40.4	101.2	122.8	50.6
BYPASS OR SPILL	0.4	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
EVAPORATION SEMINOE	38.5	3.3	1.4	0.4	1.1	1.0	1.5	1.9	3.0	8.3	7.7	5.8	3.3
SEMINOE END OF MONTH CONTENT	432.9	419.5	410.8	396.6	361.1	343.4	347.4	337.6	441.8	645.8	584.2	479.9	439.7
KWH / AF		132.1	138.8	136.6	149.5	143.2	133.5	147.2	143.1	148.5	169.0	162.1	150.2
GENERATION GWH	99.4	4.2	4.4	4.4	7.4	5.5	4.5	9.3	9.1	0.6	17.1	19.9	7.6
KORTES RESERVOIR													
INFLOW	659.6	31.8	31.7	32.2	49.7	38.4	33.7	63.2	63.6	40.4	101.2	123.0	50.6
TURBINE RELEASE	658.4	31.4	31.8	32.1	49.7	38.5	33.7	63.2	63.2	40.4	101.0	123.0	50.5
BYPASS OR SPILL	0.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
EVAPORATION AND SEEPAGE	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
END OF MONTH CONTENT	4.7	4.7	4.6	4.7	4.7	4.7	4.7	4.7	4.6	4.6	4.7	4.7	4.7
KWH / AF		165.6	166.7	168.2	179.1	176.6	172.1	180.4	175.6	168.3	177.2	174.0	172.3
GENERATION GWH	114.7	5.2	5.3	5.4	8.9	6.8	5.8	11.4	11.1	6.8	17.9	21.4	8.7
PATHFINDER RESERVOIR													
GAIN KORTES TO PATHFINDER	154.8	-1.5	2.7	-1.3	3.0	7.0	9.2	16.5	31.7	38.8	20.0	19.9	8.7
TOTAL INFLOW	814.1	30.4	34.5	30.8	52.7	45.5	42.9	79.7	95.3	79.2	121.0	142.9	59.2
FREMONT CANYON TURBINE WATER	713.7	10.7	30.4	30.3	32.0	27.9	38.8	85.1	68.3	44.1	115.9	133.3	96.7
BYPASS OR SPILL	19.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.7	0.0
EVAPORATION AND SEEPAGE	27.1	0.1	1.0	0.3	0.8	0.9	1.4	1.7	2.5	4.9	5.5	5.1	2.9
END OF MONTH CONTENT	227.6	246.8	249.9	250.1	270.0	286.6	289.3	282.2	306.8	336.9	336.5	322.3	281.9
KWH / AF		280.4	279.6	300.3	293.8	268.8	268.0	256.2	250.4	251.7	253.7	246.1	251.3
GENERATION FREMONT CANYON	184.4	0.3	8.5	9.1	9.4	7.5	10.4	21.8	17.1	11.1	29.4	32.8	24.3

UNITED STATES BUREAU OF RECLAMATION
GREAT PLAINS REGION
NORTH PLATTE RIVER PROJECTS
MILLS, WYOMING

1991 ACTUAL SYSTEM OPERATIONS

WATER IN 1000 ACRE FEET * * * * * * * * * * ENERGY IN G W H

	INI-SUM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
ALCOVA RESERVOIR													
INFLOW	732.7	11.0	30.4	30.3	32.0	27.9	38.8	85.1	68.3	44.1	115.8	151.9	96.8
RELEASE TO CASPER CANAL	66.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	11.5	23.1	17.7	10.0
TURBINE RELEASE	645.3	21.4	30.7	30.9	31.0	27.6	30.6	69.8	63.4	31.3	88.6	132.7	87.2
BYPASS OR SPILL	9.6	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EVAPORATION AND SEEPAGE	11.0	2.9	0.4	0.1	0.3	0.2	0.4	0.5	0.9	1.4	1.5	1.4	1.0
END OF MONTH CONTENT	179.6	156.8	156.1	155.4	156.1	156.3	164.1	178.9	179.1	179.1	181.6	181.7	180.3
KWH / AF		144.9	127.0	132.7	141.9	130.4	124.2	131.8	135.6	131.0	132.1	125.1	129.6
GENERATION GWH	84.4	3.1	3.9	4.1	4.4	3.6	3.8	9.2	8.6	4.1	11.7	16.6	11.3
GLENDO RESERVOIR													
ALCOVA TO GLENDO GAIN	244.5	12.6	9.5	5.5	11.4	16.4	9.7	19.0	93.5	66.4	-1.5	-7.5	9.5
TOTAL INFLOW	914.1	45.0	43.5	35.6	41.7	43.6	38.7	81.7	169.8	114.4	87.6	115.3	97.3
TURBINE RELEASE	716.6	4.1	0.0	0.0	0.0	0.0	0.0	40.7	9.1	105.6	214.2	230.1	112.8
BYPASS OR SPILL	153.1	1.2	0.1	0.1	0.1	0.1	0.1	0.1	1.7	0.2	83.2	53.0	13.3
EVAPORATION AND SEEPAGE	27.6	1.0	1.0	0.7	0.4	0.9	1.4	2.1	3.8	5.5	5.7	3.2	1.7
END OF MONTH CONTENT	77.3	116.0	158.5	193.2	234.4	276.9	314.1	352.9	508.0	511.1	295.6	124.6	94.1
KWH / AF		24.4	0.0	0.0	0.0	0.0	0.0	86.0	76.9	108.0	105.0	80.4	62.1
GENERATION GWH	63.7	0.1	0.0	0.0	0.0	0.0	0.0	3.5	0.7	11.4	22.5	18.5	0.7
GUERNSEY RESERVOIR													
GLENDO TO GUERNSEY GAIN	56.7	1.1	1.6	0.8	1.4	1.2	1.1	-1.1	16.2	29.0	-1.9	2.8	4.5
TOTAL INFLOW	926.4	6.3	1.7	1.0	1.5	1.3	1.2	39.7	27.1	134.8	295.4	285.9	130.6
NORTH PLATTE REQUIREMENT	1065.0	15.0	0.0	0.0	0.0	0.0	0.0	40.0	110.0	125.0	305.0	295.0	175.0
NORTH PLATTE DELIVERY	620.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	13.3	229.5	249.5	111.8
GLENDO DELIVERY	24.8	0.0	0.5	0.0	0.5	0.0	0.5	0.0	0.0	0.0	5.0	8.4	9.9
TOTAL OUTFLOW	925.2	12.8	0.1	0.1	0.1	0.1	0.1	15.4	25.0	127.7	298.6	287.1	158.0
TURBINE RELEASE	233.5	12.4	0.0	0.0	0.0	0.0	0.0	13.0	24.8	49.0	28.7	51.9	53.6
EVAPORATION	5.6	0.2	0.1	0.1	0.1	0.1	0.2	0.4	0.8	1.1	0.7	1.2	0.6
END OF MONTH CONTENT	11.2	4.5	5.9	6.7	8.0	9.1	10.0	33.9	35.1	41.1	37.3	34.9	6.8
KWH / AF		48.4	0.0	0.0	0.0	0.0	0.0	69.2	68.5	71.4	62.7	69.4	67.2
GENERATION GWH	15.7	0.6	0.0	0.0	0.0	0.0	0.0	0.9	1.7	3.5	1.8	3.6	3.6

SUMMARY OF NORTH PLATTE RIVER SYSTEM OWNERSHIPS FOR WATER YEAR 1991 (ACRE-FEET)

MONTHS	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
PATHFINDER OWNERSHIP														
ACCURAL		11779	38829	16577	16946	26760	47983	64716	255302	287014	0	0	0	765906
EVAPORATION		467	271	325	368	251	1025	1335	3241	8716	10567	6809	2815	36250
DELIVERY *		0	0	0	0	0	0	0	16617	0	198369	249467	111400	576253
OWNERSHIP	17393	28705	67263	83515	100093	126602	173560	236414	472385	750683	541747	285471	170796	
KENDRICK OWNERSHIP														
ACCURAL		0	0	0	0	0	0	0	0	0	0	0	0	0
EVAPORATION		5218	1661	1500	1519	932	3957	3449	5425	9586	8864	7377	4723	54211
DELIVERY *		0	0	0	0	0	0	0	3782	11504	23084	17714	10046	66130
OWNERSHIP	813629	808411	806750	805250	803731	802799	798842	795393	786186	765096	733148	708057	693288	
GLENDO OWNERSHIP														
ACCRUAL		0	0	0	0	0	733	5398	74108	853	0	0	0	81092
EVAPORATION		1675	941	490	277	596	900	1193	2042	1089	1954	2628	2171	15956
DELIVERY & LOSS *		24	504	0	500	0	500	0	0	0	5009	8404	9855	24796
OWNERSHIP	101495	99796	98351	97861	97084	96488	95821	100026	172092	171851	164893	1153861	141835	
PACIFIC POWER & LIGHT														
ACCURAL		0	500	0	500	0	500	0	258	388	80	0	10	
DELIVERY *		396	321	321	289	250	331	269	0	0	0	0	0	
EVAPORATION		4	0	2	1	0	0	0	0	2	10	18	13	50
INSTORAGE	956	583	762	439	649	399	568	299	557	943	1013	935	932	

* Amounts shown as delivery are storage water only. Natural flow which was delivered is not shown in this table.

SUMMARY OF NORTH PLATTE STORAGE OWNERSHIP FOR WATER YEAR 1991 (ACRE-FEET)

MONTHS	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
GUERNSEY OWNERSHIP														
ACCRUAL		0	0	6204	12739	17520	9908	0	1397	0	0	0	0	47768
EVAPORATION		0	0	28	124	207	404	568	825	1005	171	0	0	3333
DELIVERY *		0	0	0	0	0	0	0	0	13298	31138	0	0	44436
OWNERSHIP	0	0	0	6176	18791	36104	45608	45040	45612	31309	0	0	0	
INLAND LAKES OWNERSHIP														
ACCRUAL		13488	10972	0	0	0	0	17667	0	0	0	0	0	42127
EVAPORATION		88	182	46	15	34	60	111	42	0	0	0	0	582
OWNERSHIP	0	10436	11611	11565	11550	11516	11456	13927	0	0	0	0	0	
TRANSFER		12575	0	0	0	0	0	15085	13883	0	0	0	0	41545
CITY OF CHEYENNE														
ACCRUAL		324	965	805	641	577	551	187	0	0	252	1014	853	6169
EVAPORATION		4	1	3	4	2	24	24	35	1	0	1	9	108
OWNERSHIP	1007	1327	2291	3093	3730	4305	4832	4995	343	60	312	1325	2169	
DELIVERY		0	0	0	0	0	0	0	4617	282	0	0	0	4899
EXCESS WATER														
ACCRUAL		0	0	0	0	0	0	0	646	0	0	0	0	646
USED(REGULATION)		0	0	0	0	0	0	0	0	0	0	0	0	0
EVAPORATION		1	2	2	1	1	1	0	4	0	0	0	0	12
OWNERSHIP	227	226	224	222	221	220	219	219	0	0	0	0	0	
TRANSFER TO OWNERSHIP		0	0	0	0	0	219	642	0	0	0	0	0	861

* Amounts shown as delivery are storage water only. Natural flow which was delivered is not shown in this table.

TABLE 5

NORTH PLATTE RIVER

RESERVOIR DATA

(Data in Acre-Feet)

Reservoir	Dead Storage[1]	Active Storage[2]	Total Storage	Normal Minimum Storage	Limitation on normal minimum storage
Seminoe	556	1,016,717	1,017,273	31,670	Minimum elevation for power generation
Kortes	151	4,588	4,739	1,666	Minimum elevation for power generation
Pathfinder	7	1,016,500	1,016,507	31,405	Minimum elevation for power generation
Alcova	91	184,314	184,405	153,802	Minimum elevation for power generation
Gray Reef	56	1,744	1,800	56	Lowest outlet elevation
Glendo	11,033	506,452	517,485[3]	63,148	Minimum elevation for power generation
Guernsey	0	45,612	45,612	0	Lowest outlet elevation
Total	11,894	2,775,927	2,787,821	281,747	

1/Storage capacity below elevation of lowest outlet
2/Total storage minus dead storage
3/An additional 271,917 acre-feet allocated to flood control

TABLE 6

NORTH PLATTE RIVER
POWERPLANT DATA

Powerplant	Number of Units	Capacity each Unit (KW)	Total installed Capacity (KW)	Normal operating Head (Ft)	Output at rated Head (Ft^3/s)	30 Year Average[1] (GWH)	Generation (GWH)	
							Percent of average[1]	Water Year (1991)
Seminoe	3	17,000	51,000	97-227	4,050	142.3	70%	99.4
Kortes	3	12,000	36,000	192-204	2,910	156.8	73%	114.7
Fremont Canyon	2	33,400	66,800	247-363	3,080	255.7	72%	184.4
Alcova	2	18,000	36,000	153-165	4,100	129.3	65%	84.4
Glendo	2	19,000	38,000	73-156	3,400	86.2	74%	63.7
Guernsey	2	2,400	4,800	89-91	1,340	23.9	66%	15.7
Total	14	-----	232,600	-----	-----	794.2	71%	562.3

1/1960-1989

PROPOSED UNIT MAINTENANCE SCHEDULE
NORTH PLATTE RIVER SYSTEM
OCTOBER 1991 THROUGH SEPTEMBER 1992

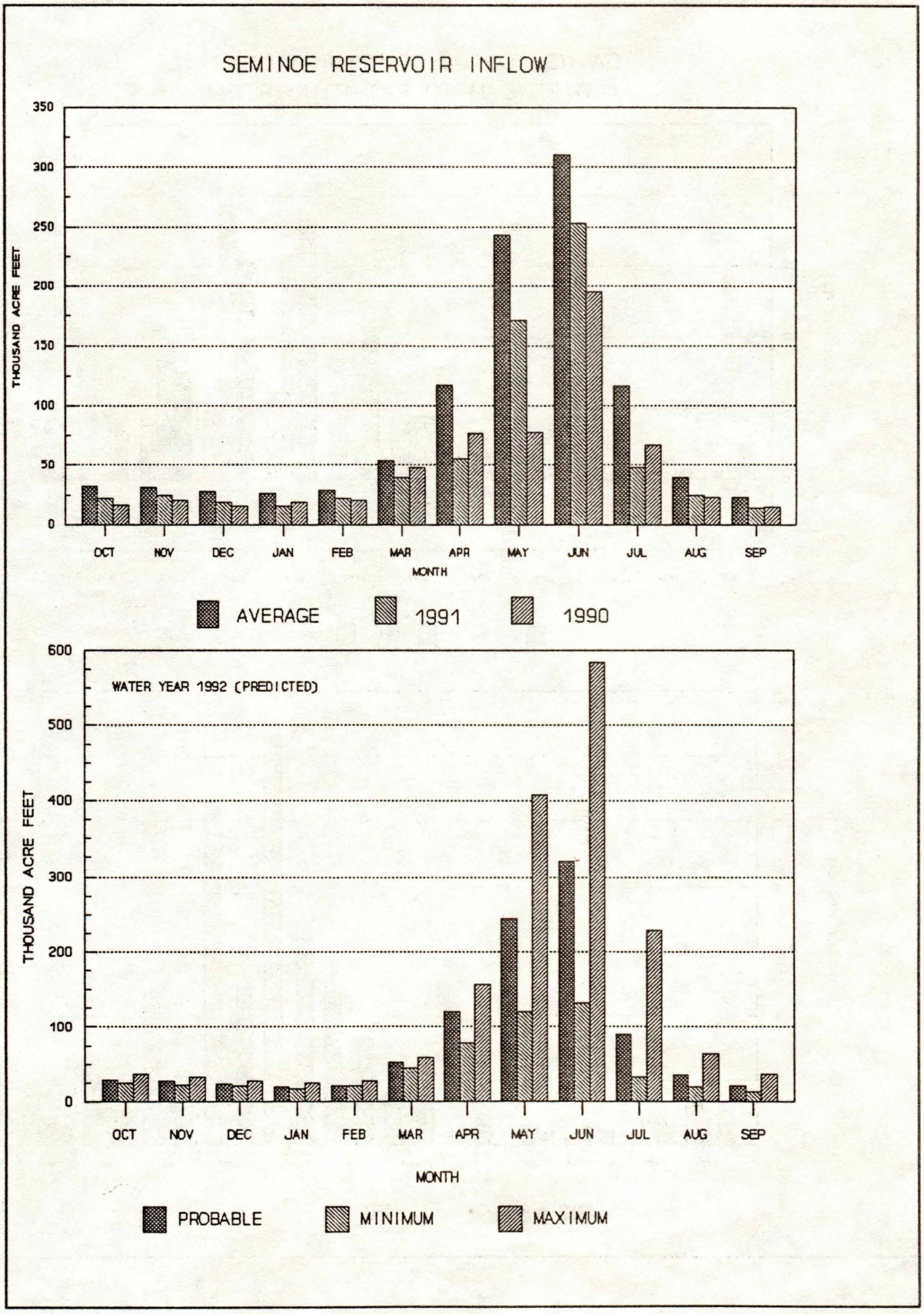
FACILITY AND UNIT NO.	SCHEDULED PERIOD	DESCRIPTION OF WORK
Kortes Unit #1	10-1-91 thru 10-31-91	Minor inspection and other work as required
Fremont Unit #2	10-7-91 thru 3-4-92	Turbine Cavitation repair
Kortes Unit #2	10-15-91 thru 11-21-91	Minor inspection and other work as required
Glendo Unit #1	11-4-91 thru 12-20-91	Minor inspection and other work as required
Kortes Unit #3	11-25-91 thru 1-2-92	Minor inspection and other work as required
Guernsey Unit #1	1-2-92 thru 1-31-92	Minor inspection and other work as required
Glendo Unit #2	1-2-92 thru 2-7-92	Minor inspection and other work as required
Seminoe Unit #3	1-6-92 thru 2-6-92	Minor inspection and other work as required
Alcova Units #1	1-6-92 thru 2-26-92	Minor inspection and other work as required
Guernsey Unit #2	2-3-92 thru 2-28-92	Minor inspection and other work as required
Seminoe Unit #2	2-10-92 thru 3-12-92	Minor inspection and other work as required
Alcova Units #2	3-2-92 thru 4-22-92	Minor inspection and other work as required
Fremont Unit #1	3-9-92 thru 3-25-92	Minor Inspection and other work as required
Seminoe Unit #1	3-16-92 thru 4-16-92	Minor inspection and other work as required

TABLE 8

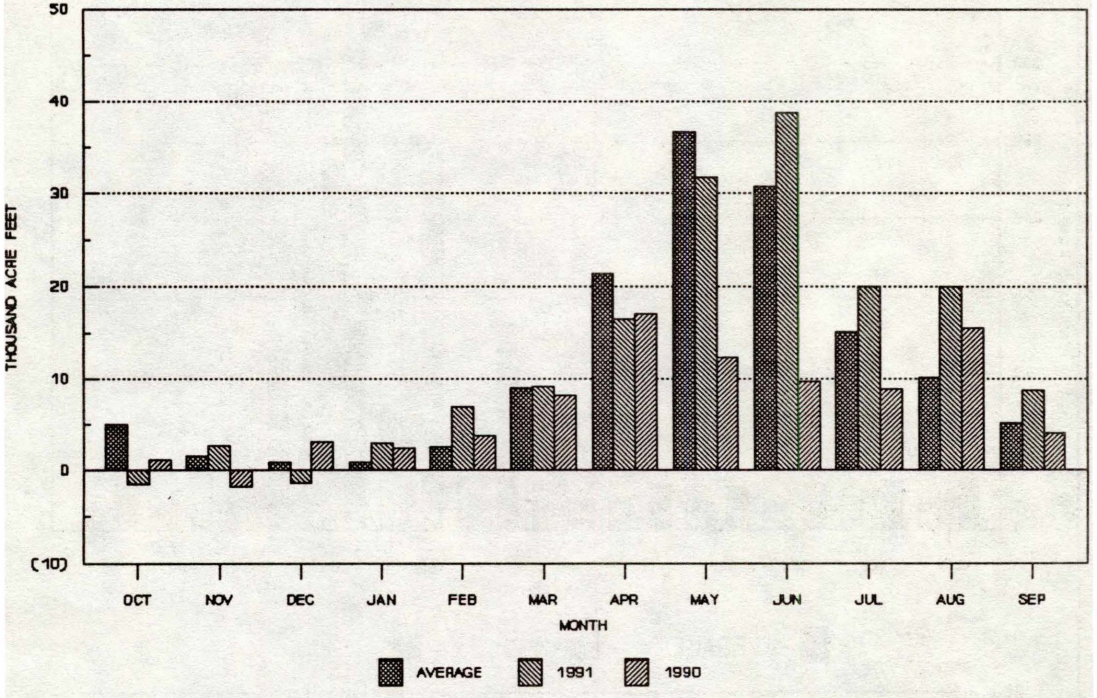
NORTH PLATTE RIVER BASIN PRECIPITATION BY WATERSHED

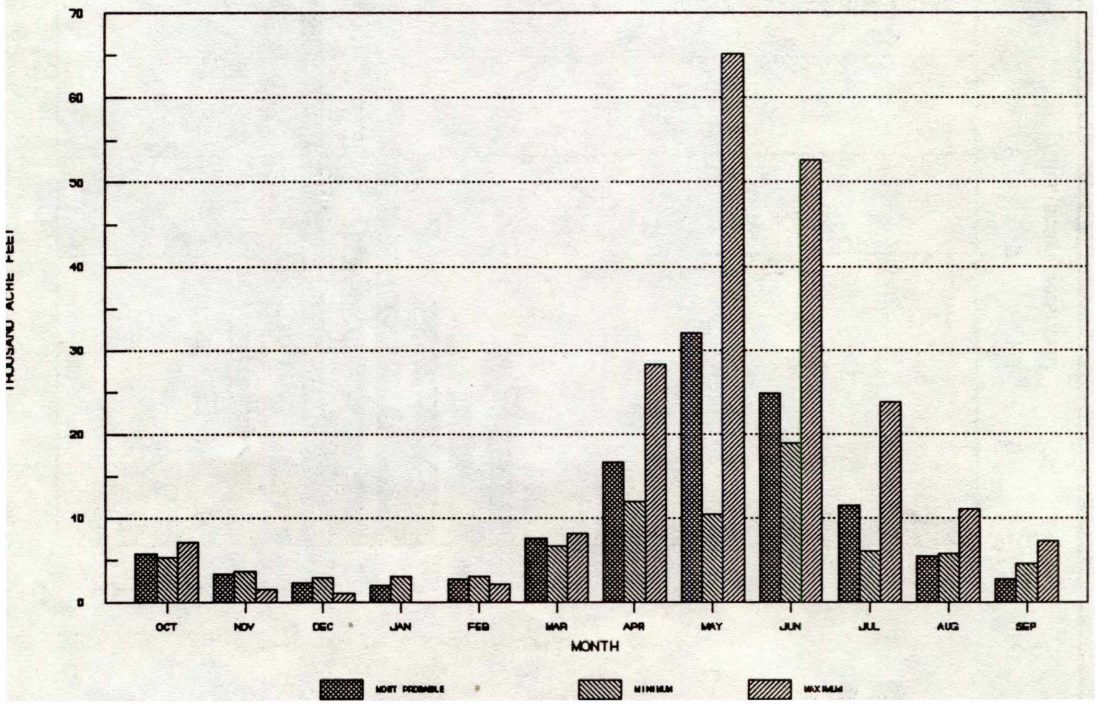
	SEMINOE Precip in inches	WATERSHED Percent of Average	PATHFINDER Precip in inches	WATERSHED Percent of Average	GLENDO Precip in inches	WATERSHED Percent of Average	GUERNSEY Precip in inches	WATERSHED Percent of Average
October	1.32	127	0.92	98	0.79	92	0.48	57
November	1.01	116	1.48	231	0.90	148	1.29	235
December	0.39	51	0.44	90	0.58	126	0.14	35
January	0.34	49	0.34	87	0.37	88	0.27	82
February	0.53	79	0.48	102	0.29	62	0.20	56
March	1.16	126	0.38	46	0.47	62	0.63	78
April	0.92	75	1.95	132	1.34	89	1.88	109
May	2.51	178	3.75	205	4.57	215	6.51	268
June	1.38	117	1.78	158	2.29	147	4.92	212
July	1.39	109	0.58	68	0.42	34	1.46	86
August	0.91	76	0.31	48	0.50	71	1.50	150
September	0.81	71	0.70	79	0.60	61	0.81	68
Water Year	12.67	102	13.11	124	13.12	112	20.09	147

EXHIBIT 1

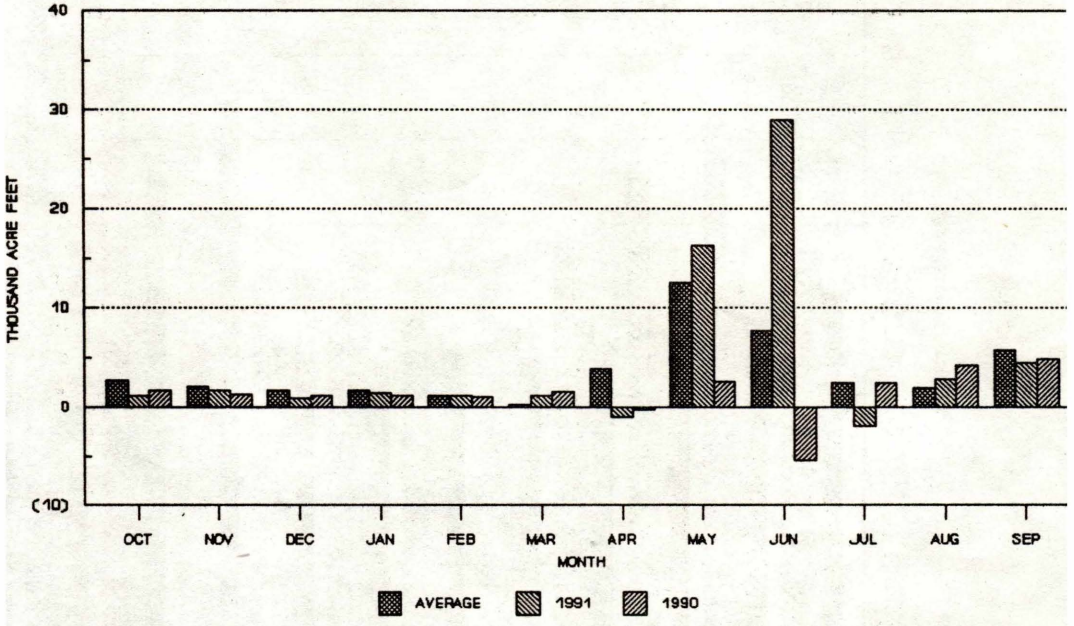

SEMINOE RESERVOIR INFLOW
THOUSAND ACRE FEET
350
300
250
200
150
100
50
0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
MONTH
AVERAGE
1991
1990
WATER YEAR 1992 (PREDICTED)
THOUSAND ACRE FEET
600
500
400
300
200
100
0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
MONTH
PROBABLE
MINIMUM
MAXIMUM

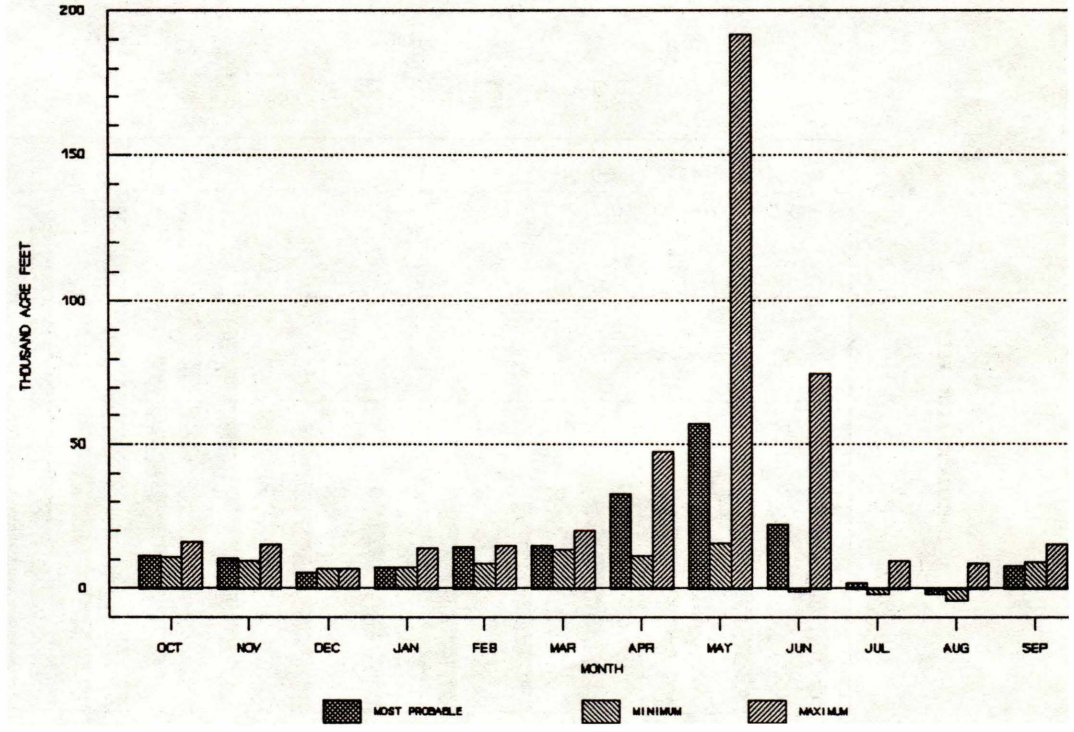
GAINS TO THE NORTH PLATTE RIVER
KORTES DAM TO PATHFINDER DAM



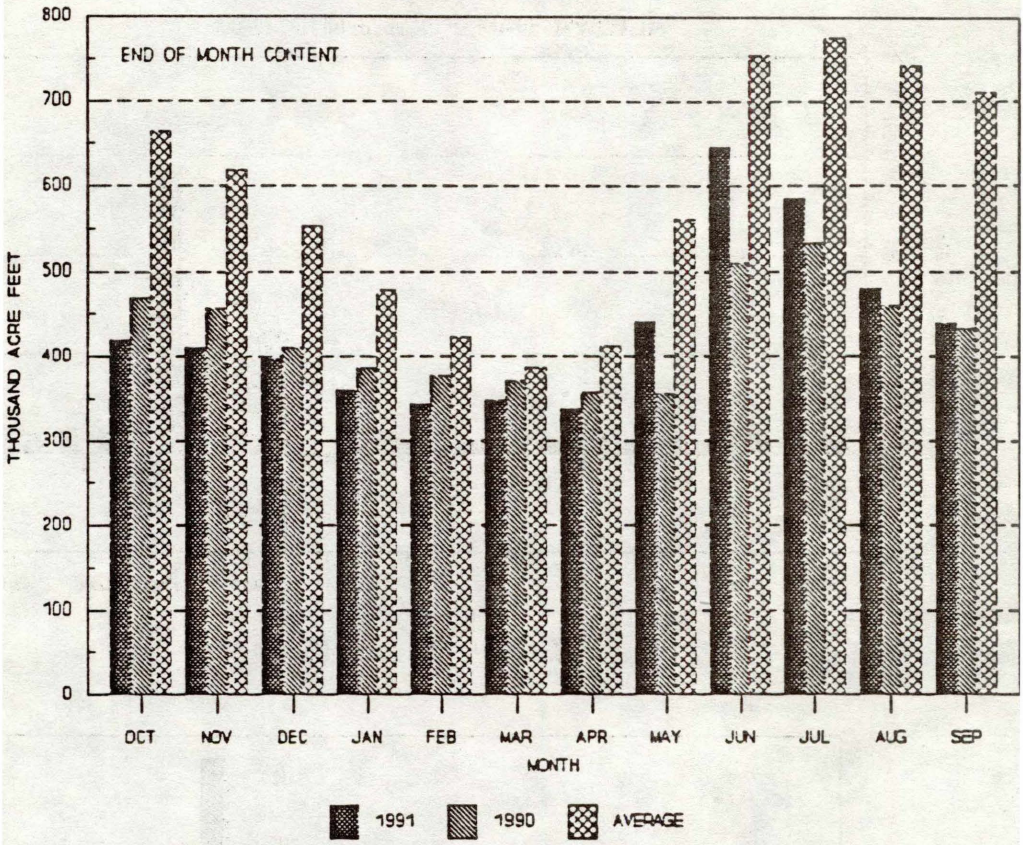


GAINS TO THE NORTH PLATTE RIVER
ALCOVA DAM TO GLENDO DAM





SEMINOE RESERVOIR STORAGE



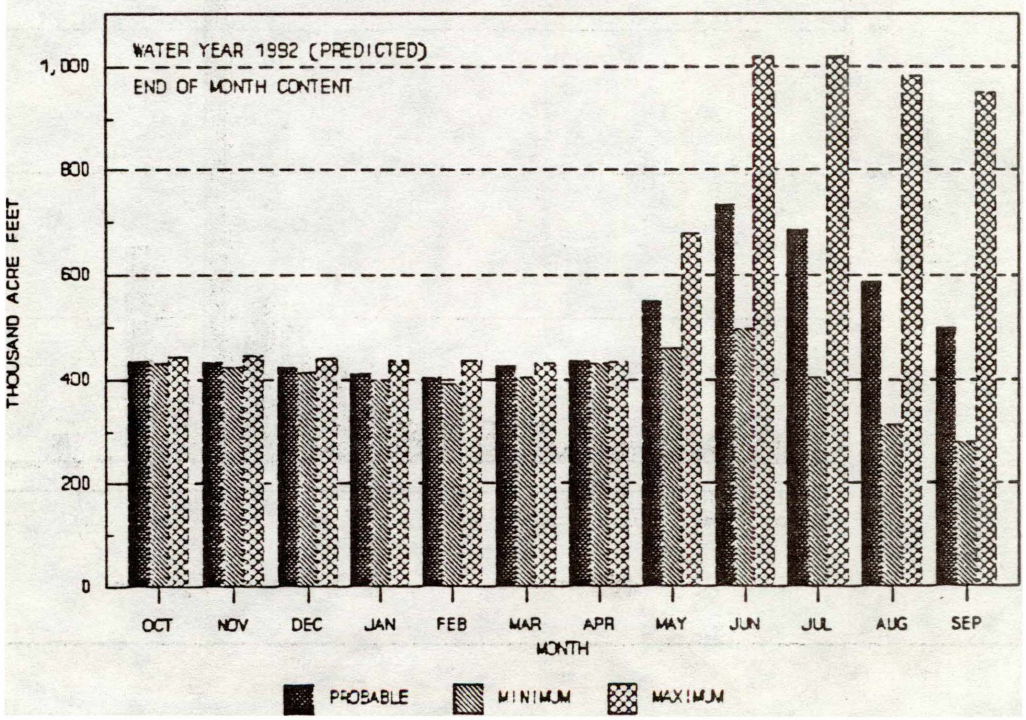
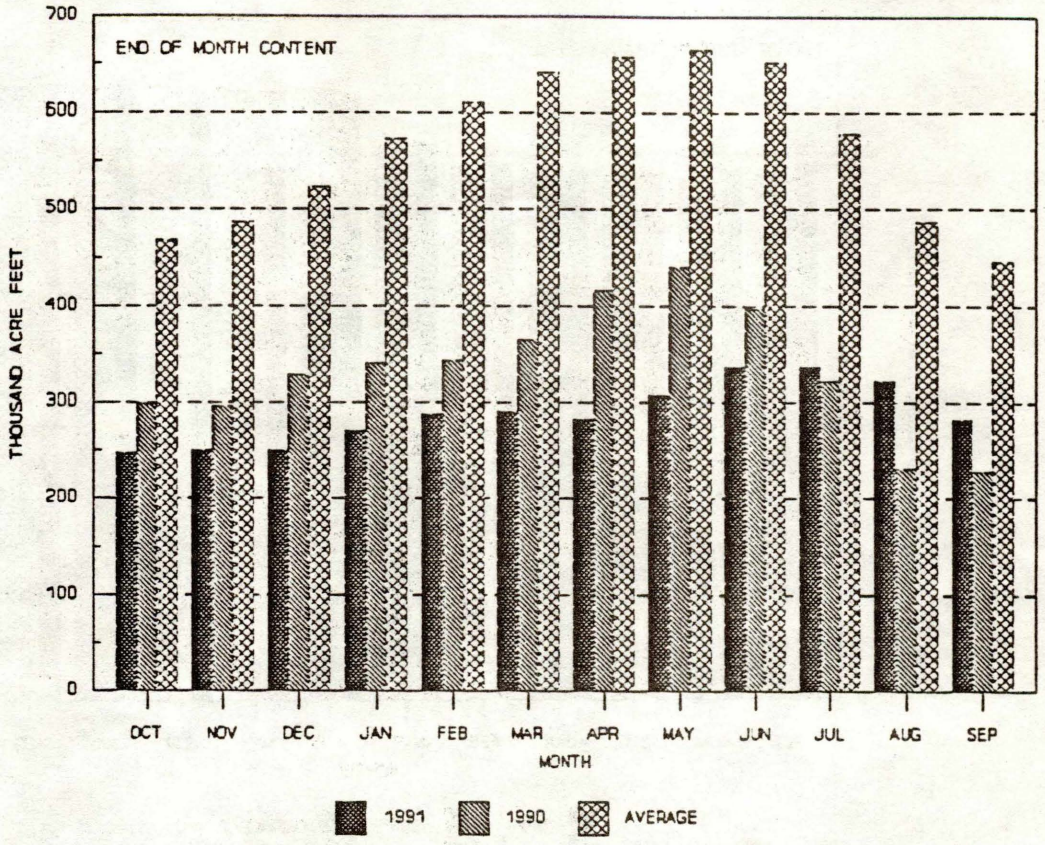
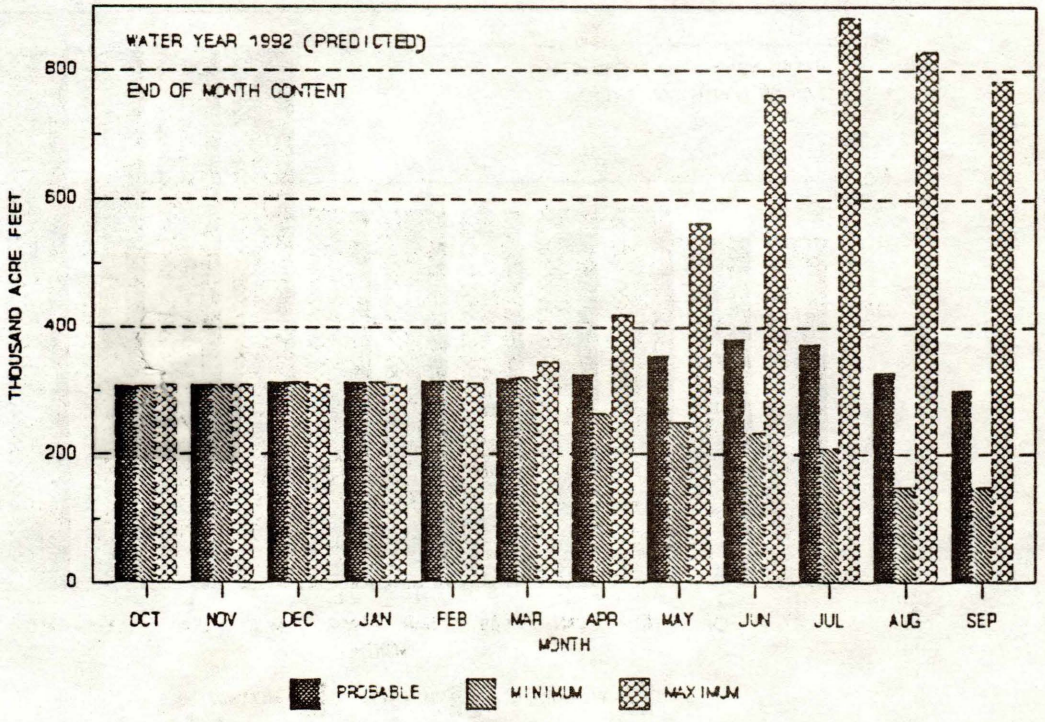
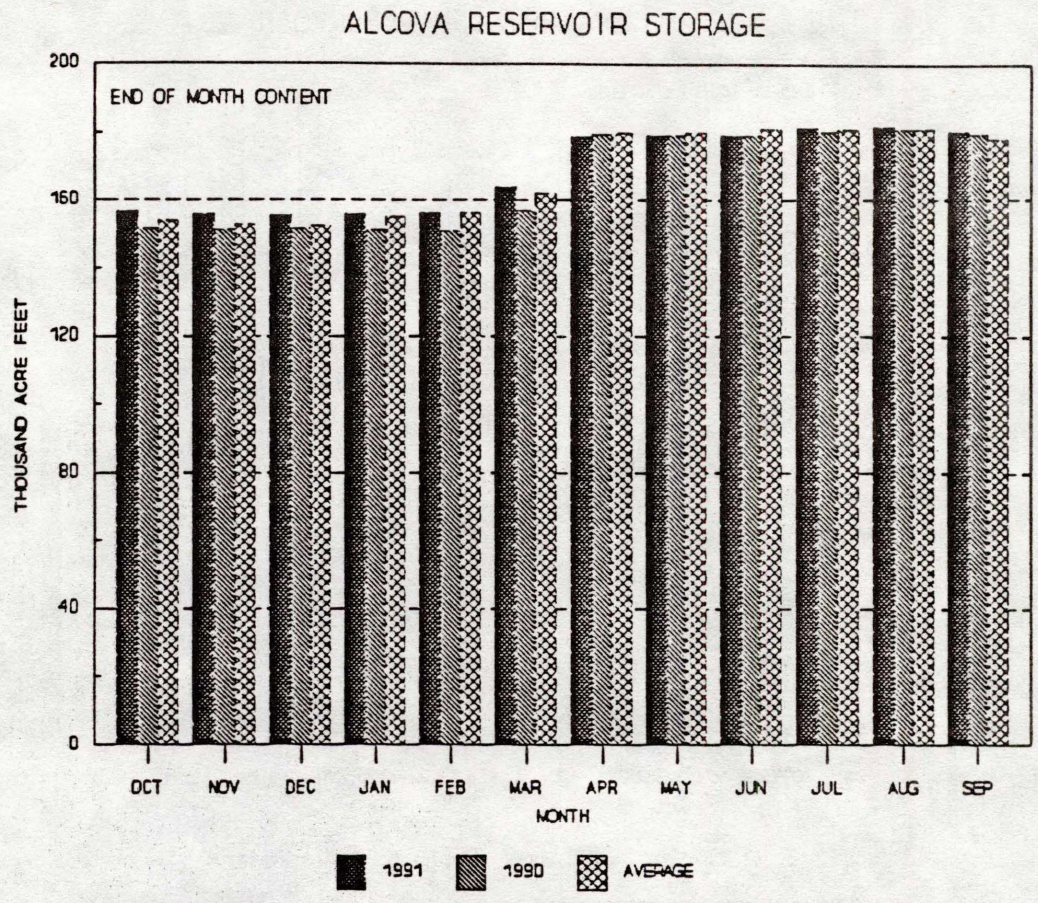


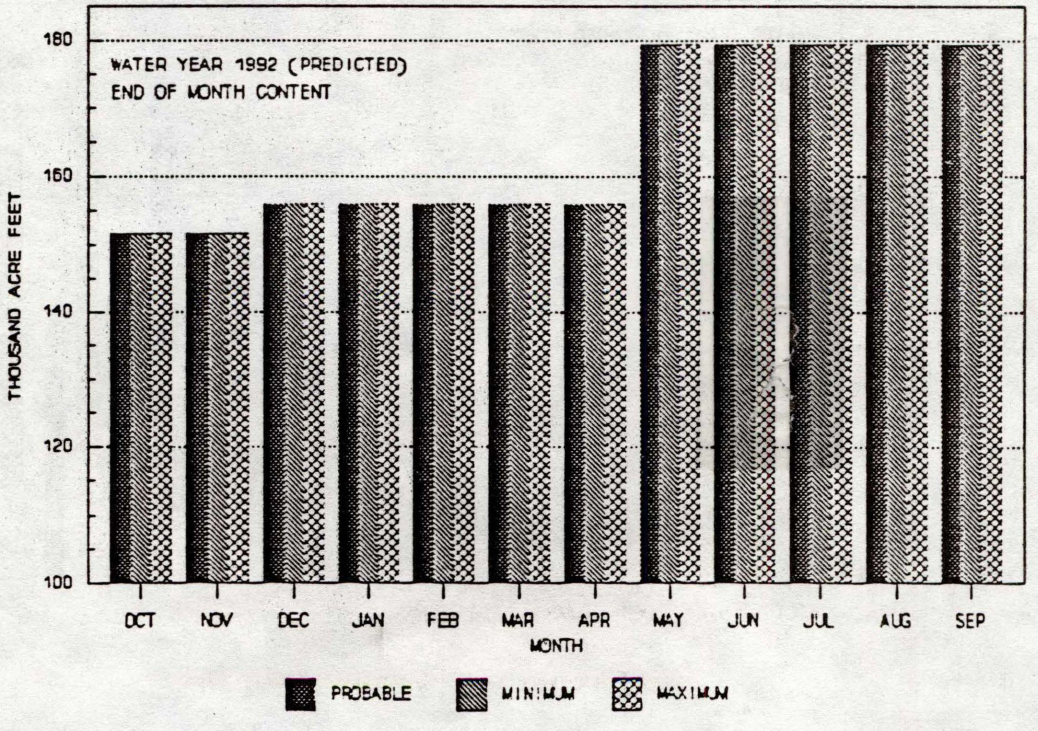
EXHIBIT 5

PATHFINDER RESERVOIR STORAGE

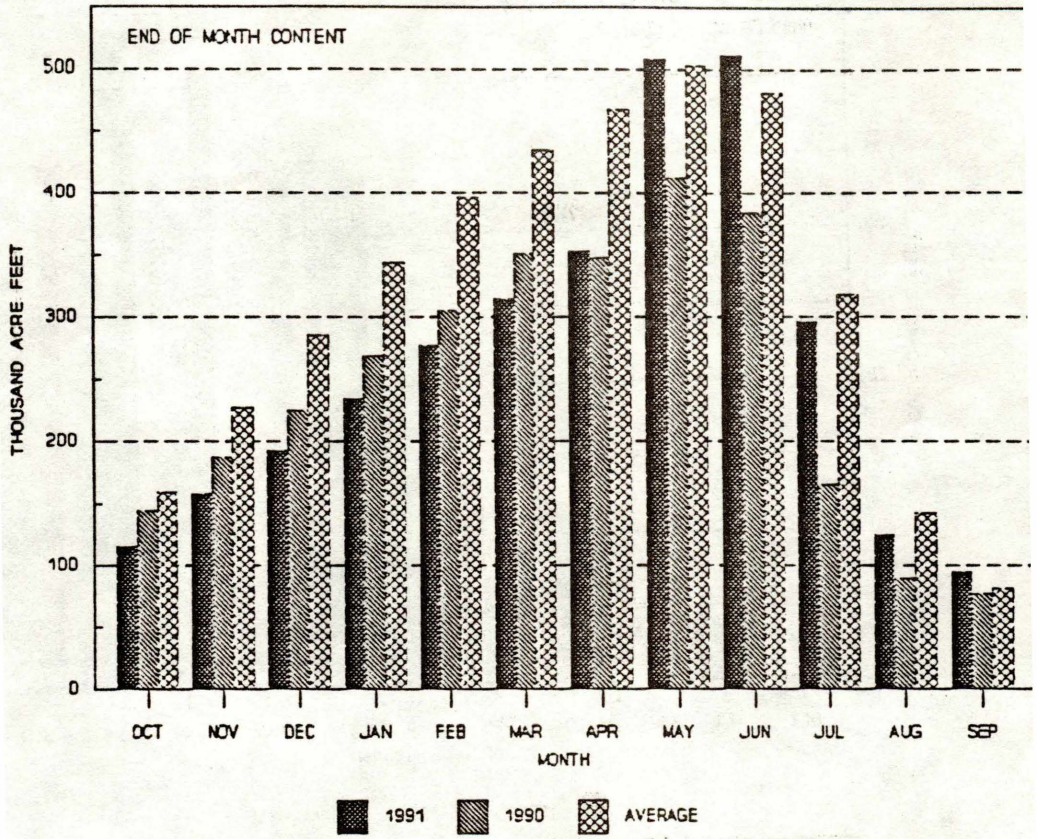


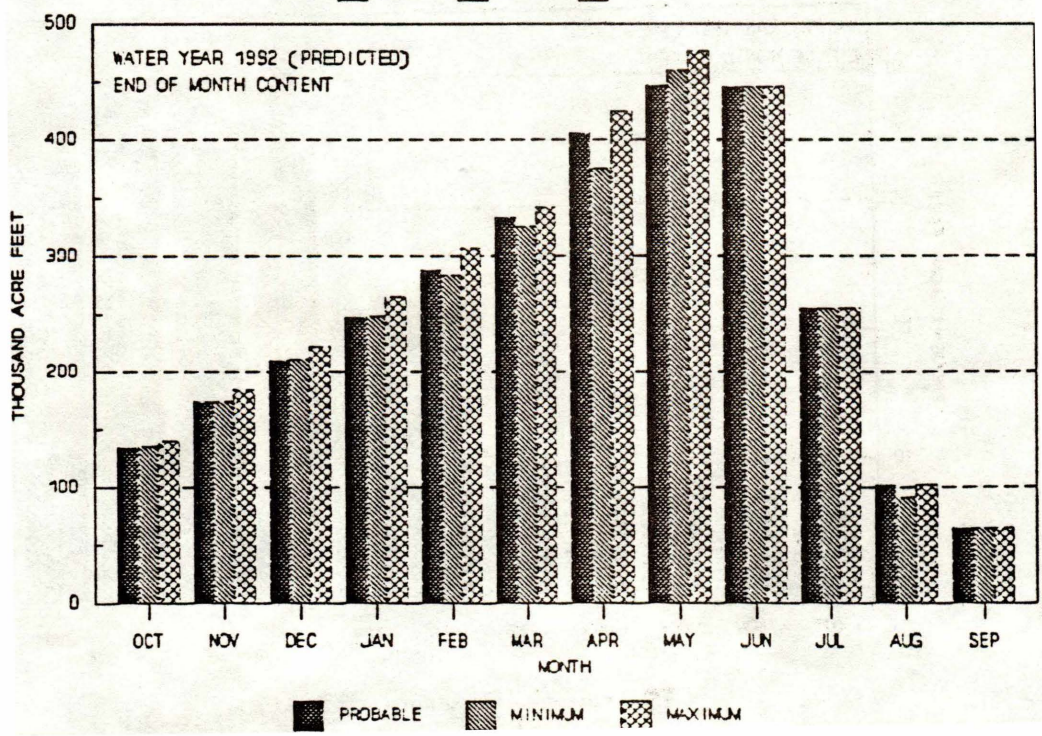



ALCOVA RESERVOIR STORAGE
END OF MONTH CONTENT
THOUSAND ACRE FEET
200
160
120
80
40
0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
MONTH
1991
1990
AVERAGE

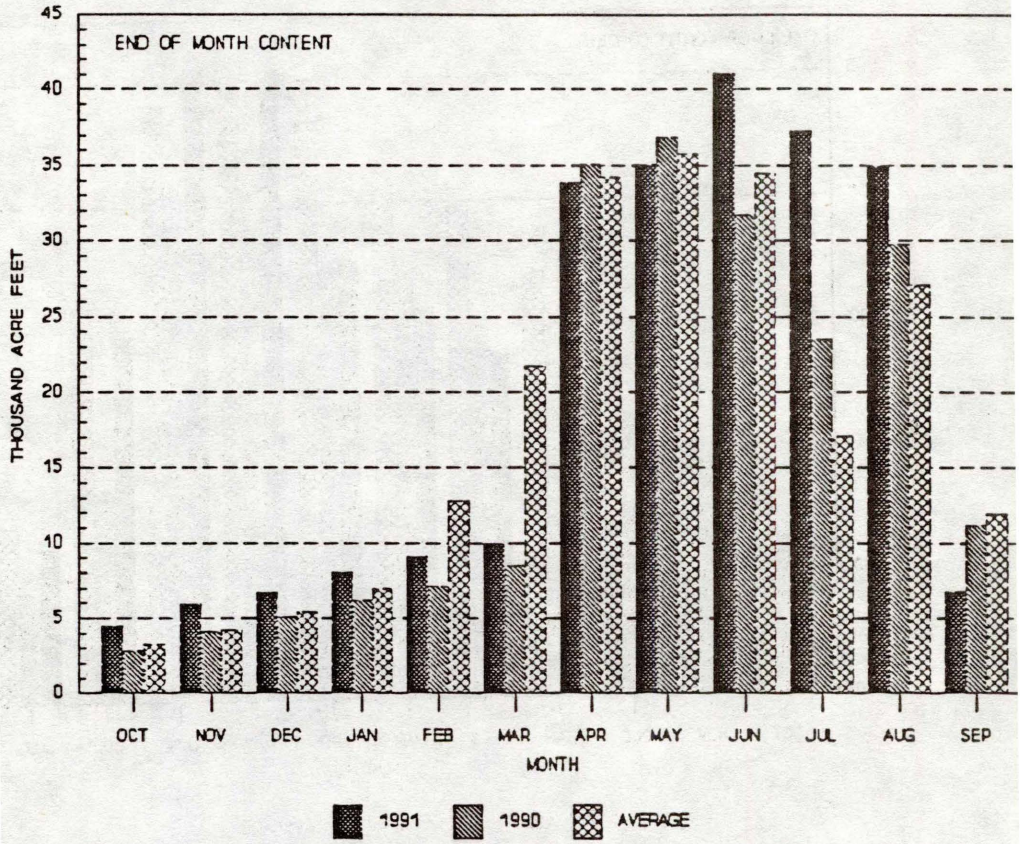

WATER YEAR 1992 (PREDICTED)
END OF MONTH CONTENT
THOUSAND ACRE FEET
180
160
140
120
100
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
MONTH
PROBABLE
MINIMUM
MAXIMUM

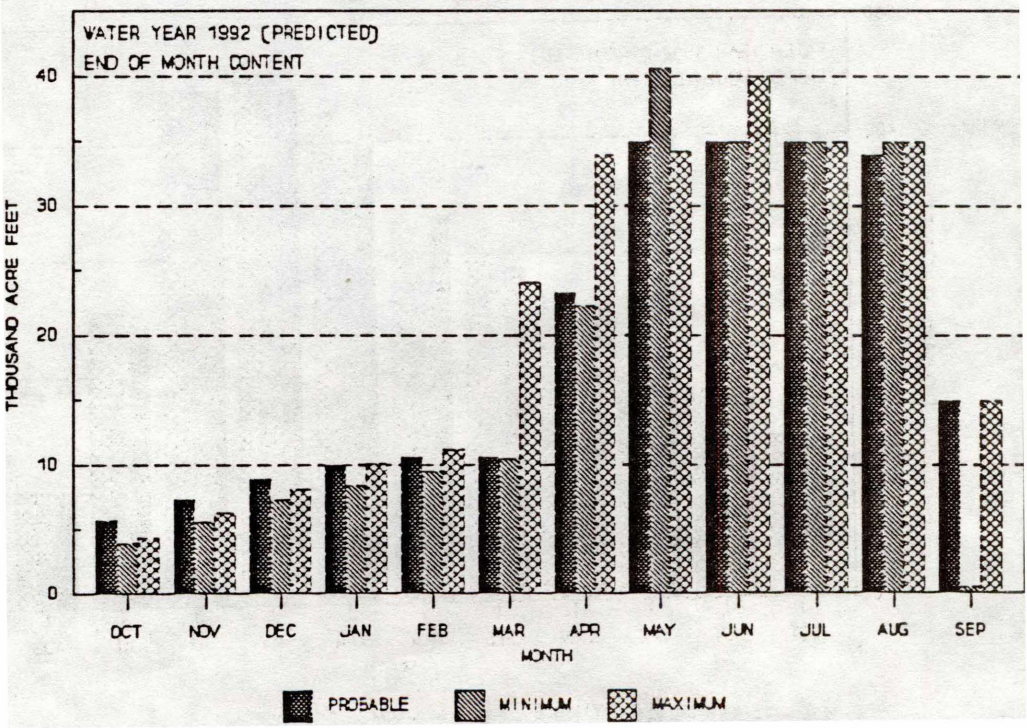
GLENDO RESERVOIR STORAGE

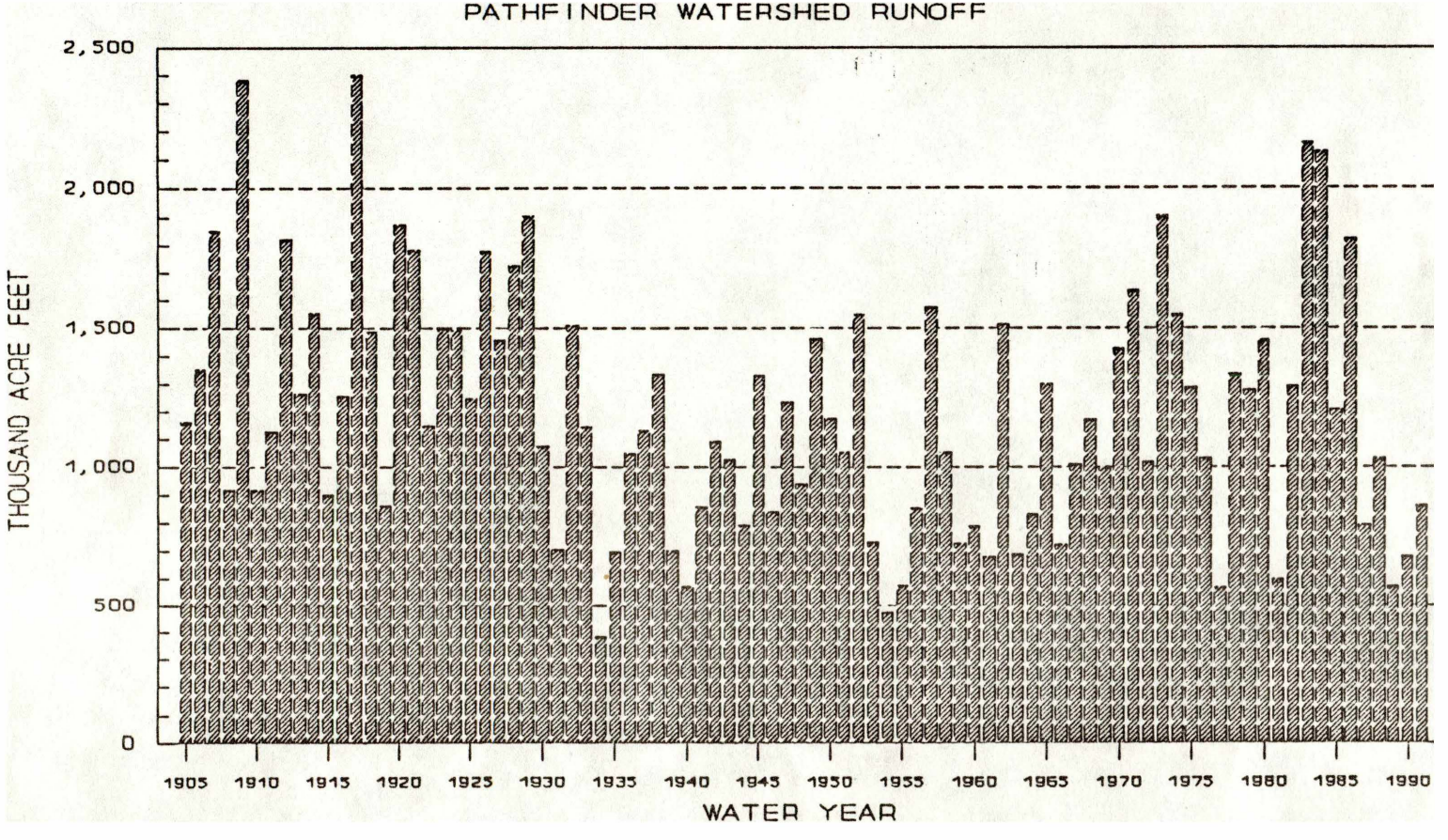




GUERNSEY RESERVOIR STORAGE






PATHFINDER WATERSHED RUNOFF
THOUSAND ACRE FEET
2,500
2,000
1,500
1,000
500
0
1905
1910
1915
1920
1925
1930
1935
1940
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
WATER YEAR

UNITED STATES BUREAU OF RECLAMATION
GREAT PLAINS REGION
NORTH PLATTE RIVER PROJECTS
MILLS, WYOMING

OCTOBER 1992 SYSTEM OPERATING PLAN

MOST PROBABLE WATER SUPPLY CONDITION

WATER IN 1000 ACRE FEET * * * * * * * * * * ENERGY IN G W H

	INI-SUM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
SEMINOE AND KORTES RESERVOIRS													
INFLOW	1005.1	29.1	27.6	23.2	19.9	21.4	53.2	120.4	244.3	319.9	90.0	35.1	21.0
TURBINE RELEASES	901.0	30.8	29.8	30.8	30.8	27.8	30.8	107.4	124.0	128.2	131.3	125.3	104.0
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
EVAPORATION SEMINOE	43.9	1.9	1.1	0.7	0.7	0.8	1.8	3.1	4.1	8.0	9.4	7.3	5.0
SEMINOE END OF MONTH CONTENT	439.7	436.1	432.8	424.5	412.9	405.7	426.4	436.2	552.5	736.2	685.5	588.0	500.1
ELEVATION	6318.3	6318.0	6317.6	6316.8	6315.7	6314.9	6317.0	6318.0	6328.2	6341.3	6338.0	6331.0	6323.8
KWH / AF		322.4	322.0	321.5	320.5	319.5	320.2	321.7	327.1	337.1	341.8	337.0	331.1
GENERATION GWH	298.0	9.9	9.6	9.9	9.9	8.9	9.9	34.6	40.6	43.2	44.9	42.2	34.4
PATHFINDER RESERVOIR													
GAIN KORTES TO PATHFINDER	116.6	5.7	3.3	2.2	2.0	2.7	7.6	16.6	32.0	24.8	11.5	5.4	2.8
TOTAL INFLOW	1017.6	36.5	33.1	33.0	32.8	30.5	38.4	124.0	156.0	153.0	142.8	130.7	106.8
FREMONT CANYON TURBINE WATER	896.1	7.0	29.9	30.8	30.9	27.9	32.0	117.1	121.5	122.3	127.2	126.7	122.8
SPILL OR BYPASS	65.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.2	44.0	6.2
EVAPORATION PATHFINDER	34.2	1.6	1.1	0.6	0.6	0.7	1.5	2.7	3.7	5.5	6.6	5.6	4.0
END OF MONTH CONTENT	281.9	309.8	311.9	313.5	314.8	316.8	321.7	325.9	356.7	381.9	375.7	330.1	303.9
ELEVATION	5798.1	5801.5	5801.8	5802.0	5802.1	5802.3	5802.9	5803.4	5806.8	5809.5	5808.8	5803.9	5800.8
KWH / AF		246.6	252.1	252.3	252.4	252.6	252.9	249.4	248.1	250.6	251.3	249.2	245.7
GENERATION FREMONT CANYON	223.8	1.7	7.5	7.8	7.8	7.1	8.1	29.2	30.2	30.6	32.0	31.6	30.2
ALCOVA RESERVOIR													
INFLOW	961.5	7.0	29.9	30.8	30.9	27.9	32.0	117.1	121.5	122.3	142.4	170.7	129.0
RELEASE TO CASPER CANAL	74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	17.0	18.0	17.0	7.0
TURBINE RELEASE	879.3	30.7	29.7	30.7	30.7	27.7	31.6	93.0	105.5	103.9	122.7	152.3	120.8
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
EVAPORATION ALCOVA	9.1	0.6	0.2	0.1	0.2	0.2	0.4	0.7	1.0	1.4	1.7	1.4	1.2
END OF MONTH CONTENT	180.3	156.0	156.0	156.0	156.0	156.0	156.0	179.4	179.4	179.4	179.4	179.4	179.4
ELEVATION	5498.3	5488.0	5488.0	5488.0	5488.0	5488.0	5488.0	5498.0	5498.0	5498.0	5498.0	5498.0	5498.0
KWH / AF		138.0	136.0	136.0	136.0	136.0	136.0	138.0	140.0	140.0	140.0	140.0	140.0
GENERATION GWH	122.3	4.2	4.0	4.2	4.2	3.8	4.3	12.8	14.8	14.6	17.2	21.3	16.9

UNITED STATES BUREAU OF RECLAMATION
GREAT PLAINS REGION
NORTH PLATTE RIVER PROJECTS
MILLS, WYOMING

OCTOBER 1992 SYSTEM OPERATING PLAN

MOST PROBABLE WATER SUPPLY CONDITION

WATER IN 1000 ACRE FEET * * * * * * * * * * ENERGY IN G W H

	INI-SUM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
GLENDO RESERVOIR													
ALCOVA TO GLENDO GAIN	183.9	11.1	10.5	5.7	7.4	14.2	14.7	32.7	57.2	22.3	2.2	-1.8	7.7
TOTAL INFLOW	1063.2	41.8	40.2	36.4	38.1	41.9	46.3	125.7	162.7	126.2	124.9	150.5	128.5
TURBINE RELEASE	895.0	0.0	0.0	0.0	0.0	0.0	0.0	50.7	116.0	120.9	214.7	228.4	164.3
BYPASS OR SPILL	165.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	94.0	71.6	0.0
EVAPORATION AND SEEPAGE	31.8	0.8	0.7	0.7	0.7	0.9	1.6	2.8	5.3	6.6	6.6	3.4	1.7
END OF MONTH CONTENT	94.1	135.1	174.6	210.3	247.7	288.8	333.4	405.7	447.1	445.8	255.4	102.4	65.0
ELEVATION	4578.8	4588.2	4595.5	4601.2	4606.6	4611.9	4617.3	4624.9	4628.9	4628.8	4607.6	4580.9	4570.6
KWH / AF		64.8	73.7	81.8	88.8	94.2	100.1	105.4	109.8	111.4	104.0	78.9	57.8
GENERATION GWH	81.4	0.0	0.0	0.0	0.0	0.0	0.0	5.4	12.7	13.5	22.3	18.0	9.5
GUERNSEY													
GLENDO TO GUERNSEY GAIN	28.6	2.0	1.5	1.6	1.1	0.6	0.0	1.9	5.8	6.1	2.3	2.0	3.7
TOTAL INFLOW	1089.2	2.0	1.5	1.6	1.1	0.6	0.0	52.6	121.8	127.0	311.0	302.0	168.0
NORTH PLATTE REQUIREMENT	1053.0	3.0	0.0	0.0	0.0	0.0	0.0	40.0	110.0	125.0	305.0	295.0	175.0
NORTH PLATTE DELIVERY	1053.0	3.0	0.0	0.0	0.0	0.0	0.0	40.0	110.0	125.0	305.0	295.0	175.0
GLENDO IRRIGATION DELIVERY	28.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	6.0	8.0	12.0
SEEP, OWN. SPILL, & EVAP	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
EXCESS WATER 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
EXCESS WATER DELVRY/TRANSFER	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
BYPASS	713.0	0.1	0.2	0.3	0.4	0.3	0.3	0.4	43.4	63.9	245.8	237.7	120.2
TURBINE RELEASE	369.5	2.9	0.0	0.0	0.0	0.0	0.0	39.6	66.6	63.1	65.2	65.3	66.8
END OF MONTH CONTENT	6.8	5.8	7.3	8.9	10.0	10.6	10.6	23.2	35.0	35.0	35.0	34.0	15.0
ELEVATION	4396.9	4395.6	4397.5	4399.2	4400.3	4400.8	4400.8	4409.4	4415.3	4415.3	4415.3	4414.8	4404.3
KWH / AF		48.6	49.1	52.2	54.9	56.3	56.6	62.9	71.5	73.0	73.0	72.9	68.7
GENERATION GWH	26.2	0.1	0.0	0.0	0.0	0.0	0.0	2.5	4.8	4.6	4.8	4.8	4.6
GAIN TO STORAGE WATER OWNERSHIP													
INLAND LAKES IN GUER & GLEND	0.0	10.0	21.8	21.8	21.8	21.8	21.8	0.0	0.0	0.0	0.0	0.0	0.0
N.P. GUERNSEY WATER	0.0	0.0	0.0	7.0	15.1	23.4	23.4	33.4	45.2	0.0	0.0	0.0	0.0
N.P. GUERNSEY + INLAND LAKES	0.0	10.0	21.8	28.8	36.9	45.2	45.2	33.4	45.2	0.0	0.0	0.0	0.0
GLENDO OWNERSHIP GAIN	38.0	0.0	0.0	0.0	0.0	5.9	14.3	0.0	17.8	0.0	0.0	0.0	0.0
KENDRICK OWNERSHIP GAIN	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

UNITED STATES BUREAU OF RECLAMATION
GREAT PLAINS REGION
NORTH PLATTE RIVER PROJECTS
MILLS, WYOMING

OCTOBER 1992 SYSTEM OPERATING PLAN

MOST PROBABLE WATER SUPPLY CONDITION

WATER IN 1000 ACRE FEET * * * * * * * * * * ENERGY IN G W H

	INI-SUM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
STORAGE WATER OWNERSHIP ACCOUNTING													
EVAPORATION NORTH PLATTE	53.1	1.3	0.9	0.5	0.6	0.7	1.7	3.6	6.0	11.0	13.2	8.7	4.9
TOTAL DELIVERY NORTH PLATTE	1106.1	4.3	0.9	0.5	0.6	0.7	1.7	43.6	116.0	136.0	318.2	303.7	179.9
NORTH PLATTE STORAGE **	170.8	214.4	256.5	288.7	318.5	350.8	410.3	538.4	743.9	981.0	768.8	505.7	361.0
EVAPORATION KENDRICK	46.3	2.7	1.5	1.0	1.1	1.1	2.5	4.3	5.0	7.4	8.0	6.6	5.1
TOTAL DELIVERY KENDRICK	120.3	2.7	1.5	1.0	1.1	1.1	2.5	4.3	20.0	24.4	26.0	23.6	12.1
KENDRICK GAIN	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
KENDRICK STORAGE (INCL CHYN)	689.3	686.6	685.1	684.1	683.0	681.9	679.3	675.0	655.0	630.6	604.6	581.0	569.0
EVAPORATION GLENDO	19.5	0.9	0.8	0.6	0.5	0.7	1.1	1.4	3.1	3.0	3.1	2.4	1.9
TOTAL DELIVERY GLENDO	47.5	0.9	0.8	0.6	0.5	0.7	1.1	1.4	3.1	5.0	9.1	10.4	13.9
GLENDO GAIN	38.0	0.0	0.0	0.0	0.0	5.9	14.3	0.0	17.8	0.0	0.0	0.0	0.0
GLENDO STORAGE (INCL PP&L)	142.7	141.9	141.1	140.5	139.9	145.2	158.4	157.0	171.7	166.7	157.6	147.2	133.3
COMBINED OWNERSHIP STORAGE	1002.8	1042.9	1082.6	1113.3	1141.4	1177.8	1248.1	1370.4	1570.7	1778.3	1531.0	1234.0	1063.3
COMBINED PHYSICAL STORAGE	1002.8	1042.9	1082.6	1113.3	1141.4	1177.8	1248.1	1370.4	1570.7	1778.3	1531.0	1234.0	1063.3

** Includes Alice and Minatare water stored temporarily in the mainstem facilities for later transfer to the Inland Lakes. It does not reflect water currently in Lake Alice and Lake Minatare.

UNITED STATES BUREAU OF RECLAMATION
GREAT PLAINS REGION
NORTH PLATTE RIVER PROJECTS
MILLS, WYOMING

OCTOBER 1992 SYSTEM OPERATING PLAN

REASONABLE MINIMUM WATER SUPPLY CONDITION

WATER IN 1000 ACRE FEET * * * * * * * * * * ENERGY IN G W H

	INI-SUM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
SEMINOE AND KORTES RESERVOIRS													
INFLOW	552.0	25.3	23.0	20.8	17.9	21.2	44.8	78.2	121.0	132.6	33.0	20.5	13.7
TURBINE RELEASES	678.9	30.7	29.8	30.7	30.7	27.8	30.7	50.0	86.8	91.0	119.4	105.0	46.3
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
EVAPORATION SEMINOE	34.1	1.9	1.1	0.7	0.7	0.7	1.7	3.1	3.7	6.2	6.4	4.7	3.2
SEMINOE END OF MONTH CONTENT	439.7	432.5	424.5	413.9	400.4	393.1	405.5	430.6	461.1	496.5	403.7	314.5	278.8
ELEVATION	6318.3	6317.6	6316.8	6315.8	6314.4	6313.6	6314.9	6317.4	6320.3	6323.5	6314.7	6304.8	6300.2
KWH / AF		322.2	321.4	320.5	319.3	318.2	318.5	320.4	323.2	325.5	323.6	314.5	308.2
GENERATION GWH	217.4	9.9	9.6	9.8	9.8	8.9	9.8	16.0	28.1	29.6	38.6	33.0	14.3
PATHFINDER RESERVOIR													
GAIN KORTES TO PATHFINDER	72.3	5.3	3.6	2.9	3.1	3.1	6.6	12.0	10.5	8.9	6.0	5.8	4.5
TOTAL INFLOW	751.2	36.0	33.4	33.6	33.8	30.9	37.3	62.0	97.3	99.9	125.4	110.8	50.8
FREMONT CANYON TURBINE WATER	780.3	8.0	30.0	30.8	30.9	28.0	31.1	115.9	108.3	112.1	120.4	115.1	49.7
SPILL OR BYPASS	78.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.8	53.8	0.0
EVAPORATION PATHFINDER	25.9	1.6	1.1	0.6	0.6	0.7	1.5	2.5	3.0	4.0	4.4	3.5	2.4
END OF MONTH CONTENT	281.9	308.3	310.6	312.9	315.1	317.4	322.1	265.7	251.7	235.6	211.4	149.8	148.5
ELEVATION	5798.1	5801.3	5801.6	5801.9	5802.2	5802.4	5803.0	5795.9	5794.0	5791.7	5788.1	5777.5	5777.2
KWH / AF		246.5	251.9	252.2	252.4	252.6	253.0	246.4	239.9	238.1	235.3	229.3	224.9
GENERATION FREMONT CANYON	187.4	2.0	7.6	7.8	7.8	7.1	7.9	28.6	26.0	26.7	28.3	26.4	11.2
ALCOVA RESERVOIR													
INFLOW	858.9	8.0	30.0	30.8	30.9	28.0	31.1	115.9	108.3	112.1	145.2	168.9	49.7
RELEASE TO CASPER CANAL	84.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0	19.0	20.0	19.0	9.0
TURBINE RELEASE	766.7	31.7	29.8	30.7	30.7	27.8	30.7	91.8	90.3	91.7	123.5	148.5	39.5
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
EVAPORATION ALCOVA	9.1	0.6	0.2	0.1	0.2	0.2	0.4	0.7	1.0	1.4	1.7	1.4	1.2
END OF MONTH CONTENT	180.3	156.0	156.0	156.0	156.0	156.0	156.0	179.4	179.4	179.4	179.4	179.4	179.4
ELEVATION	5498.3	5488.0	5488.0	5488.0	5488.0	5488.0	5488.0	5498.0	5498.0	5498.0	5498.0	5498.0	5498.0
KWH / AF		138.0	136.0	136.0	136.0	136.0	136.0	138.0	140.0	140.0	140.0	140.0	140.0
GENERATION GWH	106.6	4.4	4.1	4.2	4.2	3.8	4.2	12.7	12.6	12.8	17.3	20.8	5.5

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NORTH PLATTE RIVER PROJECTS
MILLS, WYOMING

OCTOBER 1992 SYSTEM OPERATING PLAN

REASONABLE MINIMUM WATER SUPPLY CONDITION

WATER IN 1000 ACRE FEET * * * * * * * * * * ENERGY IN G W H

	INI-SUM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
GLENDO RESERVOIR													
ALCOVA TO GLENDO GAIN	85.6	10.9	9.5	6.9	7.2	8.5	13.4	11.3	15.6	-0.9	-1.8	-4.1	9.1
TOTAL INFLOW	852.3	42.6	39.3	37.6	37.9	36.3	44.1	103.1	105.9	90.8	121.7	144.4	48.6
TURBINE RELEASE	681.0	0.0	0.0	0.0	0.0	0.0	0.0	51.2	16.2	98.6	214.7	226.6	73.7
BYPASS OR SPILL	168.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	90.8	78.1	0.0
EVAPORATION AND SEEPAGE	31.5	0.8	0.7	0.7	0.7	0.9	1.6	2.6	5.2	6.7	6.6	3.4	1.6
END OF MONTH CONTENT	94.1	135.9	174.5	211.4	248.6	284.1	326.5	375.8	460.3	445.8	255.4	91.7	65.0
ELEVATION	4578.8	4588.3	4595.5	4601.4	4606.7	4611.4	4616.5	4621.9	4630.1	4628.8	4607.6	4578.2	4570.6
KWH / AF		64.9	73.7	81.9	88.9	93.9	99.3	104.0	109.2	111.9	104.0	77.7	56.2
GENERATION GWH	62.1	0.0	0.0	0.0	0.0	0.0	0.0	5.3	1.8	11.0	22.3	17.6	4.1
GUERNSEY													
GLENDO TO GUERNSEY GAIN	15.9	2.2	1.7	1.6	1.1	1.1	1.0	0.6	2.1	-1.2	-0.5	2.3	3.9
TOTAL INFLOW	865.8	2.2	1.7	1.6	1.1	1.1	1.0	51.8	18.3	97.4	305.0	307.0	77.6
NORTH PLATTE REQUIREMENT	1140.0	5.0	0.0	0.0	0.0	0.0	0.0	40.0	145.0	170.0	300.0	305.0	175.0
NORTH PLATTE DELIVERY	850.0	5.0	0.0	0.0	0.0	0.0	0.0	40.0	0.0	100.0	300.0	300.0	105.0
GLENDO IRRIGATION DELIVERY	22.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	7.0	7.1
SEEP, OWN. SPILL, & EVAP	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
EXCESS WATER 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
EXCESS WATER DELVRY/TRANSFER	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
BYPASS	567.9	0.1	0.2	0.3	0.4	0.3	0.3	0.4	0.0	40.4	239.8	241.8	43.9
TURBINE RELEASE	305.7	4.9	0.0	0.0	0.0	0.0	0.0	39.6	0.0	62.6	65.2	65.2	68.2
END OF MONTH CONTENT	6.8	4.0	5.7	7.3	8.4	9.5	10.5	22.3	40.6	35.0	35.0	35.0	0.5
ELEVATION	4396.9	4392.8	4395.5	4397.5	4398.7	4399.8	4400.7	4408.9	4417.8	4415.3	4415.3	4415.3	4381.0
KWH / AF		46.8	45.4	49.0	51.7	53.9	56.0	62.4	72.3	73.6	73.0	73.0	63.8
GENERATION GWH	21.3	0.2	0.0	0.0	0.0	0.0	0.0	2.5	0.0	4.6	4.8	4.8	4.4
GAIN TO STORAGE WATER OWNERSHIP													
INLAND LAKES IN GUER & GLEND	0.0	8.0	19.0	19.0	19.0	19.0	19.0	0.0	0.0	0.0	0.0	0.0	0.0
N.P. GUERNSEY WATER	0.0	0.0	0.0	8.2	16.1	25.4	26.2	26.2	43.9	0.0	0.0	0.0	0.0
N.P. GUERNSEY + INLAND LAKES	0.0	8.0	19.0	27.2	35.1	44.4	45.2	26.2	43.9	0.0	0.0	0.0	0.0
GLENDO OWNERSHIP GAIN	12.3	0.0	0.0	0.0	0.0	0.0	12.3	0.0	0.0	0.0	0.0	0.0	0.0
KENDRICK OWNERSHIP GAIN	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

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OCTOBER 1992 SYSTEM OPERATING PLAN

REASONABLE MINIMUM WATER SUPPLY CONDITION

WATER IN 1000 ACRE FEET * * * * * * * * * * ENERGY IN G W H

	INI-SUM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
STORAGE WATER OWNERSHIP ACCOUNTING													
EVAPORATION NORTH PLATTE	34.1	1.3	0.9	0.5	0.6	0.7	1.6	3.2	5.0	7.9	7.7	3.5	1.2
TOTAL DELIVERY NORTH PLATTE	884.1	6.3	0.9	0.5	0.6	0.7	1.6	43.2	5.0	107.9	307.7	303.5	106.2
NORTH PLATTE STORAGE **	170.8	208.2	245.2	276.9	305.6	338.9	390.8	449.7	593.9	625.4	354.4	75.4	0.5
EVAPORATION KENDRICK	46.0	2.7	1.5	1.0	1.1	1.1	2.5	4.3	5.0	7.4	7.9	6.5	5.0
TOTAL DELIVERY KENDRICK	130.0	2.7	1.5	1.0	1.1	1.1	2.5	4.3	22.0	26.4	27.9	25.5	14.0
KENDRICK GAIN	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
KENDRICK STORAGE (INCL CHYN)	689.3	686.6	685.1	684.1	683.0	681.9	679.3	675.0	653.0	626.7	598.7	573.2	559.2
EVAPORATION GLENDO	20.4	0.9	0.8	0.6	0.5	0.7	1.0	1.4	3.0	2.9	3.5	2.9	2.2
TOTAL DELIVERY GLENDO	42.5	0.9	0.8	0.6	0.5	0.7	1.0	1.4	3.0	5.9	8.5	9.9	9.3
GLENDO GAIN	12.3	0.0	0.0	0.0	0.0	0.0	12.3	0.0	0.0	0.0	0.0	0.0	0.0
GLENDO STORAGE (INCL PP&L)	142.7	141.9	141.1	140.5	139.9	139.3	150.5	149.1	146.2	140.2	131.8	121.8	112.5
COMBINED OWNERSHIP STORAGE	1002.8	1036.7	1071.3	1101.5	1128.6	1160.0	1220.6	1273.9	1393.1	1392.3	1084.9	770.5	672.2
COMBINED PHYSICAL STORAGE	1002.8	1036.7	1071.3	1101.5	1128.6	1160.0	1220.6	1273.9	1393.1	1392.3	1084.9	770.5	672.2

** Includes Alice and Minatare water stored temporarily in the mainstem facilities for later transfer to the Inland Lakes. It does not reflect water currently in Lake Alice and Lake Minatare.

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REASONABLE MAXIMUM WATER SUPPLY CONDITION

WATER IN 1000 ACRE FEET * * * * * * * * * * ENERGY IN G W H

	INI-SUM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
SEMINOE AND KORTES RESERVOIRS													
INFLOW	1689.1	36.8	33.2	27.8	25.6	27.6	58.5	156.9	407.9	583.8	229.5	64.9	36.6
TURBINE RELEASES	987.8	30.7	29.8	30.7	30.7	27.8	60.0	151.3	160.9	155.7	160.9	90.0	59.3
SPILL	133.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	78.0	55.7	0.0	0.0
EVAPORATION SEMINOE	56.6	1.9	1.1	0.7	0.8	0.8	1.8	3.1	4.5	10.2	12.9	10.7	8.1
SEMINOE END OF MONTH CONTENT	439.7	443.9	446.2	442.5	436.7	435.7	432.4	434.8	677.4	1017.3	1017.3	981.5	950.8
ELEVATION	6318.3	6318.7	6318.9	6318.6	6318.0	6317.9	6317.6	6317.8	6337.4	6357.0	6357.0	6355.2	6353.6
KWH / AF		322.8	323.1	323.0	322.6	322.2	322.0	322.0	332.0	348.0	354.0	353.0	352.0
GENERATION GWH	333.6	9.9	9.6	9.9	9.9	9.0	19.3	48.7	53.4	54.2	57.0	31.8	20.9
PATHFINDER RESERVOIR													
GAIN KORTES TO PATHFINDER	208.3	7.1	1.5	1.1	0.0	2.1	8.2	28.3	65.2	52.6	23.8	11.1	7.3
TOTAL INFLOW	1329.8	37.8	31.3	31.8	30.7	29.9	68.2	179.6	226.1	286.3	240.4	101.1	66.6
FREMONT CANYON TURBINE WATER	743.1	7.0	30.0	30.8	30.9	28.0	31.1	102.8	78.9	79.6	108.0	113.1	102.9
SPILL OR BYPASS	27.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.8	0.0
EVAPORATION PATHFINDER	56.7	1.6	1.1	0.6	0.6	0.7	1.5	3.1	5.0	9.0	12.9	11.9	8.7
END OF MONTH CONTENT	281.9	311.1	311.3	311.8	310.9	312.2	347.8	421.5	563.7	761.4	880.8	829.2	784.1
ELEVATION	5798.1	5801.7	5801.7	5801.8	5801.7	5801.8	5805.9	5813.3	5824.9	5837.3	5843.6	5841.0	5838.6
KWH / AF		246.6	252.1	252.1	252.1	252.1	254.0	254.8	260.0	271.7	279.1	279.2	279.0
GENERATION FREMONT CANYON	198.6	1.7	7.6	7.8	7.8	7.1	7.9	26.2	20.5	21.6	30.1	31.6	28.7
ALCOVA RESERVOIR													
INFLOW	770.9	7.0	30.0	30.8	30.9	28.0	31.1	102.8	78.9	79.6	108.0	140.9	102.9
RELEASE TO CASPER CANAL	64.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0	15.0	16.0	15.0	5.0
TURBINE RELEASE	698.7	30.7	29.8	30.7	30.7	27.8	30.7	78.7	64.9	63.2	90.3	124.5	96.7
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
EVAPORATION ALCOVA	9.1	0.6	0.2	0.1	0.2	0.2	0.4	0.7	1.0	1.4	1.7	1.4	1.2
END OF MONTH CONTENT	180.3	156.0	156.0	156.0	156.0	156.0	156.0	179.4	179.4	179.4	179.4	179.4	179.4
ELEVATION	5498.3	5488.0	5488.0	5488.0	5488.0	5488.0	5488.0	5498.0	5498.0	5498.0	5498.0	5498.0	5498.0
KWH / AF		138.0	136.0	136.0	136.0	136.0	136.0	138.0	140.0	140.0	140.0	140.0	140.0
GENERATION GWH	97.1	4.2	4.1	4.2	4.2	3.8	4.2	10.9	9.1	8.9	12.6	17.4	13.5

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REASONABLE MAXIMUM WATER SUPPLY CONDITION

WATER IN 1000 ACRE FEET * * * * * * * * * * ENERGY IN G W H

	INI-SUM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
GLENDO RESERVOIR													
ALCOVA TO GLENDO GAIN	434.0	16.2	15.3	6.9	13.8	14.6	20.0	47.4	191.8	74.7	9.6	8.4	15.3
TOTAL INFLOW	1132.7	46.9	45.1	37.6	44.5	42.4	50.7	126.1	256.7	137.9	99.9	132.9	112.0
TURBINE RELEASE	1006.4	0.0	0.0	0.0	0.0	0.0	12.7	41.9	199.1	161.8	214.7	228.4	147.8
BYPASS OR SPILL	123.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	69.0	54.0	0.0
EVAPORATION AND SEEPAGE	32.4	0.8	0.8	0.7	0.7	0.9	1.7	2.8	5.5	6.8	6.6	3.4	1.7
END OF MONTH CONTENT	94.1	140.2	184.6	221.5	265.3	306.7	343.0	424.4	476.5	445.8	255.4	102.4	65.0
ELEVATION	4578.8	4589.2	4597.2	4602.9	4608.9	4614.1	4618.3	4626.7	4631.5	4628.8	4607.6	4580.9	4570.6
KWH / AF		65.4	75.3	84.2	90.8	96.6	102.0	106.5	111.7	112.5	104.0	78.9	57.8
GENERATION GWH	95.0	0.0	0.0	0.0	0.0	0.0	1.3	4.5	22.2	18.2	22.3	18.0	8.5
GUERNSEY													
GLENDO TO GUERNSEY GAIN	82.6	2.6	2.0	1.7	2.0	1.1	0.2	8.0	27.2	22.7	5.3	1.6	8.2
TOTAL INFLOW	1212.0	2.6	2.0	1.7	2.0	1.1	12.9	49.9	226.3	184.5	289.0	284.0	156.0
NORTH PLATTE REQUIREMENT	990.0	5.0	0.0	0.0	0.0	0.0	0.0	40.0	100.0	110.0	290.0	280.0	165.0
NORTH PLATTE DELIVERY	990.0	5.0	0.0	0.0	0.0	0.0	0.0	40.0	100.0	110.0	290.0	280.0	165.0
GLENDO IRRIGATION DELIVERY	23.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	4.0	4.0	11.0
SEEP, OWN. SPILL, & EVAP	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
EXCESS WATER SPILL	190.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	124.0	66.8	0.0	0.0	0.0
EXCESS WATER DELVRY/TRANSFER	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
BYPASS	835.9	0.1	0.2	0.3	0.4	0.3	0.3	0.4	160.6	116.1	229.2	218.8	109.2
TURBINE RELEASE	369.5	4.9	0.0	0.0	0.0	0.0	0.0	39.6	65.4	62.8	64.8	65.2	66.8
END OF MONTH CONTENT	6.8	4.4	6.4	8.1	10.1	11.2	24.1	34.0	34.3	40.0	35.0	35.0	15.0
ELEVATION	4396.9	4393.5	4396.4	4398.4	4400.4	4401.4	4409.9	4414.8	4415.0	4417.6	4415.3	4415.3	4404.3
KWH / AF		47.2	46.8	50.5	54.2	56.7	63.7	71.4	72.8	73.4	73.5	73.0	69.0
GENERATION GWH	26.6	0.2	0.0	0.0	0.0	0.0	0.0	2.8	4.8	4.6	4.8	4.8	4.6
GAIN TO STORAGE WATER OWNERSHIP													
INLAND LAKES IN GUER & GLEND	0.0	13.7	30.8	30.8	30.8	30.8	30.8	0.0	0.0	0.0	0.0	0.0	0.0
N.P. GUERNSEY WATER	0.0	0.0	0.0	8.3	14.4	14.4	14.4	45.2	45.2	0.0	0.0	0.0	0.0
N.P. GUERNSEY + INLAND LAKES	0.0	13.7	30.8	39.1	45.2	45.2	45.2	45.2	45.2	0.0	0.0	0.0	0.0
GLENDO OWNERSHIP GAIN	48.8	0.0	0.0	0.0	8.1	14.2	19.6	6.9	0.0	0.0	0.0	0.0	0.0
KENDRICK OWNERSHIP GAIN	574.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.7	543.2	0.0	0.0	0.0

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	INI-SUM	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
STORAGE WATER OWNERSHIP ACCOUNTING													
EVAPORATION NORTH PLATTE	67.6	1.3	0.9	0.5	0.6	0.7	1.8	3.9	8.0	13.9	15.6	12.3	8.1
TOTAL DELIVERY NORTH PLATTE	1057.6	6.3	0.9	0.5	0.6	0.7	1.8	43.9	108.0	123.9	305.6	292.3	173.1
NORTH PLATTE STORAGE **	170.8	227.2	278.3	315.3	347.9	378.4	443.9	633.7	1062.1	1062.1	1024.7	818.4	712.7
EVAPORATION KENDRICK	65.6	2.7	1.5	1.0	1.1	1.1	2.5	4.3	5.1	10.7	14.5	11.9	9.2
TOTAL DELIVERY KENDRICK	129.6	2.7	1.5	1.0	1.1	1.1	2.5	4.3	18.1	25.7	30.5	26.9	14.2
KENDRICK GAIN	574.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.7	543.2	0.0	0.0	0.0
KENDRICK STORAGE (INCL CHYN)	689.3	686.6	685.1	684.1	683.0	681.9	679.3	675.0	688.6	1206.1	1175.6	1148.7	1134.4
EVAPORATION GLENDO	21.3	0.9	0.8	0.6	0.5	0.7	1.1	1.5	2.9	2.8	4.0	3.2	2.3
TOTAL DELIVERY GLENDO	44.3	0.9	0.8	0.6	0.5	0.7	1.1	1.5	4.9	4.8	8.0	7.2	13.3
GLENDO GAIN	48.8	0.0	0.0	0.0	8.1	14.2	19.6	6.9	0.0	0.0	0.0	0.0	0.0
GLENDO STORAGE (INCL PP&L)	142.7	141.9	141.1	140.5	148.0	161.5	180.0	185.4	180.5	175.7	167.6	160.4	147.1
COMBINED OWNERSHIP STORAGE	1002.8	1055.6	1104.5	1139.9	1179.0	1221.8	1303.3	1494.1	1931.2	2443.9	2367.9	2127.5	1994.3
COMBINED PHYSICAL STORAGE	1002.8	1055.6	1104.5	1139.9	1179.0	1221.8	1303.3	1494.1	1931.2	2443.8	2367.9	2127.5	1994.2

** Includes Alice and Minatare water stored temporarily in the mainstem facilities for later transfer to the Inland Lakes. It does not reflect water currently in Lake Alice and Lake Minatare.

February through September -- The February water release will average 500 c.f.s. from Seminoe Reservoir. By the end of February, Seminoe Reservoir storage is expected to be about 405,700 acre-feet of water, the lowest end-of-month level for the year. The average March water release will be about 500 c.f.s., and the end-of-March Seminoe Reservoir storage is expected to be 426,400 acre-feet. Water releases through the turbines will average approximately 1,800 c.f.s. and 2,020 c.f.s. in April and May, respectively. The total release of water from the reservoir during the April to September period will be scheduled to provide storage space for the April-July snowmelt runoff and meet downstream requirements and system power demands. With most probable runoff, storage will reach a maximum of 736,200 acre-feet of water by the end of June. Projected carryover storage of about 500,100 acre-feet of water at the end of the water year would be 71 percent of average.

Pathfinder Reservoir

October through January -- At the beginning of the water year, Pathfinder Reservoir storage was 281,900 acre-feet of water or 63 percent of the 1961-1990 average. Fremont Canyon Powerplant water releases will be reduced during October to lower Alcova Reservoir water surface level to 5486.5 $\pm$ 0.5 foot, which is 1.5 feet lower than the normal winter operating level of 5,488 feet. The water surface level of 5486.5 feet (not shown in tables 3A, 3B, and 3C) will be maintained until the end of November to accommodate work on the Casper Canal outlet works. The reservoir will be raised to its normal winter operating level of 5488 $\pm$ 1.0 foot in December. After the Alcova Reservoir drawdown in October, releases from Pathfinder Reservoir will be adjusted to meet required water release from Gray Reef Dam and maintain the desired operating level in Alcova Reservoir. Pathfinder Reservoir storage is projected to be about 314,800 acre-feet of water by the end of January.

February through September -- Pathfinder Reservoir storage will reach a maximum of about 381,900 acre-feet of water by the end of June and be drawn down to a storage content of about 303,900 acre-feet of water by the end of the water year. River gain between Kortes and Pathfinder Dams, including discharge of the Sweetwater River, is estimated at about 84,900 acre-feet of water for the April-July period under most probable runoff conditions.

Fremont Canyon Powerplant water releases in February and March will be scheduled to maintain a 156,000 acre-feet content in Alcova Reservoir. In April, these releases will be coordinated with Alcova water releases to refill Alcova Reservoir to its normal summer operating level of 5498 ± 1 foot.

During April through September, water releases through Fremont Canyon powerplant will be scheduled to meet downstream irrigation deliveries and maintain a storage content of about 179,400 acre-feet (5498 ± 1 foot) in Alcova Reservoir. During June, water releases will average 2,060 c.f.s. In July, August, and September, water release through Fremont Canyon power generating turbines is expected to be at capacity with bypasses of 15,200 acre-feet, 44,000 acre-feet, and 6,200 acre-feet, respectively. These bypasses are necessary to meet the downstream irrigation requirements.

Alcova Reservoir

October through January -- During October, Alcova Reservoir will be drawn down below the normal winter storage content of 156,000 acre-feet to approximately 152,700 acre-feet (not shown in tables 3A, 3B, and 3C) and will be maintained at that content until December 1 when it will be raised to its normal winter content. From October through January, water releases will be maintained at approximately 500 c.f.s. for production of power, maintenance, fishery flows, pollution abatement, and transfer of water to Glendo Reservoir in preparation for meeting downstream irrigation demands during the coming irrigation season.

February through September -- Alcova Reservoir will remain at the winter operating level through March. During April, the reservoir will be refilled to water surface elevation 5,498 feet (179,400 acre-feet). This level will be maintained within ± 1 foot to provide the necessary water surface elevation to make irrigation deliveries to Casper Canal and for recreational purposes. About 74,000 acre-feet of water is scheduled to be delivered during the May-September period to meet Kendrick Project irrigation requirements. The Kendrick Project storage water ownership account is expected to be at 569,000 acre-feet at the end of September, which is 637,100 acre-feet from full. No water will accrue to Kendrick Project storage in water year 1992 under most probable runoff conditions. Water releases from Alcova Reservoir will be re-regulated in Gray Reef Reservoir.

Gray Reef Reservoir

October through January -- The water release from Gray Reef Dam will be maintained at approximately 500 c.f.s during this period. This will result in a winter river level similar to last year. These below-average winter flows are the result of a limited amount of water in the North Platte ownership account available to be moved to Glendo Reservoir. The 30 year average flow below Gray Reef Dam ranges between 810 c.f.s. and 1,100 c.f.s. for the months of October through January.

February through September -- Water releases from Gray Reef Reservoir will average about 500 c.f.s. during February and March and increase to approximately 1,560 c.f.s. in the month of April. The May through August water releases will average approximately 1,715 to 2,480 c.f.s. and will be decreased to approximately 2,030 c.f.s. in September as project irrigation water is moved downstream.

Glendo and Guernsey Reservoirs

October through January -- Carryover storage of 94,100 acre-feet of water in Glendo Reservoir on September 30 was 115 percent of average. With restorage of North Platte Project, water released from Alcova and with North Platte River gains below Alcova Dam estimated to be near normal (34,700 acre-feet), Glendo Reservoir storage will increase to about 247,700 acre-feet of water by the end of January. Guernsey Reservoir contained 6,800 acre-feet of water at the start of water year 1992. This water is to be transferred to the Inland Lakes during the first part of October. Gains to the North Platte River between Glendo and Guernsey Dams will be stored in Guernsey Reservoir during the winter, which will increase storage to 10,000 acre-feet by January 31.

February through September -- Glendo Reservoir storage will increase to about 288,800 acre-feet of water by the end of February. During late March and April, water releases from Glendo Reservoir will be scheduled to refill Guernsey Reservoir. Water releases from Glendo Reservoir during the April through September period will be based upon meeting a full irrigation demand of 1,053,000 acre-feet of water for the North Platte Project and 28,000 acre-feet of water for the Glendo Unit. Maximum Glendo Reservoir storage for the water year will be 447,100 acre-feet of water at the end of May. At this level, it would take approximately 70,385 acre-feet of water to fill the reservoir to the flood pool elevation of 4635.0 ft.

Guernsey Reservoir content will be maintained near 34,000 acre-feet during mid-May through June. Provision is made in the plan for a possible silt run in July. This will require close coordination of Glendo and Guernsey Dams water release schedules as Guernsey Reservoir is drawn down to about 1,000 acre-feet in July and refilled to about 35,000 acre-feet in August. During September, releases will be scheduled to complete Glendo Reservoir drawdown to a content of about 65,000 acre-feet of water and to lower Guernsey Reservoir content to approximately 15,000 acre-feet.

Most Probable Condition Ownerships

At the close of water year 1992, the North Platte Project storage water ownership account is expected to be near 361,000 acre-feet (86 percent of average); the Kendrick Project storage water ownership is expected to be near 596,00 acre-feet (68 percent of average); and the Glendo storage water ownership is expected to be near 133,300 acre-feet (101 percent of average) under most probable runoff conditions.

REASONABLE MINIMUM RUNOFF CONDITION - WATER YEAR 1992

Seminoe Reservoir

October through January -- Water releases for this period under a reasonable minimum runoff condition would be nearly the same as in the most probable condition. Under this condition, runoff into Seminoe Reservoir would be expected to be 87,000 acre-feet of water for the period, which is 12,800 acre-feet less than in the most probable condition. The January 31 reservoir content would be expected to be approximately 400,400 acre-feet of water under these conditions.

February through September -- If the winter inflow into Seminoe Reservoir and the February 1 snowmelt runoff forecast indicate that reasonable minimum conditions exist, then the water release from Seminoe Reservoir for the months of February and March will be set at the minimum of 500 c.f.s. The April through August Seminoe Dam water releases will go from approximately 840 c.f.s. to 1,710 c.f.s. In the months of June and July, it will be necessary to increase the flow to meet irrigation requirements. This will provide increased power production as the water releases are expected to average approximately 1,530 c.f.s. and 1,940 c.f.s., respectively. September water releases will be reduced to approximately 780 c.f.s.. At the end of the water year the reservoir content will be 278,800 acre-feet (39 percent of average). The maximum end-of-month content under these

conditions will be approximately 496,500 acre-feet of water at the end of June.

Pathfinder Reservoir

October through January -- Water releases for this period under a reasonable minimum runoff condition would be the same as in the most probable condition. Under this condition, gains to the river between Kortes and Pathfinder Dams would be expected to be 14,900 acre-feet of water for the period.

February through September -- Pathfinder Reservoir storage will reach a maximum of about 322,100 acre-feet of water by the end of March. Starting in April, the reservoir will be drawn down to a storage content of about 148,500 acre-feet of water by the end of the water year. River gains between Kortes and Pathfinder Dams, including the discharge of the Sweetwater River, are estimated at about 37,400 acre-feet for the April-July period under reasonable minimum runoff conditions.

Release of water through Fremont Canyon Powerplant in February and March will be scheduled to maintain 156,000 acre-feet of water in Alcova Reservoir. In April, these releases will be coordinated with releases from Alcova Dam to refill Alcova Reservoir to its normal summer operating level of 5498 ft $\pm$ 1 foot (179,400 acre-feet) by the end of April.

During April through September, release of water through Fremont Canyon Powerplant will be scheduled to meet downstream irrigation deliveries and maintain a storage content of 179,400 acre-feet of water in Alcova Reservoir. Summer releases will range from 1,950 c.f.s. during April to 840 c.f.s. during September. Fremont Canyon turbine releases will be at or near capacity at times with bypasses of 24,800 acre-feet in July and 53,800 acre-feet in August to meet irrigation demands. If reasonable minimum runoff develops, the reservoir content at the end of the water year will be about 148,500 acre-feet of water or 33 percent of average.

Alcova Reservoir

October through January -- Operation of Alcova Reservoir would be the same as under the most probable condition.

February through September -- Alcova Reservoir will remain at the normal winter operating level through March. During April, the reservoir will be refilled to water surface elevation 5498 feet (179,400 acre-feet). This level will be maintained within $\pm$ 1 foot to provide the necessary head for

making irrigation deliveries to Casper Canal and for recreational purposes. About 84,000 acre-feet of water is scheduled to be delivered during the May-September period to meet Kendrick Project irrigation requirements. Kendrick Project water in storage is expected to be 559,200 acre-feet at the end of September with reasonable minimum runoff conditions, which is 646,900 acre-feet from full. No gain to Kendrick Project storage is anticipated in water year 1992 under reasonable minimum runoff conditions.

Gray Reef Reservoir

October through January -- Operation of Gray Reef Reservoir would be the same as under the most probable condition.

February through September -- Water releases from Gray Reef Dam will average about 500 c.f.s. during February and March and increase to approximately 1,540 c.f.s. in April. The highest flows from Gray Reef Dam would occur during August at approximately 2,415 c.f.s. The Gray Reef water release for the remainder of the water year would be approximately 1,470 c.f.s., 1,540 c.f.s., 2,010 c.f.s., and 660 c.f.s. respectively for the months of May, June, July, and September. These predicted flows could be redistributed if the irrigators adjust their use of water to conserve water for irrigation in August and September.

Glendo and Guernsey Reservoirs

October through January -- Glendo Reservoir content will increase from the carryover storage of 94,100 acre-feet of water to a January 31 content of 248,600 acre-feet. Guernsey Reservoir contained 6,800 acre-feet of water at the start of water year 1992. This water will be transferred to the Inland Lakes during the first part of October. Under the reasonable minimum runoff conditions, the gains to the river between Glendo and Guernsey Dams will be stored during the winter, which will increase the Guernsey Reservoir content to 8,400 acre-feet of water by January 31.

February through September -- Glendo Reservoir storage will increase to about 284,100 acre-feet of water by the end of February. During late March and April, water releases from Glendo Reservoir will be scheduled to refill Guernsey Reservoir. The maximum storage for Glendo Reservoir end-of-month during the water year will be 460,300 acre-feet at the end of May. At this level, it would take approximately 57,185 acre-feet of water to fill the reservoir to the flood pool elevation of 4635.0 ft.

The operation of Glendo and Guernsey Reservoirs will be based upon making essentially full irrigation deliveries to most of the Glendo Unit but not to the North Platte Project. The Glendo Unit storage ownership account will only accrue 12,300 acre-feet of water under these conditions. North Platte Project irrigation deliveries will be limited to 850,000 acre-feet of water, which is 290,000 acre-feet below the irrigation demand. North Platte Project water in storage will be totally depleted well before the end of irrigation season, leaving only the natural flow to be delivered unless extreme conservation measures are taken by the irrigators as was done in water year 1991. The total combined storage of water in the North Platte River reservoirs in Wyoming would be approximately 391,100 acre-feet less by the end of the water year under reasonable minimum water supply conditions than under the most probable conditions.

Guernsey Reservoir content will be maintained near 35,000 acre-feet of water during mid-April through June. Provisions are made in the plan for a possible silt run in July, which will require close coordination of Glendo and Guernsey Dam water release schedules as Guernsey Reservoir is drawn down to about 1,000 acre-feet of water in July and refilled in August. During September, the water release will be scheduled to complete Glendo drawdown to a content of about 65,000 acre-feet and to lower Guernsey Reservoir to 500 acre-feet. This is done because under this scenario, North Platte Project storage water is essentially depleted and there is no water remaining at the end of the year for later transfer to the Inland Lakes.

Reasonable Minimum Condition Ownerships

The North Platte Project storage water ownership is expected to be near zero at the close of the water year compared to 361,000 acre-feet of water in the most probable runoff conditions. The Kendrick Project storage water ownership is expected to be near 559,200 acre-feet (64 percent of average), and the Glendo storage water ownership is expected to be near 112,500 acre-feet (85 percent of average) at the close of water year 1992 under the reasonable minimum runoff conditions.

REASONABLE MAXIMUM RUNOFF CONDITION - WATER YEAR 1992

Seminoe Reservoir

October through January -- Water releases for this period under a reasonable maximum runoff condition would be nearly the same as in the most probable condition. Although inflows to Seminoe Reservoir would be higher under these conditions, no change in winter operations would be made until it was evident that the inflow quantities being experienced were showing a trend towards the reasonable maximum runoff for the water year. October through January inflow under this condition will be 123,400 acre-feet of water, which is 23,600 acre-feet more than the most probable runoff condition. The January 31 reservoir content would approximate 436,700 acre-feet of water under these conditions.

February through September -- If the winter inflows to Seminoe Reservoir and the February 1 and March 1 snowmelt runoff forecasts indicate that reasonable maximum conditions exist, then the water release from Seminoe Reservoir for the month of March will be set at an average of 975 c.f.s. and increased to an average of 2,450 c.f.s. for April. Water releases through the powerplant in June and July will be at capacity with 78,000 acre-feet and 55,700 acre-feet of water bypassed, respectively. Inflow to the reservoir for the April through July period will be 1,378,100 acre-feet of water, which is 603,500 acre-feet more than the most probable runoff condition. The high inflows would make it necessary to bypass the powerplant with some water during June and July when the reservoir is filled to capacity and spilling or when bypass releases are being made to minimize a spill. This plan of operation would result in an end-of-year carryover storage of 950,800 acre-feet of water, which would be 134 percent of the 1961-1990 average.

Pathfinder Reservoir

October through January -- Water releases for this period under a reasonable maximum runoff condition would be the same as in the most probable condition. Under this condition, gains between Kortes and Pathfinder Dams would be expected to be 9,700 acre-feet of water for the period, which is 3,500 acre-feet less than in the most probable condition. This is based on the statistical analysis of 53 years of historic data which indicates that for this watershed the years of highest April-July runoff also have the lowest October through January runoff.

February through September -- Pathfinder Reservoir would fill to a quantity of 880,800 acre-feet of water in July. A bypass release of 27,800 acre-feet of water is planned at Pathfinder Dam in August to meet downstream demands. If a flood event should occur which would require evacuating water from Pathfinder, the maximum combined releases through Pathfinder Dam and Fremont Canyon Powerplant would be regulated in the 5,000 to 6,000 c.f.s. range to minimize flood flows through the city of Casper.

Water releases from Fremont Canyon Powerplant will range from 500 c.f.s. in February and March to near 1,840 c.f.s. in August. The Pathfinder Reservoir end-of-year storage content is projected to be about 784,100 acre-feet of water, which will be 176 percent of average.

Alcova Reservoir

October through January -- Operation of Alcova Reservoir would be the same as under the most probable condition.

February through September -- Alcova Reservoir will remain at the winter operating level through March. During April, the reservoir will be refilled to water surface elevation 5498 feet (179,400 acre-feet). This level will be maintained within $\pm$ 1 foot to provide the necessary head for making irrigation deliveries to Casper Canal and for recreational purposes. Water delivered through the Casper Canal to the Kendrick Project for irrigation is estimated to be 64,000 acre-feet for the irrigation season.

Gray Reef Reservoir

October through January -- Operation of Gray Reef Reservoir would be the same as under the most probable condition.

February through September -- Water releases are expected to range from 500 c.f.s. in February to 2,025 c.f.s. in August. A reduction in water release will occur in September to 1,625 c.f.s.

Glendo and Guernsey Reservoirs

October through January -- Glendo Reservoir content is expected to increase from the starting content of 94,100 acre-feet of water to an end of January content of 265,300 acre-feet. Guernsey Reservoir contained 6,800 acre-feet of water at the start of water year 1992. This water will be transferred to the Inland Lakes during the first part of October. Under the reasonable maximum runoff conditions, the gains to the river between Glendo and Guernsey Dams will

be stored during the winter, which will increase the Guernsey Reservoir content to 10,100 acre-feet of water by January 31.

February through September -- With reasonable maximum runoff, Glendo Reservoir content will reach a maximum of 476,500 acre-feet of water in May. In the case of an extreme runoff event, the use of the flood pool would be dictated by the pattern and magnitude of flow conditions that develop below Guernsey Reservoir. However, the use of the Glendo flood pool is restricted to regulating unforecasted rainfall floods. The planned use of the flood pool for regulation of the anticipated snowmelt runoff is not permitted. The operating plan shown assumes no downstream flow restrictions and normal irrigation deliveries. Glendo Reservoir storage is projected to decrease to about 221,100 acre-feet by the end of July and will be near 65,000 acre-feet by the end of September. This end-of-year Glendo Reservoir storage would be 79 percent of average and the total system storage of 1,994,300 acre-feet (excluding about 6,100 acre-feet of storage in Kortes and Gray Reef reservoirs) would be 140 percent of average for the major reservoirs on the North Platte River.

Guernsey Reservoir content will be maintained between 34,000 and 40,000 acre-feet of water during mid-April through June. Provision is made in the plan for a possible silt run in July, which will require close coordination of Glendo and Guernsey Dams water release schedules as Guernsey Reservoir is drawn down to about 1,000 acre-feet in July and refilled in August. During September, water release will be scheduled to complete Glendo drawdown to about 65,000 acre-feet and to lower Guernsey Reservoir to approximately 15,000 acre-feet.

Reasonable Maximum Condition Ownerships

All storage water ownerships in the North Platte River system will fill during the water year, except for the Glendo storage water ownership which is limited in the amount of water which it may accrue in any given year. About 190,800 acre-feet of water, which is excess to the North Platte System ownerships and deliveries, will be spilled if the reasonable maximum runoff develops in the pattern that was assumed. Irrigation deliveries of 990,000 acre-feet of water are projected for the North Platte River Project during April through September and irrigation deliveries of 23,000 acre-feet are projected for the Glendo Unit.

GLOSSARY

Acre-Foot - A measure of volume of water equal to an area of 1 acre covered with water 1 foot deep. (43,560 cubic feet)

Basin - The watershed from which overland runoff flows into the North Platte River.

Bypass - That amount of water released from a reservoir other than through the powerplant for those reservoirs which have a powerplant connected to them.

Cubic foot per second (c.f.s) - The rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute. The volume of water represented by a flow of 1 cubic foot per second for 24 hours is equivalent to 86,400 cubic feet, approximately 1.983 acre-feet, or 646,272 gallons.

Evaporation pool - A volume of water set a side in the accounting process from which reservoir evaporation is subtracted as it occurs. (Used in Glendo storage accounting).

Flood pool - A physical space in the reservoir which is to be occupied only by water from flood events. In Glendo Reservoir the volume between reservoir elevations 4635.0 feet and 4653.0 feet is reserved exclusively for flood control.

Gains - Water which enters a river in a defined reach from a source other than an upstream release. When flow released into a reach is greater than the riverflow exiting the lower end of the reach the net gain is negative (loss of water in the reach).

Head - The difference in elevation between the reservoir water surface and the power generating turbines at a powerplant which is connected to a reservoir.

Inflow - As used in this report is any water which enters a reservoir irrespective of whether it originated in the reach or was released from an upstream storage reservoir.

Inland Lakes - A series of four off-stream storage reservoirs on the Interstate Canal system in Nebraska which are used to store and re-release irrigation water. (Lake Alice, Lake Minatare, Little Lake Alice, and Lake Winters Creek)

Natural flow - Riverflow which has originated from a source other than reservoir storage.

Power pool - That space in a reservoir which must be full in order to efficiently generate electrical power through an associated turbine generator.

Precipitation - A deposit on the earth of hail, mist, rain, sleet, or snow.

Runoff - That part of precipitation on the Basin which appears as flow in the North Platte River.

Silt Run - The name given to the practice of flushing silt from Guernsey Reservoir into the North Platte River downstream where the silt laden water is diverted by irrigators. The silt tends to settle in the slower moving water of canals and laterals helping to seal the wetted perimeter and reduce seepage losses.

System - As used in the report the System includes all storage and power generating facilities on the mainstem of the North Platte River in Wyoming and also the four Nebraska reservoirs referred to as the Inland Lakes.

APPENDIX A - TABLES

APPENDIX B - EXHIBITS

GRAY REEF RESERVOIR
ALCOVA RESERVOIR
PATHFINDER RESERVOIR
KORTES RESERVOIR
SEMINOE RESERVOIR
CASPER-ALCOVA I.D.
KENDRICK PROJECT
Proposed Deer Creek Reservoir
GLENDO RESERVOIR
GUERNSEY RESERVOIR
WHALEN DIVERSION DAM
TRI-STATE DAM
PATHFINDER I.D.
N.P. PROJECT
LAKE ALICE
LITTLE LAKE ALICE
LAKE WINTERS CREEK
LAKE MINATARE
NORTHPORT I.D.
N.P. PROJECT
GOSHEN I.D.
N.P. PROJECT
GERING-FT. LARAMIE I.D.
N.P. PROJECT
Proposed Teeters Reservoir
Corn Creek Project
N.
WYOMING
NEBRASKA
COLORADO
CASPER
DOUGLAS
LARAMIE
WHEATLAND
TORRINGTON
LINGLE
HARRISBURG
BRIDGEPORT
OSHKOSH
WALDEN
KIMBALL CO.
SCOTTS BLUFF CO.
BANNER CO.
GARDEN CO.
MORRILL CO.
CHEYENNE CO.
GOSHEN CO.
LARAMIE CO.
PLATTE CO.
ALBANY CO.
CONVERSE CO.
NATRONA CO.
CARBON CO.
FREMONT CO.
SWEETWATER CO.
SIOUX CO.
BOX BUTTE CO.
NIOBRARA CO.
JACKSON CO.
NORTH PLATTE RIVER
PLATTE RIVER
SWEETWATER RIVER
MEDICINE BOW RIVER
LARAMIE RIVER
CHUGWATER
WHEATLAND RESERVOIR
LAKE CAMPBELL
LAKE HATTIE
HOWE SPGS.
HORSE CR.
PUMPKIN CR.
LAWRENCE FORK
BOX CREEK
CONTINENTAL
ENCAMPMENT
SARATOGA
GRAY REEF RIVER GAGE
SWEETWATER RIVER GAGE
KORTES RIVER GAGE
MEDICINE BOW RIVER GAGE
SINCLAIR RIVER GAGE
ORIN JUNCTION RIVER GAGE
GLENDO RIVER GAGE
WHALEN RIVER GAGE
GUERNSEY RIVER GAGE
GUERNSEY POWERPLANT
FT. LARAMIE CANAL GAGE M.R. 6.8
INTERSTATE CANAL GAGE M.R. 2.7
STATE LINE RIVER GAGE
PASSING TRI-STATE DAM RIVER GAGE
SEMINOE RESERVOIR
KORTES RESERVOIR
GLENDO RESERVOIR
GUERNSEY RESERVOIR
WHEATLAND RESERVOIR
LAKE CAMPBELL
LAKE HATTIE
LAKE ALICE
LITTLE LAKE ALICE
LAKE WINTERS CREEK
LAKE MINATARE

SPECIAL MASTER'S NATURAL SECTIONS OF THE RIVER BASIN

1. NORTH PARK, COLORADO
2. COLO.-WY. LINE TO PATHFINDER DAM
3. PATHFINDER DAM TO WHALEN, WY.
4. WHALEN, WY. TO THE TRI-STATE DAM IN NEBR.
5. TRI-STATE DAM TO KINGSLEY RESERVOIR

Seminoe Reservoir (Kendrick Project)
Wyoming Permit No. 4552 R for 1,026,360 a-f Date 12-1-1931
Current Capacity: 1,017,273 a-f

Kortes Reservoir (Pick-Sloan Missouri Basin Program)
Wyoming Permit No. 5580 R for 4,640 a-f Date 9-11-1933
Current capacity: 4,739 a-f

Pathfinder Reservoir (North Platte Project)
Wyoming Permit No. 609 R for 1,070,000 a-f Date 12-6-1904
Current capacity: 1,016,507 a-f

Alcova Reservoir (Kendrick Project)
Wyoming Permit No. 4630 R for 184,295 a-f Date 4-25-1936
Current capacity: 184,405 a-f

Gray Reef Reservoir (Pick-Sloan Missouri Basin Program)
Wyoming Permit No. 6489 R Date 8-12-1959
Current capacity: 1,800 a-f

Glendo Reservoir (Pick-Sloan Missouri Basin Program)
Wyoming Permit No. 5998 R for 800,000 a-f Date 8-30-1951
Current capacity: 789,402 a-f

Guernsey Reservoir (North Platte Project)
Wyoming Permit No. 3905 R for 71,040 a-f Date 4-20-1923
Current capacity: 45,612 a-f

Lake Alice (North Platte Project)
Current capacity: 11,015 a-f

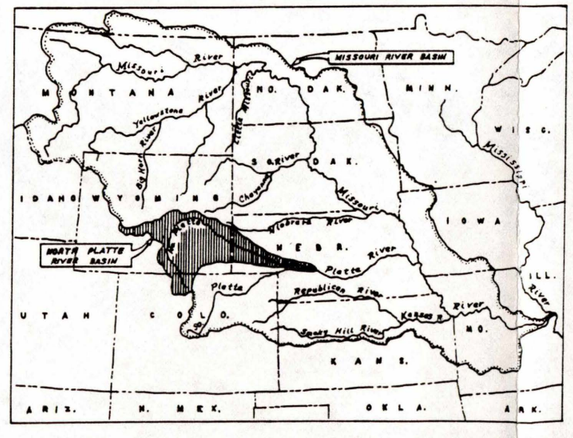
Little Lake Alice (North Platte Project)

Lake Winters Creek (North Platte Project)
Current capacity: 2,964 a-f

Lake Minatare (North Platte Project)
Current capacity: 60,776 a-f

REFERENCE DRAWINGS

NORTH PLATTE RIVER AREA IRRIGATION.....20-703-5198



LEGEND

IRRIGATED LANDS

10 0 10 20 30 40
SCALE OF MILES

5-23-88	D.W.	ADDED SPEC. MASTER'S NUMBERS & PROPOSED DEER CREEK RES. & CORN CREEK PROJECT
703		

ALWAYS THINK SAFETY

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

NORTH PLATTE RIVER BASIN

DESIGNED _____ FIELD APPROVAL _____
DRAWN C.L.D. TECHNICAL APPROVAL _____
CHECKED _____ APPROVED _____

CASPER, WYOMING MARCH 31 1987 | 20-703-5199