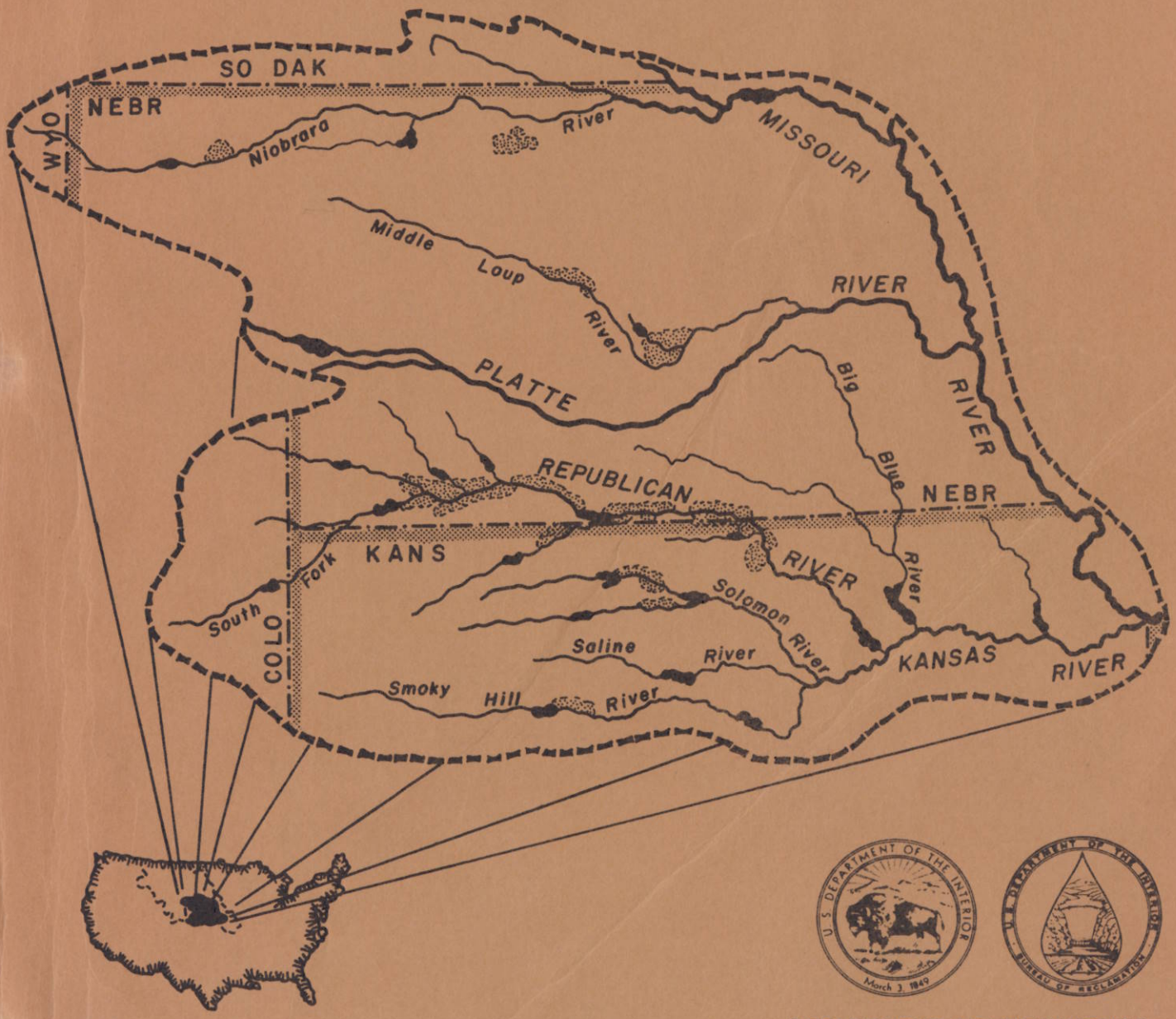
ANNUAL OPERATING PLAN

NIOBRARA, LOWER PLATTE, AND KANSAS RIVER BASINS

CALENDAR YEARS – 1981–1982



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Department of the Interior

BUREAU OF RECLAMATION

Lower Missouri Region • Denver, Colorado

ANNUAL OPERATING PLAN

NIOBRARA LOWER PLATTE AND KANSAS RIVER BASINS

CALENDAR YEAR OPERATIONS-1981

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SYNOPSIS

General

This is the twenty-ninth consecutive year that an Annual Operating Plan (AOP) has been prepared for the federally owned dams and reservoirs serving an irrigation function in the Niobrara, Lower Platte, and Kansas River Basins. There are 15 of these dams and reservoirs in Colorado, Nebraska, and Kansas. These reservoirs, together with 10 diversion dams, 10 pumping plants, and 22 canal systems, serve approximately 271,000 acres of project lands in Nebraska and Kansas. In addition to irrigation, municipal, and industrial water, these features serve flood control, recreation, and fish and wildlife purposes. A map in the appendix of this report shows the location of these features. The reservoirs in the Niobrara and Lower Platte River Basins are operated by either irrigation or reclamation districts, and the reservoirs in the Kansas River Basin are operated by either the Bureau of Reclamation 1/ (Bureau) or the Corps of Engineers. The diversion dams, pumping plants, and canal systems are operated by either irrigation or reclamation districts.

A Programmable Master-Station Supervisory Control System is being used to assist in operational management of all eleven dams under the Bureau's jurisdiction that are located in the Kansas River Basin.

The "Headlines 81" following this Synopsis is indicative of the awareness of local people of natural resource development and conservation in the Niobrara, Lower Platte, and Kansas River Basins.

1981 Summary

Climatic Conditions

The total precipitation over the operating area during 1981 ranged from 87 to 157 percent of normal. Only Box Butte, Webster, and Cedar Bluff Reservoirs received below-normal rainfall. After a late freeze in May, the temperatures were generally normal to slightly below normal during the growing season.

Storage Reservoirs

1. Conservation Operations. The 1981 inflows were below the dry-year forecast at Sherman, Bonny, Enders, Kirwin, Webster and Cedar Bluff Reservoirs and Keith Sebelius Lake. 2/ Box Butte Reservoir and Harry Strunk, Hugh Butler, Waconda, and Harlan County Lakes had inflows between the dry- and normal-year forecasts. Lovewell Reservoir had inflows from White Rock Creek near the normal-year forecast. Swanson Lake and Merritt Reservoir had inflows between normal- and wet-year forecasts. The following table shows a comparison of 1980 and 1981 carryover storage for all reservoirs in the Niobrara, Lower Platte, and Kansas River Basin.

1/ On May 20, 1981, the Secretary of the Interior approved changing from Water and Power Resources Service back to Bureau of Reclamation.

2/ Public Law No. 96-607, dated December 28, 1980, provided for changing the name of Norton Reservoir to Keith Sebelius Lake.

Reservoir	RESERVOIR DATA SEPTEMBER 30 1980 Elevation (feet)	1980 Storage (A.F.)	1981 Elevation (feet)	1981 Storage (A.F.)	Top of Conserv. Capacity Elevation (feet)	Top of Conserv. Capacity Storage (A.F.)
Box Butte	3981.40	4,428	3978.31	2,954	4007.00	31,060
Merritt	2934.20	45,615	2938.70	55,307	2946.00	74,486
Sherman	2154.60	49,191	2157.10	55,168	2162.30	69,076
Bonny	3670.15	37,675	3668.78	35,094	3672.00	41,340
Swanson	2735.94	53,320	2745.12	88,450	2752.00	120,160
Enders	3086.72	13,085	3091.34	17,066	3112.30	44,480
Hugh Butler	2568.33	19,988	2573.17	25,503	2581.80	37,776
Harry Strunk	2346.51	12,192	2365.86	36,700	2366.10	37,141
Keith Sebelius	2276.96	3,539	2276.16	3,194	2304.30	35,935
Harlan County	1935.77	200,315	1938.99	233,332	1946.00	319,787
Lovewell	1578.89	31,630	1581.25	37,800	1582.60	41,690
Kirwin	1695.96	8,782	1696.68	9,465	1729.25	99,435
Webster	1864.44	9,998	1866.19	12,277	1892.45	77,370
Waconda	1451.83	196,973	1453.48	215,694	1455.60	241,460
Cedar Bluff	2102.63	25,374	2100.83	22,291	2144.00	185,090

2. Flood Control Operations. There were minor flood control benefits accrued by operation of Kansas River Projects dams during 1981. The accumulative total of flood control benefits for the years 1951 through 1981 by the facilities included in this report total $43,743,000. (See table 5.) No benefits have been accrued to date by operation of Box Butte, Merritt, or Sherman Dams.

Water Service

There were 355,726 acre-feet of water diverted to irrigate 223,345 acres of project lands in 13 irrigation districts. (See tables 3 and 6.) The project water supply was inadequate for 128,664 acres of the total project lands. This includes lands in Mirage Flats, Farwell, Sargent, Frenchman Valley, H & RW, Almena, Kirwin, Webster, and Cedar Bluff Irrigation Districts. No project water was available for delivery to Almena, Kirwin, Webster, and Cedar Bluff Irrigation Districts. The project water supplies for the other units mentioned in this report were adequate in 1981.

The water requirements of three municipalities, one rural water district, two industrial companies, and a federal fish hatchery were furnished from storage releases or natural flows.

Under a long-term contract with the Bureau for use of the Arcadia Diversion Dam, the Middle Loup Public Power and Irrigation District diverted 27,700 acre-feet to irrigate 14,506 acres of non-project lands. These diversions were made under natural flow water rights granted by the State of Nebraska.

Irrigation Production

The 1981 crop yields from lands receiving project water were higher than 1980 for all units except Mirage Flats and Ainsworth. Corn, the principal crop, increased from an average of 104 bushels per acre to about 131 bushels per acre. Unit prices for all commodities were lower than those in 1980. The average crop

value per acre decreased from $318.83 to $300.37 in 1981. Figure 1 is a graph which compares corn prices with the gross crop value per acre.

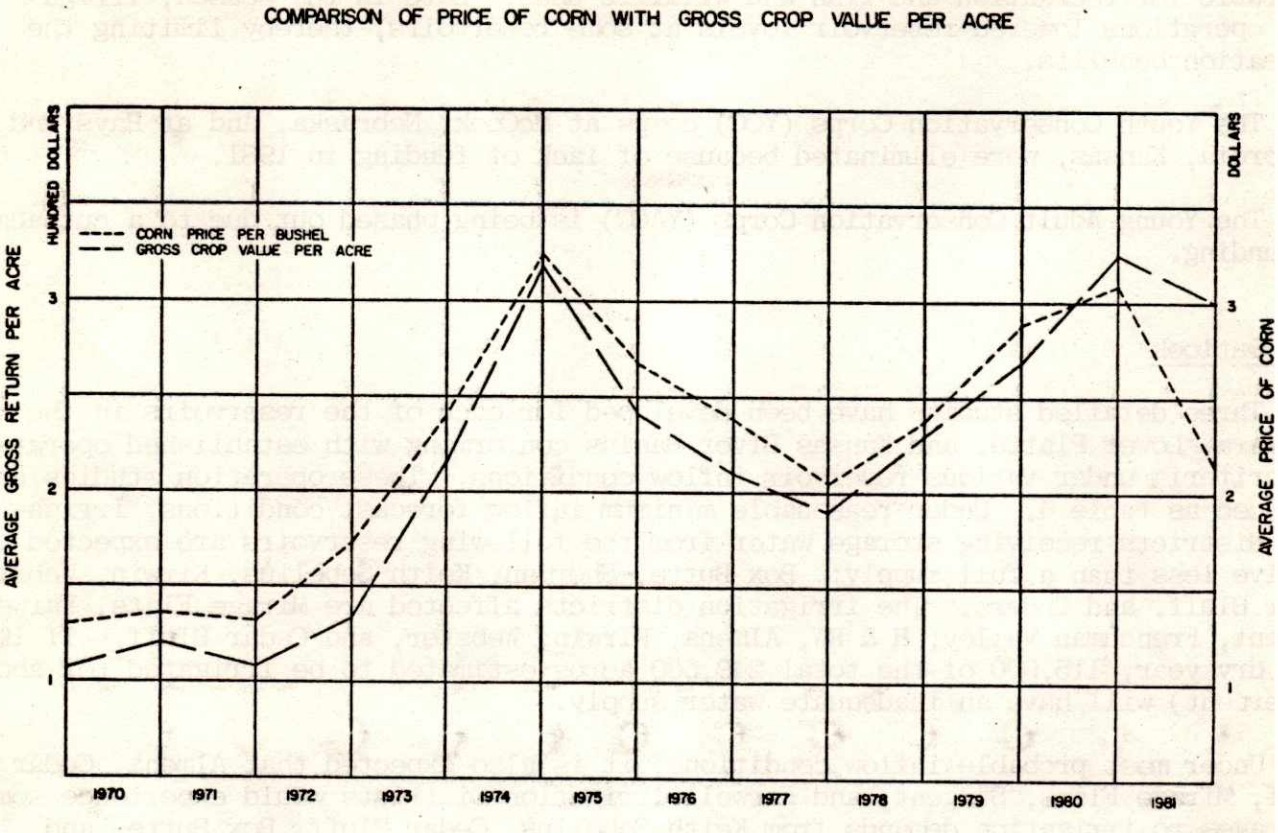


Figure 1

The following table shows a comparison of corn yields for each irrigation district.

Irrigation District	Corn Yield (bu./acre) 1980	1981
Ainsworth	114	114
Mirage Flats	118	105
Sargent	80	116
Farwell	91	127
Frenchman Valley	127	152
H & RW	106	152
Frenchman-Cambridge	112	138
Bostwick in Nebraska	102	137
Kansas-Bostwick	95	135
Kirwin	92	*
Webster	100	*
Cedar Bluff	*	*
Almena	112	*
Average of Districts reporting	104	131

*No project water supplied; not included in averages.

Fish and Wildlife and Recreation Benefits

During the early part of the 1981 season, normal reservoir operations were favorable for recreation and fish and wildlife uses. Late in the season, irrigation operations lowered reservoir levels at some reservoirs, thereby limiting the recreation benefits.

The Youth Conservation Corps (YCC) camps at McCook, Nebraska, and at Hays and Concordia, Kansas, were eliminated because of lack of funding in 1981.

The Young Adult Conservation Corps (YACC) is being phased out due to a cutback in funding.

1982 Outlook

Three detailed studies have been developed for each of the reservoirs in the Niobrara, Lower Platte, and Kansas River Basins conforming with established operating criteria under various reservoir inflow conditions. These operation studies are included as table 4. Under reasonable minimum inflow forecast conditions, irrigation districts receiving storage water from the following reservoirs are expected to receive less than a full supply: Box Butte, Sherman, Keith Sebelius, Kirwin, Webster, Cedar Bluff, and Enders. The irrigation districts affected are Mirage Flats, Farwell, Sargent, Frenchman Valley, H & RW, Almena, Kirwin, Webster, and Cedar Bluff. If 1982 is a dry year, 115,900 of the total 249,560 acres estimated to be irrigated (or about 46 percent) will have an inadequate water supply.

Under most probable inflow conditions, it is also expected that Almena, Cedar Bluff, Mirage Flats, Sargent, and Farwell Irrigation Districts would experience some shortages to irrigation demands from Keith Sebelius, Cedar Bluff, Box Butte, and Sherman Reservoirs, respectively. Irrigators in several districts (Mirage Flats, Kirwin, Webster, Almena, Frenchman Valley, and H & RW) plan to use water from private wells to supplement the project water supply. The industrial, municipal, and rural water district water supply requirements will be met under all three inflow forecast conditions for all units except Cedar Bluff and Almena. Under a share-shortage procedure adopted for the current extremely low storage conditions at Cedar Bluff, the fish hatchery and City of Russell will experience shortages in dry- and normal-year inflow forecast conditions. Under dry-year conditions, the City of Norton will not receive a full water supply.

During 1982, under all inflow forecast conditions, storage water will be in excess of project needs at Bonny Reservoir and Waconda Lake.

Even under reasonable minimum inflow conditions, the conservation pools at Merritt, Sherman, and Lovewell Reservoirs and Harry Strunk Lake will fill during 1982. With most probable inflow conditions, Lovewell Reservoir and Swanson and Harlan County Lakes will also fill.

Even with low reservoir levels and inadequate water supplies for some project lands, the recommendations of various State agencies will be considered. As in the past, irrigation and reclamation districts will advise State agencies regarding aquatic weed control and canal operations. The Bureau will continue to operate the reservoirs and other facilities under its jurisdiction in the best interests of all project functions and for the optimum public benefit.

HEADLINES 81

Four Diversion Plans Battle for Platte Water

OMAHA, Neb. (AP) — Unappropriated Platte River water is creating a battle among water projects, according to a federal planning official.

Regional Planning Officer Roger Weidelman of the Bureau of Reclamation in Denver told the Omaha World-Herald that four diversion proposals in Nebraska and a number of projects in Colorado and Wyoming are competing for Platte water rights.

Moisture at Area Lakes Above Yearly Average

Seven Reservoirs Look Good

Rainfall Sufficient for Area

Water Competition Expected to Intensify

Lake Attendance Varies in Area

Water Transfer Wildlife Impact 'Toss Up'

McCOOK DAILY GAZETTE

Two Inches in McCook

52 mph Winds Whip 2-Inch Snow

Concerning Enders Dam

Argument on Testimony Opens Water Hearing

Price Wars Predicted Over Water Supplies

Stream-Flow Hearings May Bring New Laws

Planned Burn At Butler Lake Set Wednesday

New Study Challenges Platte River Diversion

Rain Puts Planting At a Critical Stage

Water Major Problem Facing '81 Legislature

Water Bill Goal: Save Some Flow for Public

Irrigation District Requests Diversion of S. Platte Water

Watt Gives Nod To Sale of Water

Rain, Tornadoes, Hail Blast Plains

Engineering Report Asked

Water Transfer Studied

New Camping Facilities Added at Strunk Lake

America's Highest Court Will Hear Area Water Case

Farmers Fear Irrigating Upstream From Enders Might Deplete Flow

Moisture Surpasses Normal Yearly Level

Water Diversion Hearing in June

Flow to Enders Reservoir Slows

North Loup, Harlan County

Cuts to Slow Water Projects

By Mary Kay Quinlan

March Moisture Exceeds Normal

YCC Program Eliminated Here

'Bureau' Gets Name Back

The name of the Water and Power Resources Service was changed back to the Bureau of Reclamation on Wednesday, and the news was well received at the McCook office.

BOR Plans Meeting On Sale of Water

In 40 Years

Aquifer Water Supply Drying Out Says Study

Baseball Hail Falls in Area

Area Reservoir Use Increasing

Moisture Brings Smiles, Some Problems

Small Snowpack in Rockies Not Seen as Irrigation Threat

By Jim Carlton

Trenton Marks Deluge As 6.16 Inches Falls

WPRS Will Move To Grand Island

Purpose of This Report

In addition to describing the operational responsibilities of the Bureau, Corps of Engineers, and irrigation or reclamation districts in the three river basins, this AOP advises water users, cooperating agencies, and other interested groups or persons of the actual operations during 1981 and serves as a guideline for the 1982 operations.

Operational Responsibilities

The Bureau is responsible for irrigation operations at all Federal reservoirs in the Nebraska-Kansas Projects area. The Bureau is also responsible for the operation and maintenance, safety of the structure, and reservoir operations not specifically associated with regulation of the flood control storage at the reservoirs constructed by the Bureau. In addition to irrigation and flood control, these reservoirs provide recreation, fish and wildlife, municipal, and industrial benefits.

By contractual arrangements with the Bureau, the irrigation or reclamation districts are responsible for the operation and maintenance of the canals and irrigation distribution facilities constructed or rehabilitated by the Bureau in the Niobrara, Lower Platte, and Kansas River Basins. In addition, the appropriate irrigation or reclamation districts have the responsibility of operating and maintaining Box Butte, Merritt, and Sherman Reservoirs. The Corps of Engineers operates and maintains Harlan County Dam and Lake. The Bureau operates and maintains eleven dams and reservoirs in the Republican, Solomon, and Smoky Hill River Basins.

The States of Nebraska, Colorado, and Kansas are responsible for the administration and enforcement of the laws of their respective States pertaining to the water rights and priorities of all parties concerned with the use of water.

The Bureau will cooperate with all State agencies and Compact Commissions to ensure that all operations are in compliance with State laws and Compact requirements.

Tables and Exhibits

Records for the facilities reported in this AOP are included as tables and exhibits which are located in the appendix.

Water Supply

For forecasting purposes, values of annual inflows that will be statistically equalled or exceeded 10, 50, and 90 percent of the time were selected from the probability curve to be reasonable maximum (wet year), most probable (normal year), and reasonable minimum (dry year) inflow conditions respectively.

In this report inflow records from 1956 through 1980 were used to update the analysis.

Reservoir Operations

All operations are scheduled for optimum benefits of the various authorized project functions. Monthly, or as often as runoff and weather conditions dictate, the Bureau evaluates the carryover storage and estimated inflow at each reservoir to determine whether excess water is anticipated. If excess inflow is apparent, controlled releases will be made to maximize the downstream benefits, including flood control.

Major Features

The Mirage Flats Project was constructed under the Water Conservation and Utilization Act and includes an irrigation storage reservoir, diversion dam, and canal system. The other features discussed in this report are a part of the Pick-Sloan Missouri Basin Program and include multipurpose reservoirs, diversion dams, pump stations, and canal systems. The 15 storage facilities now in operation are as follows:

Constructed by the Bureau

1. Operated by irrigation or reclamation districts--Box Butte and Merritt Dams in the Niobrara River Basin and Sherman Dam in the Lower Platte River Basin.

2. Operated by the Bureau--Bonny, Trenton, Enders, Red Willow, Medicine Creek, Norton, Lovewell, Kirwin, Webster, Glen Elder and Cedar Bluff Dams in the Kansas River Basin.

Constructed and operated by the Corps of Engineers

1. Harlan County Dam in the Kansas River Basin.

Irrigation Districts

Thirteen irrigation districts and one reclamation district in the Niobrara, Lower Platte, and Kansas River Basins have contracted with the Bureau for water supply and irrigation facilities. The Sargent and Farwell Irrigation Districts have contracted their operation and maintenance responsibilities to the Loup Basin Reclamation District.

The contracted irrigation season for the Mirage Flats Irrigation District is April through September. The contracted irrigation season for Frenchman Valley, H & RW, Frenchman-Cambridge, and Cedar Bluff Irrigation Districts is from May 1 through October 15th. For all other districts the contracted irrigation season is from May 1 through September 30th.

Municipal and Industrial Water

Three municipalities, two oil companies, and one rural water district have executed water service contracts for full or supplemental water supplies.

Fish Hatchery

The Fish and Wildlife Service operates a warm-water fish hatchery below Cedar Bluff Reservoir.

Environmental Considerations

A "Statement of Operational Objectives" for Harlan County Lake sets forth the general operational objectives and the specific reservoir uses that are considered desirable. The operational objectives indicate that fish and wildlife interests will be best served by high reservoir levels with minimum fluctuations and regulation of the outflow in excess of the minimum desired flows. Although the statement recognizes flood control and irrigation as the primary purposes, it indicates that comprehensive operational plans should be developed to permit the maximum integration of the secondary uses.

The above-mentioned objectives are also considered in the operation of all reservoirs in the Kansas River Basin, Merritt and Box Butte Reservoirs in the Niobrara River Basin, and Sherman Reservoir in the Lower Platte River Basin. The regulated outflow will also benefit farmers, ranchers, industries, cities, and other interests below the reservoirs.

Mirage Flats Project in Nebraska

General

The flow of the Niobrara River and Box Butte Reservoir storage provide a water supply for the 11,662-acre Mirage Flats Project. During the 10-year period from 1972 to 1981 the project water supply averaged 16,100 acre-feet, which is about 1.38 acre-foot per acre. This amount is 0.94 acre-foot per acre short of the average diversion requirement of 2.32 acre-feet per acre that was estimated to be necessary for a full water supply in the March 1965 report on the Mirage Flats Project, Nebraska. Records of farm deliveries for several previous years indicate a gradual decline in project water supply. Many irrigators supplement their water supply by private wells.

The Mirage Flats Irrigation District cooperates with the Nebraska Game and Parks Commission by operating the Box Butte Dam outlet works gates and the Dunlap Diversion Dam gates in a manner to avoid sudden large changes in the flows of the Niobrara River.

1981 Summary

The flows of the Niobrara River plus the carryover storage in Box Butte Reservoir were not adequate to provide a full water supply for the project lands. Timely rains in July allowed irrigation releases to be discontinued for four days, which improved the water supply situation, although all the active storage was released. The total precipitation in the Mirage Flats area was 14.02 inches, which is 92 percent of normal. The total inflow (17,176 acre-feet) approached a dry-year forecast.

From June through September, 15,473 acre-feet were diverted to the Mirage Flats Canal for irrigation of 11,154 acres, 96 percent of the service available acreage. The farm deliveries from the project water supply were 7,133 acre-feet (0.64 acre-foot per acre), giving the district a delivery efficiency of 46 percent. Privately owned irrigation wells supplied an additional 0.6 to 0.7 acre-foot per acre. The gross crop value was $2,652,085, which is $1,559,516 less than the 1980 value.

1982 Outlook

The project water supply is expected to be inadequate in 1982 as it has been for the last several years, since there was no carryover storage at the end of last irrigation season and inflow has been at approximately dry-year levels since the end of the 1981 irrigation season. The Mirage Flats Irrigation District will announce to their water users in the spring the amount of water that will be available from storage in Box Butte Reservoir. However, the district plans for the irrigators to continue the use of water from privately owned irrigation wells as a supplemental supply. There are 11,200 acres expected to be irrigated in 1982.

Ainsworth Unit, Sandhills Division in Nebraska

General

Within the Ainsworth Irrigation District, there are 34,539 acres with service available. The project water supply is provided by storage of Snake River flows in Merritt Reservoir. The reservoir is filled each fall after the irrigation season to a level approximately 2 feet below the top of conservation capacity and regulated to maintain this level until the ice clears each spring and is then slowly filled. This operation greatly enhances the spring fish spawn. Although not required by law, releases up to 15 ft^3/s are made into the Snake River below Merritt Dam for fish, wildlife, and recreational purposes.

The basic water supply for the Ainsworth Irrigation District is 63,712 acre-feet. Additional water, if available, can be purchased by the district as a supplemental supply.

1981 Summary

Precipitation, as recorded near Merritt Dam, totaled 24.98 inches of rainfall, which was 143 percent of normal. The water supply was more than adequate to meet the project's irrigation requirement. There were 67,682 acre-feet diverted from Merritt Reservoir into the Ainsworth Canal with 44,362 acre-feet delivered to the farm headgates (delivery efficiency of 66 percent). There were 33,951 acres of land irrigated in 1981, and the gross crop value was $10,170,741, which is $2,200,546 less than the previous year.

The district executed several temporary water service contracts which provided a total of 192 acre-feet of irrigation water from holding ponds located within the district's service area.

1982 Outlook

Merritt Reservoir will be regulated to maintain an elevation 2.0 feet below the top of conservation capacity during the 1981-82 winter months.

Concrete repairs to damaged soil cement on the upstream face of the dam will be completed during 1982. In 1982-83 winter months and future years, the reservoir will be regulated to maintain the level at the newly repaired area to avoid ice damage to the older existing soil cement at lower elevations.

Releases from Merritt Reservoir will be regulated to slowly fill the conservation capacity during the spring months. The water supply is expected to be adequate in 1982 for the irrigation of an estimated 34,000 acres.

Sargent Unit, Middle Loup Division in Nebraska

General

The Sargent Irrigation District has contracted with the Loup Basin Reclamation District for the operation and maintenance of the Milburn Diversion Dam and the

Sargent Canal system which serves 13,363 acres. The water supply is diverted from the Middle Loup River into the Sargent Canal under an appropriated natural flow right from the State of Nebraska. These diversions may exceed the natural flow appropriation of 198 ft^3/s by an exchange of storage from Sherman Reservoir, provided that water is available after all senior appropriations are satisfied, and the excess is not greater than the storage releases from Sherman Reservoir.

1981 Summary

The precipitation over the Sargent Unit (29.42 inches at district headquarters) was 126 percent of normal. The diversions into the Sargent Canal totaled 16,808 acre-feet (6,104 acre-feet were delivered to the farm headgates--delivery efficiency 36 percent). The diversions exceeded the direct flow right for nine days during 1981. There were 13,079 acres irrigated with a gross crop value of $3,412,562, which is $439,852 more than in 1980. The irrigators grow corn as the principal crop (approximately 86 percent of the acreage), creating very high water demands in July and August. The demands cannot be met within canal capacity, so the district has instituted a rationing process through the peak period.

1982 Outlook

The Loup Basin Reclamation District estimates that 13,000 acres in the Sargent Unit will be irrigated in 1982. Under dry-year conditions some shortages could occur. Farwell and Sargent Irrigation Districts have implemented a share-shortage procedure.

Farwell Unit, Middle Loup Division in Nebraska

General

The Loup Basin Reclamation District operates and maintains the Arcadia Diversion Dam, Sherman Feeder Canal, Sherman Dam and Reservoir, and the Farwell Canal system, which serves 50,051 acres of land. Diversions are also made through the Arcadia Diversion Dam to 15,000 acres of non-project lands in the Middle Loup Public Power and Irrigation District under appropriated natural flow water rights.

During the winter months, Sherman Reservoir is normally regulated to 5 feet or more below the top of the conservation capacity to minimize seepage from the reservoir into the groundwater table. Maintenance of the pool below the top of conservation provides time for seeding of drawdown areas. This seeding prevents wind erosion and provides winter food and cover for wildlife and fish with spawning habitat in the spring when these areas are inundated. Each spring, diversions into Sherman Feeder Canal from the Middle Loup River are regulated to fill the conservation capacity of Sherman Reservoir by mid-June. The gradually rising water surface in the spring is desirable for fish spawning.

Whenever the flows in the Middle Loup River at Arcadia, Nebraska, exceed 6,000 ft^3/s, flows will be diverted through Sherman Feeder Canal into Sherman Reservoir. Flood control benefits can be accrued to Sherman Reservoir by such operations.

1981 Summary

The diversions from the Middle Loup River at Arcadia Diversion Dam were 27,700 acre-feet to the Middle Loup Public Power and Irrigation District and 111,578 acre-feet into the Sherman Feeder Canal.

Sherman Feeder Canal diversions into Sherman Reservoir were started on March 27, and the conservation capacity was filled on May 12, 1981. The precipitation at Sherman Dam was 26.01 inches, which is 125 percent of normal. Releases into the Farwell Canals totaled 80,171 acre-feet (38,018 acre-feet were delivered to the farm headgates--delivery efficiency 47 percent). The Farwell Irrigation District reported that 47,652 acres or land were irrigated in 1981. The gross crop value was $13,883,611, which is $472,266 more than in 1980. Sherman Feeder Canal was shut off September 4, 1980.

1982 Outlook

Diversions from the Middle Loup River into the Sherman Feeder Canal are expected to start in the spring for the normal filling of the conservation capacity of Sherman Reservoir prior to the irrigation season.

Under normal- and dry-year inflow conditions, irrigation shortages are expected in 1982. These shortages are attributable to large irrigation requirements for corn production during the months of July and August. Farwell and Sargent Irrigation Districts have implemented a share-shortage policy.

CHAPTER III - REPUBLICAN RIVER BASIN

Armel Unit, Upper Republican Division in Colorado

General

Bonny Reservoir storage is transferred as required to Swanson Lake where releases into the Republican River are regulated to meet the industrial needs of the AMOCO Production Company and Rex Monahan for their waterflood operations in the Sleepy Hollow Oil Field south of Bartley, Nebraska.

Bonny Reservoir inflows from the South Fork of the Republican River and Landsman Creek are released into Hale Ditch as requested by the Colorado State Engineer. Bonny storage water will be available to Hale Ditch and other natural flow appropriators under short-term water service contracts. Most of the 700 acres served by Hale Ditch are now owned and operated by the Colorado Department of Natural Resources, Division of Wildlife.

The normal operation pattern of Bonny Reservoir, with a slowly rising or stable pool, enhances fish spawning in the spring and affords excellent hunting conditions each fall.

Negotiations are continuing with the Colorado Division of Wildlife for sale of the entire conservation storage pool.

1981 Summary

The 19.39 inches of precipitation during 1981 was 119 percent of normal, while the inflow (16,523 acre-feet) to Bonny Reservoir was a little less than the dry-year forecast. The water supply was adequate to furnish 385 acre-feet to AMOCO Production Company and 1 acre-foot to Rex Monahan. As directed by the Colorado Water Commissioner, 1,479 acre-feet of reservoir inflows from the South Fork of the Republican River and Landsman Creek were passed through Bonny Reservoir into Hale Ditch.

Short-term water service letter agreements for sale of storage water were made to three users. The State of Colorado Department of Natural Resources purchased 1,188 acre-feet for industrial or irrigation purposes, Gary Andrews purchased 42 acre-feet for irrigation, and B.A.L. Enterprises purchased 84 acre-feet for irrigation use. Western Well Drilling and Thomas Knapp each purchased 50,000 gallons (0.15 acre-foot) for industrial use.

1982 Outlook

AMOCO Production Company and Rex Monahan will have an adequate water supply in 1982. Water stored in Bonny Reservoir will also be available for sale to Hale Ditch and other private irrigators under short-term water service contracts.

Releases will be made each winter to maintain a constant elevation during the period when the reservoir is ice-covered.

Frenchman Unit, Frenchman-Cambridge Division in Nebraska

General

The transportation of water from Enders Reservoir through 52 miles of Frenchman River channel to the Culbertson Diversion Dam created an erosion problem that made it necessary to initiate a control and stabilization program in 1964. All contract work has been completed, and the remaining work consists of a small maintenance program.

The Culbertson Canal and the Culbertson Extension Canal systems serve 9,600 acres in the Frenchman Valley Irrigation District and 11,490 acres in the H & RW Irrigation District. The water supply for these lands is furnished by flows from Frenchman Creek and Stinking Water Creek and off-season storage in Enders Reservoir.

The normal operation of Enders Reservoir, with the gradual rise in water surface during the spring months, provides desirable fish spawning conditions. Irrigation releases will normally deplete the conservation storage by late summer, thereby limiting the fishing and recreational usage.

1981 Summary

The 23.30 inches of precipitation at Enders Dam was 124 percent of normal, while the 1981 inflow into Enders Reservoir (27,165 acre-feet) was below the dry-year forecast. Due to extensive groundwater pumping above the reservoir the inflow was only 45 percent of the average historical pre-construction runoff at the Enders damsite (60,700 acre-feet, 1929-1947). This was the fourteenth consecutive year with below-normal inflows. The conservation pool was not filled during 1981. A total of 2,438 acre-feet of water was conserved between the 1980 and 1981 irrigation seasons by pumping seepage back into the reservoir. Irrigation releases were stopped on August 30th.

The farm delivery averaged about 0.59 acre-foot per acre for the two districts. Some farmers were able to supplement their project water supply from private irrigation wells. The Frenchman Valley Irrigation District reports that 8,987 acres received water in 1981, and the H & RW Irrigation District reports 11,078 acres, which are 94 and 96 percent, respectively, of the lands with service available. The gross crop value for Frenchman Valley Irrigation District was $2,929,037, which is a decrease of $415,701 from the previous year; the gross crop value for the H & RW Irrigation District was $3,641,080, which is a decrease of $5,613 from the previous year.

1982 Outlook

The fall and early winter inflows into Enders Reservoir were a little below the dry-year forecast. If reasonable minimum runoff conditions, prevail, the

project water supply is expected to be inadequate to irrigate 8,500 acres in the Frenchman Valley Irrigation District and 10,000 acres in the H & RW Irrigation District. As much as 2,400 acre-feet are expected to be conserved by pumping seepage water back into the Enders Reservoir.

Meeker-Driftwood, Red Willow, and Cambridge Units, Frenchman-Cambridge Division in Nebraska

General

During the spring months, Swanson, Hugh Butler, and Harry Strunk Lakes normally have a rising or stable pool which enhances the spawning of northern pike and walleye. These lakes provide excellent opportunities for fishing, water sports, and recreation.

Service is provided for Frenchman-Cambridge Irrigation District by Meeker-Driftwood Canal to 16,476 acres; Red Willow Canal to 4,932 acres; Bartley Canal to 6,539 acres; and Cambridge Canal to 17,053 acres. The water supply for these lands is provided by storage in Swanson, Hugh Butler, and Harry Strunk Lakes, and flows of the Republican River and Red Willow and Medicine Creeks.

A re-survey of sediment ranges for Harry Strunk Lake was completed in 1981. Revised area-capacity data has not yet been published. A re-survey of the reservoir sediment ranges for Swanson Lake is scheduled for the spring of 1982.

1981 Summary

The precipitation of 30.38 inches at Trenton Dam was 157 percent of normal, and the inflow to Swanson Lake was a little above the normal-year forecast. At the beginning of the 1981 irrigation season (June 17), there was 122,428 acre-feet of water stored in Swanson Lake, which is 2,268 acre-feet above the top of conservation capacity. This carryover storage, storage releases from Hugh Butler Lake, and the inflows furnished full water supplies to project lands served by the Meeker-Driftwood and Bartley Canal systems. The Frenchman-Cambridge Irrigation District diverted 29,951 acre-feet into Meeker-Driftwood Canal to irrigate 16,160 acres and 7,858 acre-feet into Bartley Canal for 6,390 acres.

The precipitation of 23.38 inches at Red Willow Dam was 118 percent of normal, while the inflow into Hugh Butler Lake was between the dry-year and normal-year forecasts. The water supply was adequate to meet the diversion requirements for Red Willow Canal. The district diverted 5,133 acre-feet of water to irrigate 4,790 acres of land served by Red Willow Canal. During the latter part of the irrigation season, in order to conserve water in Swanson Lake, some of the demands for the Bartley Canal were satisfied by supplementing natural flows with storage water from Hugh Butler Lake.

The precipitation of 28.20 inches was 147 percent of normal at Medicine Creek Dam, while the inflow was between the dry- and normal-year forecasts. The water supply was adequate and 20,511 acre-feet of water was diverted to irrigate 16,720 acres of land served by the Cambridge Canal.

The Frenchman-Cambridge Rehabilitation and Betterment Program for placing laterals in pipe was continued during 1981. Pipe lateral installations on the Bartley and Red Willow Canal systems have been completed, and work is in progress on the Cambridge and Meeker-Driftwood Canal systems--46.8 miles of pipe has been placed by the end of 1981. The pipe lateral installations reduce system losses and the time required for operation and maintenance activities.

The 1981 gross crop value from the lands served by Meeker-Driftwood, Bartley, Red Willow, and Cambridge Canals was $13,688,433, which is $2,055,091 less than in 1980.

1982 Outlook

Forecasts show that carryover storage plus reasonable minimum inflows for the three lakes supplying the Frenchman-Cambridge Irrigation District would be adequate to meet the full dry-year irrigation requirement.

It is estimated that 16,160 acres will be served from the Meeker-Driftwood Canal; 16,720 acres will be served from the Cambridge Canal; 4,790 acres will be served from the Red Willow Canal; and 6,290 acres will be served from the Bartley Canal.

No surplus storage is expected to be available for sale as a supplemental supply to non-project lands in 1982.

Almena Unit, Kanaska Division in Kansas

General

There are 5,763 acres with service available in the Almena Irrigation District. The project water supply is provided by Prairie Dog Creek flows and Keith Sebelius Lake storage.

The water service contract for the City of Norton, Kansas, provides for a maximum annual use of 1,600 acre-feet from Keith Sebelius Lake.

1981 Summary

The precipitation at Norton Dam was 30.50 inches, which is 150 percent of normal. The total inflow was 1,820 acre-feet, which is about 2,600 acre-feet less than the dry-year forecast. Since the City's pool was not filled, the Almena Irrigation District did not request any irrigation releases from storage; however, 4,817 acres were irrigated from 123 private wells that furnished 12,840 acre-feet. This is the eleventh consecutive year that the district has had to use water from privately owned irrigation wells.

The City of Norton used 426 acre-feet of municipal water during 1981.

The maximum content of Keith Sebelius Lake was 3,881 acre-feet, which was reached on June 2, 1981.

1982 Outlook

The Almena Irrigation District expects to deliver water to 5,400 acres if an adequate water supply is available. If 1982 is a dry year without significant run-off producing storms above Keith Sebelius Lake, it is anticipated that no irrigation releases will be made. If normal inflow into the lake and normal rainfall over the irrigated area occur in 1982, a shortage of 5,300 acre-feet or more than one-half the irrigation requirement may be experienced.

Requirements for the City of Norton are expected to be met in full in 1982 under normal- or wet-year conditions. With dry-year conditions, some shortages will be experienced.

Franklin, Superior-Courtland, and Courtland Units, Bostwick Division in Nebraska and Kansas

General

Harlan County Lake storage and Republican River flows provide a project water supply for 22,787 acres in the Bostwick Irrigation District in Nebraska and 12,771 acres in the Kansas-Bostwick Irrigation District No. 2 above Lovewell Reservoir. These flows together with White Rock Creek flows and Lovewell Reservoir storage, furnish a water supply for 27,329 acres below Lovewell Reservoir in the Kansas-Bostwick Irrigation District.

The lands in the Franklin and Superior-Courtland Units are in the Bostwick Irrigation District in Nebraska. The lands in the Courtland Unit are in the Kansas-Bostwick Irrigation District.

Minimum flow operational objectives presented in the 1980-1981 AOP will be changed, effective at the end of the irrigation releases for 1982. Based on analyses by the Fish and Wildlife Service, the Bureau has decided to eliminate all minimum flow releases. However, small short-duration releases will be made as required to meet established State water quality criteria of not less than 5.0 p/m for dissolved oxygen and a maximum temperature of 90° F. in the stilling basin.

As recommended by the Kansas State Board of Health, the Nebraska State Department of Health, and the U. S. Public Health Service, it is desirable for the sanitary quality of the stream to maintain daily flows of 40 ft^3/s in the Republican River below Superior, Nebraska, from June through September. During normal years when the Superior Canal and Courtland Canal (in Nebraska) are in operation, the return flows, seepage, and surface irrigation runoff, plus the natural flow gain in the Republican River below the Superior-Courtland Diversion Dam, will meet this recommended flow. If through normal reservoir operations it is possible to comply with the above recommendations, the Bureau will do so as it has done in the past. However, during dry years when the forecasted reasonable minimum inflows

will not fill Harlan County Lake before the start of the next irrigation season, the available flows in the Republican River below Harlan County Dam are diverted into the Courtland Canal to be stored in Lovewell Reservoir. When this condition exists, the flow in the Republican River below Superior, Nebraska, will be less than the 40 ft^3/s that was recommended.

The Kansas Fish and Game Commission has requested that the Kansas-Bostwick Irrigation District and the Bureau maintain, when possible, a flow of 20 ft^3/s into Lovewell Reservoir when the Courtland Canal is in operation and the conservation pool is below capacity. This recommended inflow provides excellent fishing around the canal inlet to the reservoir. The seepage below Lovewell Dam into White Rock Creek maintains a small live stream throughout the year.

Plans are being formulated to add riprap along the upstream face of Lovewell Dam. Prolonged reservoir operation at elevations near the top of conservation pool is causing riprap damage and bank erosion. To facilitate placement of the riprap (scheduled for fall of 1982 and spring of 1983), the reservoir water level will be held 7 to 8 feet below the top of conservation pool. In the interim, damage and erosion will be minimized by maintaining the fall and winter reservoir water levels below elevation 1581.0 feet.

1981 Summary - Bostwick Division - Harlan County Lake Operations

The precipitation at Harlan County Dam totaled 30.31 inches of rainfall, which was 145 percent of normal, while the inflow (149,830 acre-feet) was between the dry- and normal-year forecasts. The conservation capacity of Harlan County Lake lacked 67,900 acre-feet of filling at the beginning of the 1981 irrigation season.

The 31,460 irrigated acres in the Bostwick Division in Nebraska and Kansas, above Lovewell Dam, were furnished a full water supply. In addition, 27,154 acre-feet were delivered to Lovewell Reservoir through the Courtland Canal.

1981 Summary - Bostwick Division - Nebraska

The Bostwick Irrigation District in Nebraska diverted 27,916 acre-feet for the irrigation of 20,492 acres. The gross crop value was $6,850,364, which is $621,840 more than in 1980.

1981 Summary - Bostwick Division - Kansas

The 1981 precipitation at Lovewell Dam totaled 28.63 inches of rainfall, which was 116 percent of normal.

The Kansas-Bostwick Irrigation District diverted a total of 52,661 acre-feet to serve 10,968 acres above Lovewell Dam and 21,924 acres below Lovewell Dam. The gross crop value was $9,857,533, which is $260,305 more than the previous year. Prior to the start of the irrigation season, Lovewell Reservoir's conservation storage pool was filled.

1982 Outlook - Bostwick Division

The Bostwick Irrigation District in Nebraska and the Kansas-Bostwick Irrigation District No. 2 expect to deliver water to 20,600 and 35,100 acres, respectively. The storage in Harlan County Lake and Lovewell Reservoir and the return flows of the Republican River and White Rock Creek flows are expected to furnish an adequate water supply for the Bostwick lands.

Inflow to Lovewell Reservoir from the Courtland Canal will be started in the spring to allow for filling the reservoir from natural flow in the Republican River without storage releases from Harlan County Lake.

To aid in the placement of riprap, Lovewell Reservoir water level will be maintained at the approximate elevation of 1574.0 feet next fall and winter.

Kirwin Unit, Solomon Division in Kansas

General

The water supply for the 11,435 acres of land in the Kirwin Irrigation District is furnished by storage from Kirwin Reservoir and inflows from the North Fork of the Solomon River and Bow Creek.

The operation of Kirwin Dam and Reservoir affords many opportunities for recreation, fishing, hunting, water sports, fish spawning, and preservation of waterfowl species.

1981 Summary

The precipitation totaled 26.77 inches which was 120 percent of normal, but the inflow (3,948 acre-feet) was less than the dry-year forecast. On May 1, at the beginning of the irrigation season, the reservoir was at elevation 1695.72 feet, which is below the bottom of the active pool. The Bureau and the district decided against project irrigation for the season. The maximum content of Kirwin Reservoir during 1981 (August 7) was 10,278 acre-feet. Irrigators in the Kirwin Irrigation District continued to pump water from private wells to enable irrigation of some project lands.

1982 Outlook

The Kirwin Irrigation District estimates that 7,000 acres may be irrigated in 1982. Normal precipitation and normal forecasted inflows from the North Fork of the Solomon River would be adequate to irrigate these lands; however, under dry-year forecasts, a shortage of about 11,900 acre-feet may be experienced. Less than dry-year inflow has been experienced since September 1981. If this shortage continues, it is anticipated that no reservoir releases will be made.

Webster Unit, Solomon Division in Kansas

General

The Webster Irrigation District has service available to 8,500 acres. The project water supply is provided by Webster Reservoir storage and flows of the South Fork of the Solomon River.

1981 Summary

In 1981, the precipitation at Webster Dam was 87 percent of normal (20.84 inches). The inflow of 7,572 acre-feet was less than the dry-year forecast.

On May 1 at the beginning of the irrigation season, the carryover storage was determined by the Bureau and the district to be inadequate for irrigation. Irrigators with private wells provided water for part of the project lands, although Osborne Canal was not in operation during the season.

1982 Outlook

The carryover storage and the flows in the South Fork of the Solomon River are expected to be adequate under normal- or wet-year forecasts to irrigate 5,000 acres in the Webster Irrigation District in 1982. Under dry-year forecasts, a severe shortage of 12,000 acre-feet may be experienced. Less than dry-year inflow has been experienced since September 1981. If this continues, it is anticipated that shortages will be in excess of fifty percent of crop requirements.

Glen Elder Unit, Solomon Division in Kansas

General

Releases from Waconda Lake will be regulated as outlined in two Memorandums of Understanding between the State of Kansas and the Bureau. Releases are made for the City of Beloit, temporary short-term water service contracts, and water right administration. The water service contract with Beloit, Kansas, provides for annual use of up to 2,000 acre-feet of Waconda Lake storage, and is measured at the Glen Elder Dam river outlet works. In any water year that the City's water supply is insufficient and there is surplus water in Waconda Lake, such additional water may be delivered to the City at a rate of $15.00 per acre-foot.

The water service contract with the WCH&T Rural Water District No. 2 provides for use of storage water, as available from Waconda Lake, not to exceed 1,009 acre-feet per calendar year.

To lessen ice damage to the upstream face of Glen Elder Dam during winter months, releases from Waconda Lake will be regulated each year to maintain a constant water surface level--from 0 to 5 feet below the top of conservation capacity--while the lake is ice-covered.

The available facilities along the shores of Waconda Lake and the large water surface area afford opportunities to thousands of people for picnics, sightseeing, recreation, water sports, hunting, and fishing.

When compatible with flood control operations, the operating criteria for Waconda Lake provide for a stable or rising pool level during the fish spawning period each spring.

When possible, drawdowns will be scheduled for late summer and early fall so that drawdown areas can be seeded. This seeding prevents wind erosion and provides winter food and cover for wildlife and fish with spawning habitat in the spring when these areas are inundated.

1981 Summary

The precipitation at Glen Elder Dam was 122 percent of normal (31.05 inches), and the inflow (77,146 acre-feet) was between dry- and normal-year forecasts. Total storage releases of 457 acre-feet were made at the request of the City of Beloit, plus an additional 6,978 acre-feet for quality control were bypassed as directed by the State Water Commissioner. Other controlled releases were 3,484 acre-feet, which includes 739 acre-feet purchased by irrigators under temporary letter agreements. Releases of 625 acre-feet were made for the WCH&T Rural Water District No. 2.

1982 Outlook

The municipal requirements of Beloit and the requirements of the WCH&T Rural Water District No. 2 will be met in full with releases as required from Waconda Lake. It is expected that the Water Commissioner of the State of Kansas will request that inflows be passed through the lake for water right administration. Waconda Lake storage water will be available to natural flow appropriators under short-term water service contracts. To aid in the administration of storage water releases, all water purchasers must install meters on their pumps. To minimize ice damage the reservoir will be regulated to maintain a constant level during the months the reservoir is ice-covered. During 1982 Waconda Lake will be operated with a stable or slowly rising pool early in the year. Under dry- or normal-year conditions, the lake will be maintained at about 3.0 to 3.5 feet below the top of the conservation pool for next winter.

Cedar Bluff Unit, Smoky Hill Division in Kansas

General

Cedar Bluff Reservoir storage and Smoky Hill River flows provide a water supply for the 6,800 acres in the Cedar Bluff Irrigation District and up to 4,000 acre-feet for the Cedar Bluff National Fish Hatchery. Cedar Bluff storage also furnishes a maximum of 2,000 acre-feet each year, if required, for the City of Russell, Kansas.

The return flows from the Cedar Bluff National Fish Hatchery and seepage from Cedar Bluff Reservoir maintain the fisheries and enhance fishing in the Smoky Hill River below Cedar Bluff Dam.

Following several years of below-normal inflow, a share-shortage procedure was adopted July 31, 1981. Separate pools were established for each user with inflow, outflow, and evaporation allocated on a monthly basis. Inflow and initial pool allocations were made on the basis of perfected maximum annual usage with the maximum accumulated storage being that allowed by each user's water right.

1981 Summary

The precipitation was 94 percent of normal (20.65 inches). The inflow (7,005 acre-feet) was below the dry-year forecast. Lake evaporation has exceeded

computed inflows every year since 1974. The year's high content of 24,518 acre-feet, reached on July 7, was 10,800 acre-feet below the bottom of active storage. Due to continuing low water levels, no irrigation releases were made in 1981 (third consecutive year). The Cedar Bluff National Fish Hatchery diverted 1,916 acre-feet, most of which were passed through the facilities and returned to the Smoky Hill River below Cedar Bluff Dam. No releases were made for the City of Russell.

1982 Outlook

The reservoir elevation of 2100.44 feet on December 31, 1981, is in the inactive pool and the inflow has been below dry-year conditions. With dry-year inflows, the total irrigation demand of 21,100 acre-feet would be shorted. However, with normal-year conditions, moderate shortages of 6,800 acre-feet may be experienced.

With dry-year or normal-year inflows the Cedar Bluff National Fish Hatchery and the City of Russell, Kansas, will also experience shortages in 1982.

A P P E N D I X

TABLE 1

RESERVOIR DATA - NIOBRARA, LOWER PLATTE AND KANSAS RIVER BASINS

RESERVOIR		CAPACITY ALLOCATIONS 1/ DEAD	LIVE CONSERVATION Inactive	Active	FLOOD CONTROL
Box Butte	- Elevation Ft.	3969.0	3976.5	4007.0	---
	Total Acre-feet	640	2,275	31,060	---
	Net Acre-feet	640	1,635	28,785	---
Merritt	- Elevation Ft.	2875.0	2896.0	2946.0	---
	Total Acre-feet	1,614	6,800	74,486	---
	Net Acre-feet	1,614	5,186	67,686	---
Sherman	- Elevation Ft.	2118.5	2129.0	2162.3	---
	Total Acre-feet	3,839	10,496	69,076	---
	Net Acre-feet	3,839	6,657	58,580	---
Bonny	- Elevation Ft.	3635.5	3638.0	3672.0	3710.0
	Total Acre-feet	1,418	2,134	41,340	170,160
	Net Acre-feet	1,418	716	39,206	128,820
Swanson Lake	- Elevation Ft.	2710.0	2720.0	2752.0	2773.0
	Total Acre-feet	4,101	15,510	120,160	253,950
	Net Acre-feet	4,101	11,409	104,650	133,790
Enders	- Elevation Ft.	3080.0	3082.4	3112.3	3127.0
	Total Acre-feet	8,467	9,968	44,480	74,520
	Net Acre-feet	8,467	1,501	34,512	30,040
Hugh Butler Lake	- Elevation Ft.	2552.0	2558.0	2581.8	2604.9
	Total Acre-feet	6,313	10,450	37,776	86,630
	Net Acre-feet	6,313	4,137	27,326	48,854
Harry Strunk Lake	- Elevation Ft.	2335.0	2343.0	2366.1	2386.2
	Total Acre-feet	4,911	9,548	37,141	89,313
	Net Acre-feet	4,911	4,637	27,593	52,172
Norton	- Elevation Ft.	2275.0	2280.4	2304.3	2331.4
	Total Acre-feet	2,718	5,284	35,935	134,740
	Net Acre-feet	2,718	2,566	30,651	98,805
Harlan County Lake	- Elevation Ft.	1885.0	1927.0	1946.0	1973.5
	Total Acre-feet	0	126,727	319,787	828,776
	Net Acre-feet	0	126,727	193,060	508,989
Lovewell	- Elevation Ft.	1562.0	1571.7	1582.6	1595.3
	Total Acre-feet	5,054	16,760	41,690	92,150
	Net Acre-feet	5,054	11,706	24,930	50,460
Kirwin	- Elevation Ft.	1693.0	1697.0	1729.25	1757.3
	Total Acre-feet	6,385	9,785	99,435	314,550
	Net Acre-feet	6,385	3,400	89,650	215,115
Webster	- Elevation Ft.	1855.5	1860.0	1892.45	1923.7
	Total Acre-feet	2,184	5,300	77,370	260,740
	Net Acre-feet	2,184	3,116	72,070	183,370
Waconda Lake	- Elevation Ft.	1407.8	1428.0	1455.6	1488.3
	Total Acre-feet	1,236	36,671	241,460	963,775
	Net Acre-feet	1,236	35,435	204,789	722,315
Cedar Bluff	- Elevation Ft.	2090.0	2107.8	2144.0	2166.0
	Total Acre-feet	8,261	35,320	185,090	376,950
	Net Acre-feet	8,261	27,059	149,770	191,860
Total Storage (A.F.)		57,141	303,028	1,456,286	3,646,254
Total Net Acre-feet		57,141	245,887	1,153,258	2,364,590

1/ Includes space for sediment storage.

TABLE 2
SUMMARY OF 1981 OPERATIONS

MIRAGE FLATS PROJECT
BOX BUTTE RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	MIRAGE FLATS CANAL Diversions To Canal (AF)	MIRAGE FLATS CANAL Delivered To Farms (AF)
Jan.	1,803	61	71	0.06	11,003	0	0
Feb.	1,682	54	81	0.08	12,550	0	0
Mar.	1,587	61	157	0	13,919	0	0
Apr.	1,274	46	390	1.30	14,757	0	0
May	1,459	52	314	4.00	15,850	0	0
June	0	966	1,117	0.97	13,767	841	146
July	1,836	7,071	456	3.74	8,076	6,924	2,920
Aug.	1,459	6,573	216	2.48	2,746	6,426	3,461
Sep.	1,617	1,246	163	0.33	2,954	1,282	606
Oct.	1,203	40	155	0.68	3,962	0	0
Nov.	1,489	40	119	0.02	5,292	0	0
Dec.	1,767	38	66	0.36	6,955	0	0
TOTAL	17,176	16,248	3,305	14.02	---	15,473	7,133

NOTE.--Mirage Flats Canal:
Acres irrigated 1981 -- 11,154

SANDHILLS DIVISION
AINSWORTH UNIT
MERRITT RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	AINSWORTH CANAL Diversions To Canal (AF)	AINSWORTH CANAL Delivered To Farms (AF)
Jan.	15,552	15,027	246	0.05	69,110	0	0
Feb.	13,947	13,081	308	0.20	69,668	0	0
Mar.	14,403	7,075	447	1.05	76,549	0	0
Apr.	13,210	12,444	766	0.48	76,549	478	0
May	14,589	13,702	887	4.14	76,549	4,114	681
June	14,973	18,875	1,306	1.48	71,341	12,090	6,746
July	17,594	29,062	1,207	10.24	58,666	27,876	21,065
Aug.	15,426	20,293	793	2.87	53,006	17,097	12,150
Sep.	13,481	10,500	680	0.73	55,307	6,027	3,720
Oct.	15,646	3,554	739	2.47	66,660	0	0
Nov.	14,065	11,435	459	0.36	68,831	0	0
Dec.	15,280	14,678	323	0.91	69,110	0	0
TOTAL	178,166	169,726	8,161	24.98	---	67,682	44,362

NOTE.--Ainsworth Canal:
Acres irrigated 1981 -- 33,951

MIDDLE LOUP DIVISION

MONTH	SARGENT UNIT SARGENT CANAL Diversions To Canal (AF)	SARGENT UNIT SARGENT CANAL Delivered To Farms (AF)	MIDDLE LOUP UNIT 1/ MIDDLE LOUP PUBLIC POWER CANALS Diversions To Canals (AF)	Diversion To Sherman Feeder Canal (AF)	FARWELL UNIT SHERMAN RESERVOIR Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	FARWELL CANALS Release To Canals (AF)	FARWELL CANALS Delivered To Farms (AF)
Jan.	0	0	0	0	12	1,309	82	0	48,731	0	0
Feb.	0	0	0	0	40	1,291	114	0.11	47,366	0	0
Mar.	0	0	0	1,010	863	1,309	222	1.54	46,698	0	0
Apr.	0	0	301	21,882	17,976	1,303	427	0.82	62,944	0	0
May	1,000	0	4,426	14,884	12,596	5,426	1,038	4.81	69,076	3,923	14
June	3,848	309	7,122	21,901	23,826	24,980	1,395	1.94	66,527	23,373	6,474
July	7,480	4,800	9,989	25,650	23,167	40,844	1,261	6.17	47,589	39,356	25,412
Aug.	2,378	590	4,392	25,259	23,456	12,516	843	3.88	57,686	11,452	4,430
Sep.	2,005	371	1,470	992	895	2,817	596	1.14	55,168	2,067	1,688
Oct.	97	34	0	0	0	1,083	875	0.39	53,210	0	0
Nov.	0	0	0	0	1	1,303	377	3.44	51,531	0	0
Dec.	0	0	0	0	712	1,309	114	1.77	50,820	0	0
TOTAL	16,808	6,104	27,700	111,578	103,544	95,490	7,344	26.01	---	80,171	38,018

1/ Non-Project.

NOTE.--Sargent Canal:
Acres irrigated 1981 -- 13,079

Middle Loup P. P. Canals:
Acres irrigated 1981 -- 14,506

Farwell Canals:
Acres irrigated 1981 -- 47,652

UPPER REPUBLICAN DIVISION
ARMEL UNIT
BONNY RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	Outflow To Hale Ditch (AF)	Industrial Uses (AF)
Jan.	1,297	746	196	0.55	39,210	0	31
Feb.	2,248	1,323	215	0.07	39,920	0	32
Mar.	2,868	1,268	326	4.38	41,194	0	39
Apr.	3,120	1,942	811	2.58	41,561	0	37
May	2,910	2,739	721	4.51	41,011	0	39
June	770	815	1,235	0.35	39,740	310	28
July	401	1,078	1,083	3.41	37,980	665	29
Aug.	0	606	819	1.00	36,555	310	32
Sep.	0	487	974	1.04	35,094	194	27
Oct.	336	264	460	0.50	34,706	0	29
Nov.	1,494	297	345	0.99	35,558	0	36
Dec.	1,070	223	192	0.01	36,213	0	27
TOTAL	16,523	11,788	7,377	19.39	---	1,479 2/	386

2/ Includes 1,314 A.F. under short-term water service letter agreements.

TABLE 2
SUMMARY OF 1981 OPERATIONS

FRENCHMAN-CAMBRIDGE DIVISION
FRENCHMAN UNIT

	ENDERS RESERVOIR					CULBERTSON CANAL		CULBERTSON EXT. CANAL	
MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	1,983	0	83	0.35	20,860	0	0	0	0
Feb.	1,719	0	90	0.10	22,489	0	0	0	0
Mar.	2,703	0	170	4.71	25,022	771	28	0	0
Apr.	2,311	131	495	3.52	26,707	3,390	811	0	0
May	2,954	0	399	5.48	29,262	126	77	3,722	0
June	1,977	989	780	1.78	29,470	167	91	3,272	28
July	2,778	8,926	658	3.50	22,664	4,274	2,860	5,551	1,966
Aug.	1,869	8,808	442	1.44	15,283	3,849	2,597	6,429	3,447
Sep.	2,321	188	350	0.71	17,066	2	0	9	0
Oct.	2,156	81	150	0.40	18,991	0	0	0	0
Nov.	2,303	98	171	1.17	21,025	0	0	0	0
Dec.	2,091	72	90	0.14	22,954	0	0	0	0
TOTAL	27,165	19,293	3,878	23.30	---	12,579	6,464	18,983	5,441

NOTE.--Culbertson Canal: Acres irrigated 1981 -- 8,987
Culbertson Extension Canal: Acres irrigated 1981 -- 11,078

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
MEEKER-DRIFTWOOD UNIT

	SWANSON LAKE					MEEKER-DRIFTWOOD		BARTLEY CANAL	
MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	5,223	61	282	0.31	63,880	0	0	0	0
Feb.	6,130	56	314	0.33	69,640	0	0	0	0
Mar.	14,368	61	587	2.99	83,360	0	0	0	0
Apr.	16,261	58	1,823	4.09	97,740	0	0	0	0
May	22,202	61	1,461	6.61	118,420	0	0	0	0
June	6,782	4,818	2,844	3.08	117,540	2,343	25	461	9
July	6,197	17,276	2,451	8.28	104,010	13,138	6,988	3,776	2,609
Aug.	3,314	11,355	1,869	1.72	94,100	11,351	6,759	2,743	1,858
Sep.	0	3,576	2,074	0.12	88,450	3,119	1,668	878	586
Oct.	812	61	841	0.18	88,360	0	0	0	0
Nov.	5,997	60	727	2.14	93,570	0	0	0	0
Dec.	5,250	61	389	0.53	98,370	0	0	0	0
TOTAL	92,536	37,504	15,662	30.38	---	29,951	15,440	7,858	5,062

NOTE.--Meeker-Driftwood Canal: Acres irrigated 1981 -- 16,160
Bartley Canal: Acres irrigated 1981 -- 6,390

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
RED WILLOW UNIT

	HUGH BUTLER LAKE					RED WILLOW CANAL	
MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	1,196	260	77	0.04	22,862	0	0
Feb.	1,383	238	88	0.21	23,919	0	0
Mar.	2,143	294	166	2.63	25,602	0	0
Apr.	2,637	270	601	3.53	27,368	0	0
May	2,314	250	473	4.39	28,959	0	0
June	969	825	842	1.42	28,261	472	90
July	1,436	2,800	739	5.05	26,158	2,080	1,139
Aug.	3,321	2,344	531	3.80	26,604	1,716	1,052
Sep.	530	1,133	498	0.30	25,503	865	467
Oct.	807	239	321	0.20	25,750	0	0
Nov.	1,292	276	200	1.60	26,566	0	0
Dec.	1,278	218	93	0.21	27,533	0	0
TOTAL	19,306	9,147	4,629	23.38	---	5,133	2,748

NOTE.--Red Willow Canal: Acres irrigated 1981 -- 4,790

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
CAMBRIDGE UNIT

	HARRY STRUNK LAKE					CAMBRIDGE CANAL	
MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	2,773	61	78	0.05	21,377	0	0
Feb.	2,693	56	93	0.21	23,921	0	0
Mar.	3,977	63	188	2.60	27,647	0	0
Apr.	3,769	60	654	3.47	30,702	0	0
May	4,275	62	589	4.50	34,326	0	0
June	2,115	680	982	2.65	34,779	1,973	3
July	5,606	5,114	910	5.31	34,361	9,884	5,501
Aug.	9,003	6,499	744	5.55	36,121	7,173	3,978
Sep.	1,904	637	688	0.95	36,700	1,481	463
Oct.	2,017	135	446	0.41	38,136	0	0
Nov.	2,339	1,091	300	1.88	39,084	0	0
Dec.	2,446	5,063	129	0.62	36,338	0	0
TOTAL	42,917	19,521	5,801	28.20	---	20,511	9,945

NOTE.--Cambridge Canal: Acres irrigated 1981 -- 16,720

TABLE 2
SUMMARY OF 1981 OPERATIONS

KANASKA DIVISION
ALMENA UNIT
KEITH SEBELIUS LAKE

MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Release To City Of Norton (AF)
Jan.	99	43	30	0.15	3,354	43
Feb.	104	40	34	0.09	3,384	40
Mar.	195	21	62	1.87	3,496	16
Apr.	297	26	215	3.53	3,552	24
May	523	22	182	8.62	3,871	22
June	120	53	291	2.77	3,647	53
July	177	47	242	4.82	3,535	47
Aug.	122	54	211	4.60	3,392	55
Sep.	7	41	164	0.97	3,194	43
Oct.	11	30	103	0.73	3,072	31
Nov.	84	24	68	1.76	3,064	24
Dec.	81	28	33	0.59	3,084	28
TOTAL	1,820	429	1,635	30.50	---	426

NOTE.--Almena Canal:
Due to the shortage of storage water in Keith Sebelius Lake, Almena Canal was not in operation during the 1981 irrigation season.

BOSTWICK DIVISION
FRANKLIN UNIT
HARLAN COUNTY LAKE

	Data from Corps of Engineers					FRANKLIN CANAL		NAPONEE CANAL	
MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Release To Canal (AF)	Delivered To Farms (AF)	Release To Canal (AF)	Delivered To Farms (AF)
Jan.	6,813	615	895	0.08	207,370	0	0	0	0
Feb.	6,754	509	619	0.18	212,996	0	0	0	0
Mar.	12,754	307	1,503	1.84	223,940	0	0	0	0
Apr.	12,694	298	3,221	2.73	233,115	0	0	0	0
May	20,767	528	3,160	7.89	250,194	0	0	0	0
June	8,430	11,657	5,096	2.34	241,871	996	66	66	4
July	19,745	35,224	4,766	3.75	221,626	9,851	3,765	1,166	639
Aug.	24,932	10,722	5,000	5.55	230,836	5,109	1,407	444	270
Sep.	7,795	595	4,594	2.87	233,442	0	0	0	0
Oct.	4,631	615	3,142	0.51	234,316	0	0	0	0
Nov.	10,383	595	2,231	1.79	241,873	0	0	0	0
Dec.	14,132	615	1,240	0.78	254,150	0	0	0	0
TOTAL	149,830	62,280 1/	35,467	30.31	---	15,956	5,238	1,676	913

1/ Includes 0.61 A.F. sold under a temporary water service letter agreement.

NOTE.--Franklin Canal:
Acres irrigated 1981 -- 10,099

Naponee Canal:
Acres irrigated 1981 -- 1,613

BOSTWICK DIVISION (Continued)
SUPERIOR-COURTLAND UNIT

	FRANKLIN PUMP CANAL		SUPERIOR CANAL		COURTLAND CANAL - ABOVE LOVEWELL				
						NEBRASKA USE		KANSAS USE	
MONTH	Diversions To Canal (AF)	Delivered To Farms (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)	Total Diversion (AF)	Total (AF)	Delivered To Farms (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	0	0	0	0	0	0	0	0	0
Feb.	0	0	0	0	0	0	0	0	0
Mar.	0	0	0	0	1,450	0	0	0	0
Apr.	0	0	0	0	5,489	0	0	23	16
May	0	0	0	0	6,168	0	0	0	0
June	33	20	1,465	442	11,118	99	84	7,350	2,471
July	961	613	5,421	2,167	22,230	454	370	7,306	4,172
Aug.	81	25	1,694	215	9,997	76	72	3,612	1,396
Sep.	0	0	0	0	983	0	0	306	217
Oct.	0	0	0	0	0	0	0	0	0
Nov.	0	0	0	0	0	0	0	0	0
Dec.	0	0	0	0	0	0	0	0	0
TOTAL	1,075	658	8,580	2,824	57,435	629	526	18,597	8,272

NOTE.--Franklin Pump Canal:
Acres irrigated 1981 -- 2,021

Superior Canal:
Acres irrigated 1981 -- 5,334

NOTE.--Courtland Canal--Nebraska Use:
Acres irrigated 1981 -- 1,425

Courtland Canal--Kansas Use:
Acres irrigated 1981 -- 10,968

BOSTWICK DIVISION (Continued)
COURTLAND UNIT
LOVEWELL RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	COURTLAND (Below) Release To Canal (AF)	COURTLAND (Below) Delivered To Farms (AF)
Jan.	190	7	143	0.12	31,920	0	0
Feb.	361	7	174	0.29	32,100	0	0
Mar.	1,032	9	323	1.35	32,800	0	0
Apr.	4,545	7	1,018	1.44	36,320	0	0
May	19,491	2,766	1,115	7.46	51,930	1,523	0
June	3,818	11,085	1,773	1.27	42,890	7,884	2,642
July	13,542	15,179	1,393	7.71	39,860	16,697	9,056
Aug.	6,583	5,801	1,182	3.43	39,460	6,573	2,411
Sep.	564	1,225	999	1.22	37,800	1,387	423
Oct.	0	30	700	0.61	37,070	0	0
Nov.	891	23	418	2.79	37,520	0	0
Dec.	1,249	1,947	182	0.94	36,640	0	0
TOTAL	52,266	38,086	9,420	28.63	---	34,064	14,532

NOTE.--Courtland Canal below Lovewell:
Acres irrigated 1981 -- 21,924

TABLE 2
SUMMARY OF 1981 OPERATIONS

SOLOMON DIVISION
KIRWIN UNIT
KIRWIN RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)
Jan.	0	0	59	0.21	8,370
Feb.	81	0	73	0.12	8,378
Mar.	282	0	124	2.08	8,536
Apr.	330	0	303	2.41	8,563
May	1,222	0	310	5.74	9,475
June	201	0	519	2.80	9,157
July	1,464	0	501	5.71	10,120
Aug.	244	0	429	3.51	9,935
Sep.	0	0	470	1.24	9,465
Oct.	1	0	300	0.45	9,166
Nov.	95	0	152	1.73	9,109
Dec.	28	0	75	0.77	9,062
TOTAL	3,948	0	3,315	26.77	---

NOTE.--Kirwin Canal:
Due to the shortage of storage water in Kirwin Reservoir, Kirwin Canal was not in operation during the 1981 irrigation season.

SOLOMON DIVISION (Continued)
WEBSTER UNIT
WEBSTER RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)
Jan.	28	0	85	0.31	9,441
Feb.	26	0	95	0.16	9,372
Mar.	229	0	172	1.32	9,429
Apr.	2,860	0	521	2.16	11,768
May	3,036	0	503	5.27	14,301
June	424	0	955	0.67	13,770
July	221	0	816	2.70	13,175
Aug.	58	0	747	1.38	12,486
Sep.	341	0	550	4.03	12,277
Oct.	1	0	481	0.45	11,797
Nov.	85	0	220	1.71	11,662
Dec.	263	0	198	0.68	11,727
TOTAL	7,572	0	5,343	20.84	---

NOTE.--Osborne Canal:
Due to the shortage of storage water in Webster Reservoir, Osborne Canal was not in operation during the 1981 irrigation season.

SOLOMON DIVISION (Continued)
GLEN ELDER UNIT

	WACONDA LAKE					OUTFLOW TO RIVER			
MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	City of Beloit Storage Release (AF)	Quality Bypass (AF)	Other Controlled Releases 2/ (AF)	Release To W.C.H.&T R.W.D. No. (AF)
Jan.	1,489	935	662	0.14	192,748	129	751	0	55
Feb.	1,895	883	795	0.08	192,965	0	831	0	52
Mar.	3,400	1,037	1,497	1.60	193,831	0	985	0	52
Apr.	5,472	1,231	5,324	1.75	192,748	0	1,174	0	57
May	20,292	1,004	3,874	8.32	208,162	0	727	224	53
June	8,202	355	6,495	4.28	209,514	0	298	0	57
July	16,106	1,469	6,000	6.14	218,151	0	0	1,410	59
Aug.	4,247	889	5,698	2.87	215,811	30	0	806	53
Sep.	6,453	1,481	5,089	2.07	215,694	271	115	1,044	51
Oct.	0	798	2,713	0.68	212,183	27	727	0	44
Nov.	5,245	724	1,829	2.44	214,875	0	681	0	43
Dec.	4,345	738	916	0.68	217,566	0	689	0	49
TOTAL	77,146	11,544	40,892	31.05	---	457	6,978	3,484	625

2/ Flood control and water right administration. Includes 739 A.F. sold under temporary contracts.

SMOKY HILL DIVISION
ELLIS UNIT
CEDAR BLUFF RESERVOIR

						STORAGES 3/			
MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Fish & Wildlife (AF)	City of Russell (AF)	Irrigation (AF)	Release To Fish Hatchery (AF)
Jan.	0	204	146	0.61	23,563	--	--	--	209
Feb.	71	209	151	0.05	23,274	--	--	--	212
Mar.	222	233	268	1.53	22,995	--	--	--	235
Apr.	309	254	946	1.44	22,104	--	--	--	257
May	2,335	234	571	6.36	23,634	--	--	--	218
June	943	263	1,186	0.82	23,128	--	--	--	238
July	2,300	242	1,171	3.23	24,015	2,517	1,259	11,978	225
Aug.	249	207	961	1.47	23,096	2,212	1,201	11,422	188
Sep.	129	100	834	1.38	22,291	2,021	1,143	10,866	85
Oct.	1	36	608	0.62	21,648	1,905	1,093	10,389	28
Nov.	440	8	282	2.74	21,798	1,927	1,105	10,505	8
Dec.	6	21	135	0.40	21,648	1,895	1,093	10,399	13
TOTAL	7,005	2,011	7,259	20.65	---	--	--	--	1,916

3/ Total storage = 8,261 A.F. + Fish & Wildlife + City of Russell + Irrigation.

NOTE.--Cedar Bluff Canal:
Due to the shortage of storage water in Cedar Bluff Reservoir, Cedar Bluff Canal was not in operation during the 1981 irrigation season.
No releases were made for the City of Russell, Kansas.

TABLE 3
ACRES IRRIGATED IN 1981 AND ESTIMATES FOR 1982

Irrigation District and Canal	Acres With Service Available	Acres Irrigated in 1981	Estimated Acres to be Irrigated in 1982
Mirage Flats Irrigation District			
Mirage Flats Canal	11,662	11,154	11,200
Ainsworth Irrigation District			
Ainsworth Canal	34,539	33,951	34,000
Sargent Irrigation District			
Sargent Canal	13,363	13,079	13,000
Farwell Irrigation District			
Farwell Canal	50,051	47,652	49,000
Frenchman Valley Irrigation District			
Culbertson Canal	9,600	8,987	8,500
H & RW Irrigation District			
Culbertson Extension Canal	11,490	11,078	10,000
Frenchman-Cambridge Irrigation District			
Meeker-Driftwood Canal	16,476	16,160	16,160
Red Willow Canal	4,932	4,790	4,790
Bartley Canal	6,539	6,390	6,290
Cambridge Canal	17,053	16,720	16,720
Total Frenchman-Cambridge Irrigation Dist.	45,000	44,060	43,960
Almena Irrigation District			
Almena Canal	5,763	0	5,400
Bostwick Irrigation District in Nebraska			
Franklin Canal	11,116	10,099	10,100
Naponee Canal	1,737	1,613	1,700
Franklin Pump Canal	2,091	2,021	2,050
Superior Canal	5,863	5,334	5,150
Courtland Canal (Nebr.)	1,980	1,425	1,600
Total Bostwick Irrigation Dist. in Nebr.	22,787	20,492	20,600
Kansas-Bostwick Irrigation District			
Courtland Canal above Lovewell	12,771	10,968	11,600
Courtland Canal below Lovewell	27,329	21,924	23,500
Total Kansas-Bostwick Irrigation District	40,100	32,892	35,100
Kirwin Irrigation District			
Kirwin Canal	11,435	0	7,000
Webster Irrigation District			
Osborne Canal	8,500	0	5,000
Cedar Bluff Irrigation District			
Cedar Bluff Canal	6,800	0	6,800
TOTAL PROJECT USES	271,090	223,345	249,560
Non-Project Uses			
Middle Loup Public Power & I.D. Canals	15,000	14,506	14,800
Hale Ditch	700	700	700
TOTAL NON-PROJECT USES	15,700	15,206	15,500
TOTAL PROJECT AND NON-PROJECT	286,790	238,551	265,060

BOX BUTTE RESERVOIR OPERATION ESTIMATES - 1982

MONTH	INFLOW MEAN CFS	INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS						
JAN	24.	1.5	1.09	.1	2.	.1	0.0	0.0	3987.6	8.3	1.3
FEB	34.	1.9	1.15	.1	2.	.1	0.0	0.0	3989.7	10.0	1.7
MAR	41.	2.5	2.07	.2	2.	.1	0.0	0.0	3992.1	12.2	2.2
APR	34.	2.0	3.76	.3	29.	1.7	0.0	0.0	3992.1	12.2	0.0
MAY	23.	1.4	6.32	.5	57.	3.5	0.0	0.0	3989.2	9.6	-2.6
JUN	17.	1.0	7.22	.4	59.	3.5	0.0	0.0	3985.3	6.7	-2.9
JUL	13.	.8	8.60	.4	168.	10.3	0.0	5.5	3976.5	2.3	-4.4
AUG	15.	.9	7.98	.2	169.	10.4	0.0	9.7	3976.5	2.3	0.0
SEP	13.	.8	5.81	.2	87.	5.2	0.0	4.6	3976.5	2.3	0.0
OCT	16.	1.0	4.64	.1	2.	.1	0.0	0.0	3978.6	3.1	.8
NOV	27.	1.6	2.97	.1	2.	.1	0.0	0.0	3981.5	4.5	1.4
DEC	28.	1.7	1.39	.1	2.	.1	0.0	0.0	3984.2	6.0	1.5
TOTAL		17.1	53.00	2.7		35.2	0.0	19.8			-1.0
					MOST PROBABLE INFLOW CONDITIONS						
JAN	29.	1.8	.99	.1	2.	.1	0.0	0.0	3988.0	8.6	1.6
FEB	40.	2.2	1.04	.1	2.	.1	0.0	0.0	3990.4	10.6	2.0
MAR	49.	3.0	1.89	.1	2.	.1	0.0	0.0	3993.3	13.4	2.8
APR	40.	2.4	3.41	.3	20.	1.2	0.0	0.0	3994.2	14.3	.9
MAY	26.	1.6	5.71	.5	20.	1.2	0.0	0.0	3994.1	14.2	-.1
JUN	20.	1.2	6.54	.5	42.	2.5	0.0	0.0	3992.3	12.4	-1.8
JUL	16.	1.0	7.80	.5	143.	8.8	0.0	0.0	3980.8	4.1	-8.3
AUG	16.	1.0	7.23	.3	145.	8.9	0.0	6.4	3976.5	2.3	-1.8
SEP	17.	1.0	5.24	.1	42.	2.5	0.0	1.6	3976.5	2.3	0.0
OCT	18.	1.1	4.19	.1	2.	.1	0.0	0.0	3978.9	3.2	.9
NOV	32.	1.9	2.70	.1	2.	.1	0.0	0.0	3982.3	4.9	1.7
DEC	33.	2.0	1.26	.1	2.	.1	0.0	0.0	3985.3	6.7	1.8
TOTAL		20.2	48.00	2.8		25.7	0.0	8.0			-.3
					REASONABLE MAXIMUM INFLOW CONDITIONS						
JAN	36.	2.2	.91	.1	2.	.1	0.0	0.0	3988.5	9.0	2.0
FEB	50.	2.8	.95	.1	2.	.1	0.0	0.0	3991.5	11.6	2.6
MAR	62.	3.8	1.72	.1	2.	.1	0.0	0.0	3995.1	15.2	3.6
APR	50.	3.0	3.12	.3	10.	.6	0.0	0.0	3997.0	17.3	2.1
MAY	34.	2.1	5.25	.5	13.	.8	0.0	0.0	3997.6	18.1	.8
JUN	25.	1.5	6.00	.6	29.	1.7	0.0	0.0	3997.0	17.3	-.8
JUL	20.	1.2	7.14	.6	109.	6.7	0.0	0.0	3991.0	11.2	-6.1
AUG	21.	1.3	6.63	.4	107.	6.6	0.0	0.0	3983.3	5.5	-5.7
SEP	20.	1.2	4.82	.2	30.	1.8	0.0	0.0	3981.9	4.7	-.8
OCT	23.	1.4	3.85	.2	2.	.1	0.0	0.0	3983.8	5.8	1.1
NOV	40.	2.4	2.46	.1	2.	.1	0.0	0.0	3987.2	8.0	2.2
DEC	41.	2.5	1.15	.1	2.	.1	0.0	0.0	3990.0	10.3	2.3
TOTAL		25.4	44.00	3.3		18.8	0.0	0.0			3.3

MERRITT RESERVOIR OPERATION ESTIMATES - 1962

MONTH	INFLOW MEAN CFS	INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
REASONABLE MINIMUM INFLOW CONDITIONS											
JAN	190.	11.7	1.13	.3	16.	1.0	10.4	0.0	2944.1	69.1	0.0
FEB	211.	11.7	1.43	.3	18.	1.0	10.4	0.0	2944.1	69.1	0.0
MAR	233.	14.3	1.99	.5	16.	1.0	7.4	0.0	2946.0	74.5	5.4
APR	234.	13.9	3.31	.8	17.	1.0	12.1	0.0	2946.0	74.5	0.0
MAY	216.	13.3	4.79	1.2	104.	6.4	5.7	0.0	2946.0	74.5	0.0
JUN	207.	12.3	6.20	1.5	165.	9.8	1.0	0.0	2946.0	74.5	0.0
JUL	208.	12.8	8.03	1.6	719.	44.2	0.0	0.0	2932.0	41.5	-33.0
AUG	208.	12.8	7.33	.7	719.	44.2	0.0	0.0	2901.5	9.4	-32.1
SEP	207.	12.3	5.39	.3	143.	8.5	0.0	0.0	2907.4	12.9	3.5
OCT	207.	12.7	3.76	.3	16.	1.0	0.0	0.0	2920.1	24.3	11.4
NOV	205.	12.2	2.15	.2	17.	1.0	0.0	0.0	2928.3	35.3	11.0
DEC	202.	12.4	1.49	.2	16.	1.0	0.0	0.0	2934.6	46.5	11.2
TOTAL		152.4	47.00	7.9		120.1	47.0	0.0			-22.6
MOST PROBABLE INFLOW CONDITIONS											
JAN	213.	13.1	1.07	.2	16.	1.0	11.9	0.0	2944.1	69.1	0.0
FEB	236.	13.1	1.34	.3	18.	1.0	11.8	0.0	2944.1	69.1	0.0
MAR	262.	16.1	1.87	.4	16.	1.0	9.3	0.0	2946.0	74.5	5.4
APR	260.	15.5	3.10	.8	17.	1.0	13.7	0.0	2946.0	74.5	0.0
MAY	242.	14.9	4.48	1.1	83.	5.1	8.7	0.0	2946.0	74.5	0.0
JUN	232.	13.8	5.80	1.4	131.	7.8	4.6	0.0	2946.0	74.5	0.0
JUL	233.	14.3	7.50	1.6	530.	32.6	0.0	0.0	2938.4	54.6	-19.9
AUG	233.	14.3	6.85	1.1	530.	32.6	0.0	0.0	2928.3	35.2	-19.4
SEP	232.	13.8	5.04	.7	109.	6.5	0.0	0.0	2932.2	41.8	6.6
OCT	231.	14.2	3.52	.6	16.	1.0	0.0	0.0	2938.3	54.4	12.6
NOV	230.	13.7	2.02	.4	17.	1.0	.6	0.0	2943.0	66.1	11.7
DEC	224.	13.8	1.41	.3	16.	1.0	12.5	0.0	2943.0	66.1	0.0
TOTAL		170.6	44.00	8.9		91.6	73.1	0.0			-3.0
REASONABLE MAXIMUM INFLOW CONDITIONS											
JAN	236.	14.5	.94	.2	16.	1.0	13.3	0.0	2944.1	69.1	0.0
FEB	261.	14.5	1.19	.3	18.	1.0	13.2	0.0	2944.1	69.1	0.0
MAR	288.	17.7	1.65	.4	16.	1.0	10.9	0.0	2946.0	74.5	5.4
APR	287.	17.1	2.75	.7	17.	1.0	15.4	0.0	2946.0	74.5	0.0
MAY	267.	16.4	3.97	1.0	55.	3.4	12.0	0.0	2946.0	74.5	0.0
JUN	257.	15.3	5.15	1.2	86.	5.1	9.0	0.0	2946.0	74.5	0.0
JUL	257.	15.8	6.66	1.6	348.	21.4	0.0	0.0	2943.4	67.3	-7.2
AUG	257.	15.8	6.08	1.3	348.	21.4	0.0	0.0	2940.8	60.4	-6.9
SEP	255.	15.2	4.47	1.0	74.	4.4	4.1	0.0	2943.0	66.1	5.7
OCT	254.	15.6	3.12	.7	16.	1.0	13.9	0.0	2943.0	66.1	0.0
NOV	254.	15.1	1.78	.4	17.	1.0	13.7	0.0	2943.0	66.1	0.0
DEC	247.	15.2	1.24	.3	16.	1.0	13.9	0.0	2943.0	66.1	0.0
TOTAL		188.2	39.00	9.1		62.7	119.4	0.0			-3.0

SHERMAN RESERVOIR OPERATION ESTIMATES - 1982

MONTH	INFLOW MEAN CFS	INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS						
JAN	0.	0.0	.65	.1	21.	1.3	0.0	0.0	2154.7	49.4	-1.4
FEB	0.	0.0	.71	.1	23.	1.3	0.0	0.0	2154.1	48.0	-1.4
MAR	0.	0.0	1.59	.3	21.	1.3	0.0	0.0	2153.4	46.4	-1.6
APR	301.	17.9	3.85	.8	22.	1.3	0.0	0.0	2159.8	62.2	15.8
MAY	151.	9.3	3.74	.9	24.	1.5	0.0	0.0	2162.3	69.1	6.9
JUN	200.	11.9	4.67	1.1	259.	15.4	0.0	0.0	2160.7	64.5	-4.6
JUL	179.	11.0	7.91	1.3	1210.	74.4	0.0	10.7	2129.0	10.5	-54.0
AUG	120.	7.4	7.12	.5	1205.	74.1	0.0	67.2	2129.0	10.5	0.0
SEP	424.	25.2	4.27	.4	245.	14.6	0.0	0.0	2138.6	20.7	10.2
OCT	546.	33.6	4.16	.7	18.	1.1	0.0	0.0	2156.0	52.5	31.8
NOV	0.	0.0	2.26	.4	22.	1.3	0.0	0.0	2155.3	50.8	-1.7
DEC	0.	0.0	.79	.2	21.	1.3	0.0	0.0	2154.6	49.3	-1.5
TOTAL		116.3	41.72	6.8		188.9	0.0	77.9			-1.5
					MOST PROBABLE INFLOW CONDITIONS						
JAN	0.	0.0	.43	.1	21.	1.3	0.0	0.0	2154.7	49.4	-1.4
FEB	0.	0.0	.60	.1	23.	1.3	0.0	0.0	2154.1	48.0	-1.4
MAR	0.	0.0	1.19	.2	21.	1.3	0.0	0.0	2153.4	46.5	-1.5
APR	252.	15.0	2.08	.4	22.	1.3	0.0	0.0	2158.9	59.8	13.3
MAY	184.	11.3	2.22	.5	24.	1.5	0.0	0.0	2162.3	69.1	9.3
JUN	139.	8.3	3.32	.8	128.	7.6	0.0	0.0	2162.3	69.0	-.1
JUL	296.	18.2	5.59	1.1	883.	54.3	0.0	0.0	2146.0	31.8	-37.2
AUG	207.	12.7	5.12	.6	862.	53.0	0.0	19.6	2129.0	10.5	-21.3
SEP	541.	32.2	3.23	.4	129.	7.7	0.0	0.0	2147.5	34.6	24.1
OCT	369.	22.7	3.81	.7	18.	1.1	0.0	0.0	2157.2	55.5	20.9
NOV	0.	0.0	1.76	.4	22.	1.3	0.0	0.0	2156.5	53.8	-1.7
DEC	0.	0.0	.58	.1	21.	1.3	0.0	0.0	2156.0	52.4	-1.4
TOTAL		120.4	29.93	5.4		133.0	0.0	19.6			1.6
					REASONABLE MAXIMUM INFLOW CONDITIONS						
JAN	0.	0.0	.21	0.0	21.	1.3	0.0	0.0	2154.7	49.5	-1.3
FEB	0.	0.0	.32	.1	23.	1.3	0.0	0.0	2154.1	48.1	-1.4
MAR	0.	0.0	.42	.1	21.	1.3	0.0	0.0	2153.5	46.7	-1.4
APR	277.	16.5	.59	.1	22.	1.3	0.0	0.0	2159.7	61.8	15.1
MAY	145.	8.9	.39	.1	24.	1.5	0.0	0.0	2162.3	69.1	7.3
JUN	97.	5.8	.91	.2	94.	5.6	0.0	0.0	2162.3	69.1	0.0
JUL	384.	23.6	4.82	1.1	610.	37.5	0.0	0.0	2156.7	54.1	-15.0
AUG	181.	11.1	4.02	.7	584.	35.9	0.0	0.0	2144.0	28.6	-25.5
SEP	541.	32.2	2.14	.4	96.	5.7	0.0	0.0	2156.9	54.7	26.1
OCT	0.	0.0	3.37	.7	18.	1.1	0.0	0.0	2156.2	52.9	-1.8
NOV	0.	0.0	.40	.1	22.	1.3	0.0	0.0	2155.6	51.5	-1.4
DEC	0.	0.0	.24	0.0	21.	1.3	0.0	0.0	2155.0	50.2	-1.3
TOTAL		98.1	17.83	3.6		95.1	0.0	0.0			-.6

BONNY RESERVOIR OPERATION ESTIMATES - 1982

MONTH	INFLOW MEAN CFS	INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT HALE 1000 AF	RELEASE REQUIREMENT RIVER 1000 AF	TOTAL MEAN CFS	TOTAL 1000 AF	RES SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS								
JAN	21.	1.3	1.45	.2	0.0	1.1	18.	1.1	0.0	0.0	3669.4	36.2	0.0
FEB	22.	1.2	1.55	.2	0.0	1.0	18.	1.0	0.0	0.0	3669.4	36.2	0.0
MAR	26.	1.6	2.45	.4	0.0	.3	5.	.3	0.0	0.0	3669.8	37.1	.9
APR	27.	1.6	4.30	.7	.3	.3	10.	.6	0.0	0.0	3670.0	37.4	.3
MAY	41.	2.5	5.35	.9	.9	.3	20.	1.2	0.0	0.0	3670.2	37.8	.4
JUN	34.	2.0	6.95	1.1	.9	.3	20.	1.2	0.0	0.0	3670.1	37.5	-.3
JUL	24.	1.5	8.30	1.3	.9	.3	20.	1.2	0.0	0.0	3669.5	36.5	-1.0
AUG	16.	1.0	7.00	1.1	.8	.3	18.	1.1	0.0	0.0	3668.9	35.3	-1.2
SEP	12.	.7	5.20	.8	.6	.3	15.	.9	0.0	0.0	3668.3	34.3	-1.0
OCT	16.	1.0	5.05	.8	.5	.3	13.	.8	0.0	0.0	3668.0	33.7	-.6
NOV	22.	1.3	3.05	.5	.3	.3	10.	.6	0.0	0.0	3668.1	33.9	.2
DEC	21.	1.3	1.85	.3	0.0	1.0	16.	1.0	0.0	0.0	3668.1	33.9	0.0
TOTAL		17.0	52.50	8.3	5.2	5.8		11.0	0.0	0.0			-2.3
					MOST PROBABLE INFLOW CONDITIONS								
JAN	28.	1.7	1.20	.2	0.0	1.5	24.	1.5	0.0	0.0	3669.4	36.2	0.0
FEB	29.	1.6	1.40	.2	0.0	1.4	25.	1.4	0.0	0.0	3669.4	36.2	0.0
MAR	34.	2.1	1.85	.3	0.0	.3	5.	.3	0.0	0.0	3670.2	37.7	1.5
APR	35.	2.1	2.80	.5	.4	.3	12.	.7	0.0	0.0	3670.6	38.6	.9
MAY	54.	3.3	3.00	.5	.6	.3	15.	.9	0.0	0.0	3671.6	40.5	1.9
JUN	44.	2.6	4.60	.8	.6	.3	15.	.9	.1	0.0	3672.0	41.3	.8
JUL	31.	1.9	6.25	1.1	.4	.3	11.	.7	.1	0.0	3672.0	41.3	0.0
AUG	23.	1.4	6.10	1.0	.4	.3	11.	.7	0.0	0.0	3671.8	41.0	-.3
SEP	15.	.9	4.30	.7	.6	.3	15.	.9	0.0	0.0	3671.5	40.3	-.7
OCT	21.	1.3	4.55	.8	.6	.3	15.	.9	0.0	0.0	3671.3	39.9	-.4
NOV	29.	1.7	2.80	.5	.2	.3	8.	.5	0.0	0.0	3671.6	40.6	.7
DEC	28.	1.7	1.55	.3	0.0	1.4	23.	1.4	0.0	0.0	3671.6	40.6	0.0
TOTAL		22.3	40.40	6.9	3.8	7.0		10.8	.2	0.0			4.4
					REASONABLE MAXIMUM INFLOW CONDITIONS								
JAN	46.	2.8	.90	.1	0.0	2.7	44.	2.7	0.0	0.0	3669.4	36.2	0.0
FEB	49.	2.7	1.25	.2	0.0	2.5	45.	2.5	0.0	0.0	3669.4	36.2	0.0
MAR	55.	3.4	1.35	.2	0.0	.3	5.	.3	0.0	0.0	3670.9	39.1	2.9
APR	59.	3.5	2.40	.4	.3	.3	10.	.6	.3	0.0	3672.0	41.3	2.2
MAY	91.	5.6	2.05	.3	.5	.3	13.	.8	4.5	0.0	3672.0	41.3	0.0
JUN	72.	4.3	2.50	.4	.2	.3	8.	.5	3.4	0.0	3672.0	41.3	0.0
JUL	54.	3.3	5.05	.9	.2	.3	8.	.5	1.9	0.0	3672.0	41.3	0.0
AUG	37.	2.3	4.00	.7	.4	.3	11.	.7	.9	0.0	3672.0	41.3	0.0
SEP	25.	1.5	3.20	.5	.4	.3	12.	.7	.3	0.0	3672.0	41.3	0.0
OCT	34.	2.1	3.40	.6	.3	.3	10.	.6	.9	0.0	3672.0	41.3	0.0
NOV	49.	2.9	2.60	.4	.3	.3	10.	.6	1.9	0.0	3672.0	41.3	0.0
DEC	46.	2.8	1.30	.2	0.0	.3	5.	.3	2.3	0.0	3672.0	41.3	0.0
TOTAL		37.2	30.00	4.9	2.6	8.2		10.8	16.4	0.0			5.1

SWANSON LAKE OPERATION ESTIMATES - 1982

MONTH	UNDEPLETED INFLOW 1000 AF	UPSTREAM DEPLETIONS 1000 AF	DEPLETED INFLOW MEAN CFS	DEPLETED INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RES SPILL 1000 AF	REQ SHORT 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RES CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS								
JAN	3.3	0.0	54.	3.3	1.05	.4	2.	.1	0.0	0.0	2748.0	101.2	2.8
FEB	4.8	0.0	86.	4.8	1.20	.5	2.	.1	0.0	0.0	2748.9	105.4	4.2
MAR	7.2	0.0	117.	7.2	1.95	.8	2.	.1	0.0	0.0	2750.3	111.7	6.3
APR	6.6	0.0	111.	6.6	3.85	1.5	2.	.1	0.0	0.0	2751.3	116.7	5.0
MAY	7.0	0.0	114.	7.0	4.10	1.7	102.	6.3	0.0	0.0	2751.1	115.7	-1.0
JUN	6.2	0.0	104.	6.2	5.20	2.1	118.	7.0	0.0	0.0	2750.5	112.8	-2.9
JUL	4.9	0.0	80.	4.9	7.70	2.9	353.	21.7	0.0	0.0	2746.2	93.1	-19.7
AUG	3.3	0.0	54.	3.3	6.90	2.4	346.	21.3	0.0	0.0	2741.3	72.7	-20.4
SEP	1.6	0.0	27.	1.6	5.25	1.6	198.	11.8	0.0	0.0	2738.1	60.9	-11.8
OCT	1.9	0.0	31.	1.9	4.60	1.3	63.	3.9	0.0	0.0	2737.2	57.6	-3.3
NOV	3.1	0.0	52.	3.1	2.70	.8	2.	.1	0.0	0.0	2737.8	59.8	2.2
DEC	3.1	0.0	50.	3.1	1.30	.4	2.	.1	0.0	0.0	2738.5	62.4	2.6
TOTAL	53.0	0.0		53.0	45.80	16.4		72.6	0.0	0.0			-36.0
					MOST PROBABLE INFLOW CONDITIONS								
JAN	5.1	0.0	83.	5.1	.75	.3	2.	.1	0.0	0.0	2748.4	103.1	4.7
FEB	7.5	0.0	135.	7.5	1.00	.4	2.	.1	0.0	0.0	2749.9	110.1	7.0
MAR	11.3	0.0	184.	11.3	1.40	.6	2.	.1	.5	0.0	2752.0	120.2	10.1
APR	10.3	0.0	173.	10.3	2.40	1.0	2.	.1	9.2	0.0	2752.0	120.2	0.0
MAY	10.9	0.0	177.	10.9	2.10	.9	23.	1.4	8.6	0.0	2752.0	120.2	0.0
JUN	9.6	0.0	161.	9.6	3.70	1.5	27.	1.6	6.5	0.0	2752.0	120.2	0.0
JUL	7.7	0.0	125.	7.7	6.10	2.5	270.	16.6	0.0	0.0	2749.6	108.8	-11.4
AUG	5.1	0.0	83.	5.1	5.70	2.2	301.	18.5	0.0	0.0	2746.2	93.2	-15.6
SEP	2.5	0.0	42.	2.5	3.40	1.2	89.	5.3	0.0	0.0	2745.3	89.2	-4.0
OCT	3.0	0.0	49.	3.0	4.30	1.5	26.	1.6	0.0	0.0	2745.3	89.1	-.1
NOV	4.9	0.0	82.	4.9	2.10	.8	2.	.1	0.0	0.0	2746.2	93.1	4.0
DEC	4.8	0.0	78.	4.8	1.10	.4	2.	.1	0.0	0.0	2747.2	97.4	4.3
TOTAL	82.7	0.0		82.7	34.05	13.3		45.6	24.8	0.0			-1.0
					REASONABLE MAXIMUM INFLOW CONDITIONS								
JAN	9.0	0.0	146.	9.0	.55	.2	2.	.1	0.0	0.0	2749.3	107.1	8.7
FEB	13.2	0.0	238.	13.2	.60	.2	2.	.1	0.0	0.0	2752.0	120.0	12.9
MAR	19.7	0.0	320.	19.7	.60	.2	2.	.1	19.2	0.0	2752.0	120.2	.2
APR	18.1	0.0	304.	18.1	.60	.2	2.	.1	17.8	0.0	2752.0	120.2	0.0
MAY	19.1	0.0	311.	19.1	.80	.3	13.	.8	18.0	0.0	2752.0	120.2	0.0
JUN	16.8	0.0	282.	16.8	1.90	.8	17.	1.0	15.0	0.0	2752.0	120.2	0.0
JUL	13.5	0.0	220.	13.5	4.00	1.7	146.	9.0	2.8	0.0	2752.0	120.2	0.0
AUG	9.0	0.0	146.	9.0	5.00	2.1	169.	10.4	0.0	0.0	2751.3	116.7	-3.5
SEP	4.3	0.0	72.	4.3	2.40	1.0	30.	1.8	0.0	0.0	2751.6	118.2	1.5
OCT	5.3	0.0	86.	5.3	3.80	1.6	15.	.9	.8	0.0	2752.0	120.2	2.0
NOV	8.5	0.0	143.	8.5	1.60	.7	2.	.1	7.7	0.0	2752.0	120.2	0.0
DEC	8.5	0.0	138.	8.5	.65	.3	2.	.1	8.1	0.0	2752.0	120.2	0.0
TOTAL	145.0	0.0		145.0	22.50	9.3		24.5	89.4	0.0			21.8

ENDERS RESERVOIR OPERATION ESTIMATES - 1982

MONTH	INFLOW MEAN CFS	INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
REASONABLE MINIMUM INFLOW CONDITIONS											
JAN	44.	2.7	1.05	.1	0.	0.0	0.0	0.0	3099.2	25.6	2.6
FEB	47.	2.6	1.20	.1	0.	0.0	0.0	0.0	3101.2	28.1	2.5
MAR	44.	2.7	1.95	.2	3.	.2	0.0	0.0	3103.0	30.4	2.3
APR	40.	2.4	4.10	.5	3.	.2	0.0	0.0	3104.2	32.1	1.7
MAY	42.	2.6	4.65	.5	49.	3.0	0.0	0.0	3103.6	31.2	-.9
JUN	47.	2.8	5.25	.6	57.	3.4	0.0	0.0	3102.7	30.0	-1.2
JUL	42.	2.6	8.60	.8	317.	19.5	0.0	0.0	3085.7	12.3	-17.7
AUG	39.	2.4	6.85	.4	298.	18.3	0.0	14.0	3082.4	10.0	-2.3
SEP	44.	2.6	5.50	.3	114.	6.8	0.0	4.5	3082.4	10.0	0.0
OCT	39.	2.4	4.60	.3	0.	0.0	0.0	0.0	3085.4	12.1	2.1
NOV	44.	2.6	2.65	.2	0.	0.0	0.0	0.0	3088.5	14.5	2.4
DEC	42.	2.6	1.20	.1	0.	0.0	0.0	0.0	3091.3	17.0	2.5
TOTAL		31.0	47.60	4.1		51.4	0.0	18.5			-6.0
MOST PROBABLE INFLOW CONDITIONS											
JAN	52.	3.2	.75	.1	0.	0.0	0.0	0.0	3099.6	26.1	3.1
FEB	54.	3.0	.95	.1	0.	0.0	0.0	0.0	3101.9	29.0	2.9
MAR	54.	3.3	1.35	.2	3.	.2	0.0	0.0	3104.1	31.9	2.9
APR	49.	2.9	2.60	.3	3.	.2	0.0	0.0	3105.8	34.3	2.4
MAY	52.	3.2	3.00	.4	11.	.7	0.0	0.0	3107.2	36.4	2.1
JUN	57.	3.4	3.55	.5	12.	.7	0.0	0.0	3108.7	38.6	2.2
JUL	52.	3.2	5.90	.7	224.	13.8	0.0	0.0	3100.6	27.3	-11.3
AUG	47.	2.9	6.50	.6	239.	14.7	0.0	0.0	3088.9	14.9	-12.4
SEP	50.	3.0	3.45	.2	49.	2.9	0.0	0.0	3088.8	14.8	-.1
OCT	49.	3.0	4.30	.3	0.	0.0	0.0	0.0	3091.8	17.5	2.7
NOV	52.	3.1	2.30	.2	0.	0.0	0.0	0.0	3094.7	20.4	2.9
DEC	52.	3.2	.90	.1	0.	0.0	0.0	0.0	3097.5	23.5	3.1
TOTAL		37.4	35.55	3.7		33.2	0.0	0.0			.5
REASONABLE MAXIMUM INFLOW CONDITIONS											
JAN	63.	3.9	.55	.1	0.	0.0	0.0	0.0	3100.2	26.8	3.8
FEB	63.	3.5	.30	0.0	0.	0.0	0.0	0.0	3102.9	30.3	3.5
MAR	63.	3.9	.95	.1	3.	.2	0.0	0.0	3105.5	33.9	3.6
APR	59.	3.5	.80	.1	3.	.2	0.0	0.0	3107.7	37.1	3.2
MAY	60.	3.7	1.25	.2	3.	.2	0.0	0.0	3109.8	40.4	3.3
JUN	67.	4.0	2.40	.3	3.	.2	0.0	0.0	3112.0	43.9	3.5
JUL	59.	3.6	4.35	.6	127.	7.8	0.0	0.0	3109.0	39.1	-4.8
AUG	54.	3.3	4.50	.6	127.	7.8	0.0	0.0	3105.6	34.0	-5.1
SEP	57.	3.4	2.30	.3	20.	1.2	0.0	0.0	3106.9	35.9	1.9
OCT	55.	3.4	3.35	.4	0.	0.0	0.0	0.0	3108.9	38.9	3.0
NOV	61.	3.6	1.90	.3	0.	0.0	0.0	0.0	3110.9	42.2	3.3
DEC	60.	3.7	.65	.1	0.	0.0	1.3	0.0	3112.3	44.5	2.3
TOTAL		43.5	23.30	3.1		17.6	1.3	0.0			21.5

HUGH BUTLER LAKE OPERATION ESTIMATES - 1982

MONTH	INFLOW MEAN CFS	INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS						
JAN	18.	1.1	.92	.1	5.	.3	0.0	0.0	2575.3	28.2	.7
FEB	23.	1.3	1.11	.1	5.	.3	0.0	0.0	2576.0	29.1	.9
MAR	31.	1.9	2.01	.2	5.	.3	0.0	0.0	2577.0	30.5	1.4
APR	29.	1.7	4.39	.5	5.	.3	0.0	0.0	2577.6	31.4	.9
MAY	29.	1.8	4.45	.5	31.	1.9	0.0	0.0	2577.2	30.8	-.6
JUN	35.	2.1	7.01	.8	30.	1.8	0.0	0.0	2576.8	30.3	-.5
JUL	28.	1.7	8.45	.9	80.	4.9	0.0	0.0	2573.7	26.2	-4.1
AUG	18.	1.1	6.73	.7	75.	4.6	0.0	0.0	2570.2	22.0	-4.2
SEP	18.	1.1	6.08	.6	39.	2.3	0.0	0.0	2568.5	20.2	-1.8
OCT	16.	1.0	4.72	.4	11.	.7	0.0	0.0	2568.4	20.1	-.1
NOV	18.	1.1	2.63	.2	5.	.3	0.0	0.0	2569.0	20.7	.6
DEC	18.	1.1	1.20	.1	5.	.3	0.0	0.0	2569.6	21.4	.7
TOTAL		17.0	49.70	5.1		18.0	0.0	0.0			-6.1
					MOST PROBABLE INFLOW CONDITIONS						
JAN	23.	1.4	.70	.1	5.	.3	0.0	0.0	2575.5	28.5	1.0
FEB	31.	1.7	.75	.1	5.	.3	0.0	0.0	2576.5	29.8	1.3
MAR	39.	2.4	1.35	.2	5.	.3	0.0	0.0	2577.9	31.7	1.9
APR	35.	2.1	2.70	.3	5.	.3	0.0	0.0	2578.9	33.2	1.5
MAY	36.	2.2	2.80	.4	16.	1.0	0.0	0.0	2579.4	34.0	.8
JUN	45.	2.7	2.99	.4	15.	.9	0.0	0.0	2580.3	35.4	1.4
JUL	36.	2.2	6.09	.8	68.	4.2	0.0	0.0	2578.5	32.6	-2.8
AUG	23.	1.4	5.52	.6	73.	4.5	0.0	0.0	2575.8	28.9	-3.7
SEP	24.	1.4	3.81	.4	22.	1.3	0.0	0.0	2575.6	28.6	-.3
OCT	20.	1.2	3.88	.4	8.	.5	0.0	0.0	2575.8	28.9	.3
NOV	24.	1.4	1.84	.2	5.	.3	0.0	0.0	2576.5	29.8	.9
DEC	23.	1.4	.87	.1	5.	.3	0.0	0.0	2577.2	30.8	1.0
TOTAL		21.5	33.30	4.0		14.2	0.0	0.0			3.3
					REASONABLE MAXIMUM INFLOW CONDITIONS						
JAN	29.	1.8	.40	0.0	5.	.3	0.0	0.0	2575.9	29.0	1.5
FEB	40.	2.2	.47	.1	5.	.3	0.0	0.0	2577.2	30.8	1.8
MAR	52.	3.2	.85	.1	5.	.3	0.0	0.0	2579.1	33.6	2.8
APR	47.	2.8	1.52	.2	5.	.3	0.0	0.0	2580.6	35.9	2.3
MAY	49.	3.0	1.78	.2	13.	.8	.1	0.0	2581.8	37.8	1.9
JUN	59.	3.5	1.82	.2	13.	.8	2.5	0.0	2581.8	37.8	0.0
JUL	47.	2.9	3.42	.5	47.	2.9	0.0	0.0	2581.5	37.3	-.5
AUG	31.	1.9	4.12	.5	47.	2.9	0.0	0.0	2580.6	35.8	-1.5
SEP	32.	1.9	3.09	.4	15.	.9	0.0	0.0	2580.9	36.4	.6
OCT	28.	1.7	3.21	.4	5.	.3	0.0	0.0	2581.6	37.4	1.0
NOV	30.	1.8	1.15	.2	5.	.3	.9	0.0	2581.8	37.8	.4
DEC	29.	1.8	.77	.1	5.	.3	1.4	0.0	2581.8	37.8	0.0
TOTAL		28.5	22.60	2.9		10.4	4.9	0.0			10.3

HARRY STRUNK LAKE OPERATION ESTIMATES - 1982

MONTH	INFLOW MEAN CFS	INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS						
JAN	39.	2.4	.76	.1	2.	.1	1.4	0.0	2366.1	37.1	.8
FEB	54.	3.0	.89	.1	2.	.1	2.8	0.0	2366.1	37.1	0.0
MAR	65.	4.0	1.87	.3	2.	.1	3.6	0.0	2366.1	37.1	0.0
APR	57.	3.4	4.23	.7	2.	.1	2.6	0.0	2366.1	37.1	0.0
MAY	67.	4.1	4.07	.6	60.	3.7	0.0	0.0	2366.0	36.9	-.2
JUN	91.	5.4	5.02	.8	62.	3.7	.7	0.0	2366.1	37.1	.2
JUL	75.	4.6	8.41	1.1	228.	14.0	0.0	0.0	2359.6	26.6	-10.5
AUG	44.	2.7	7.42	.7	226.	13.9	0.0	0.0	2349.4	14.7	-11.9
SEP	34.	2.0	4.64	.3	106.	6.3	0.0	0.0	2343.8	10.1	-4.6
OCT	36.	2.2	4.52	.3	23.	1.4	0.0	0.0	2344.5	10.6	.5
NOV	40.	2.4	2.57	.2	2.	.1	0.0	0.0	2347.1	12.7	2.1
DEC	39.	2.4	1.10	.1	2.	.1	0.0	0.0	2349.6	14.9	2.2
TOTAL		38.6	45.50	5.3		43.6	11.1	0.0			-21.4
					MOST PROBABLE INFLOW CONDITIONS						
JAN	49.	3.0	.50	.1	2.	.1	2.0	0.0	2366.1	37.1	.8
FEB	70.	3.9	.75	.1	2.	.1	3.7	0.0	2366.1	37.1	0.0
MAR	81.	5.0	1.40	.2	2.	.1	4.7	0.0	2366.1	37.1	0.0
APR	72.	4.3	2.29	.4	2.	.1	3.8	0.0	2366.1	37.1	0.0
MAY	85.	5.2	2.41	.4	5.	.3	4.5	0.0	2366.1	37.1	0.0
JUN	114.	6.8	3.57	.6	8.	.5	5.7	0.0	2366.1	37.1	0.0
JUL	94.	5.8	5.95	.9	177.	10.9	0.0	0.0	2362.6	31.1	-6.0
AUG	57.	3.5	5.33	.6	205.	12.6	0.0	0.0	2355.7	21.4	-9.7
SEP	44.	2.6	3.51	.4	37.	2.2	0.0	0.0	2355.7	21.4	0.0
OCT	46.	2.8	4.14	.4	5.	.3	0.0	0.0	2357.4	23.5	2.1
NOV	52.	3.1	2.00	.2	2.	.1	0.0	0.0	2359.4	26.3	2.8
DEC	49.	3.0	.81	.1	2.	.1	0.0	0.0	2361.3	29.1	2.8
TOTAL		49.0	32.66	4.4		27.4	24.4	0.0			-7.2
					REASONABLE MAXIMUM INFLOW CONDITIONS						
JAN	73.	4.5	.25	0.0	2.	.1	3.6	0.0	2366.1	37.1	.8
FEB	104.	5.8	.40	.1	2.	.1	5.6	0.0	2366.1	37.1	0.0
MAR	120.	7.4	.49	.1	2.	.1	7.2	0.0	2366.1	37.1	0.0
APR	106.	6.3	.65	.1	2.	.1	6.1	0.0	2366.1	37.1	0.0
MAY	124.	7.6	.42	.1	2.	.1	7.4	0.0	2366.1	37.1	0.0
JUN	168.	10.0	.98	.2	2.	.1	9.7	0.0	2366.1	37.1	0.0
JUL	140.	8.6	5.13	.8	91.	5.6	2.2	0.0	2366.1	37.1	0.0
AUG	83.	5.1	4.19	.6	106.	6.5	0.0	0.0	2365.0	35.1	-2.0
SEP	64.	3.8	2.33	.4	10.	.6	.8	0.0	2366.1	37.1	2.0
OCT	67.	4.1	3.66	.6	2.	.1	3.4	0.0	2366.1	37.1	0.0
NOV	76.	4.5	.46	.1	2.	.1	4.3	0.0	2366.1	37.1	0.0
DEC	73.	4.5	.34	.1	2.	.1	4.3	0.0	2366.1	37.1	0.0
TOTAL		72.2	19.30	3.2		13.6	54.6	0.0			.8

KEITH SEBELIUS LAKE OPERATION ESTIMATES - 1982

MONTH	INFLOW MEAN CFS	INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS						
JAN	2.	.1	.95	0.0	2.	.1	0.0	0.0	2275.9	3.1	0.0
FEB	2.	.1	1.00	0.0	2.	.1	0.0	0.0	2275.9	3.1	0.0
MAR	7.	.4	1.98	.1	2.	.1	0.0	0.0	2276.4	3.3	.2
APR	3.	.2	4.34	.2	2.	.1	0.0	0.0	2276.2	3.2	-.1
MAY	7.	.4	4.10	.1	7.	.4	0.0	0.0	2275.9	3.1	-.1
JUN	24.	1.4	7.86	.3	10.	.6	0.0	0.0	2277.1	3.6	.5
JUL	13.	.8	8.77	.3	133.	8.2	0.0	7.2	2275.9	3.1	-.5
AUG	5.	.3	7.38	.2	128.	7.9	0.0	7.4	2274.9	2.7	-.4
SEP	5.	.3	6.12	.2	54.	3.2	0.0	3.1	2274.9	2.7	.0
OCT	3.	.2	4.66	.2	23.	1.4	0.0	1.4	2274.9	2.7	.0
NOV	2.	.1	2.62	.1	2.	.1	0.0	.1	2274.9	2.7	.0
DEC	2.	.1	1.22	0.0	2.	.1	0.0	0.0	2274.9	2.7	.0
TOTAL		4.4	51.00	1.7		22.3	0.0	19.2			-.4
					MOST PROBABLE INFLOW CONDITIONS						
JAN	2.	.1	.80	0.0	2.	.1	0.0	0.0	2275.9	3.1	0.0
FEB	5.	.3	.85	0.0	2.	.1	0.0	0.0	2276.4	3.3	.2
MAR	13.	.8	1.24	0.0	2.	.1	0.0	0.0	2278.0	4.0	.7
APR	8.	.5	2.78	.1	2.	.1	0.0	0.0	2278.6	4.3	.3
MAY	15.	.9	2.55	.1	2.	.1	0.0	0.0	2279.9	5.0	.7
JUN	52.	3.1	3.85	.2	2.	.1	0.0	0.0	2284.1	7.8	2.8
JUL	28.	1.7	5.97	.3	76.	4.7	0.0	0.0	2278.9	4.5	-3.3
AUG	11.	.7	5.89	.2	85.	5.2	0.0	4.5	2278.6	4.3	-.2
SEP	13.	.8	4.38	.2	20.	1.2	0.0	.6	2278.6	4.3	0.0
OCT	7.	.4	4.14	.2	7.	.4	0.0	.2	2278.6	4.3	0.0
NOV	3.	.2	2.12	.1	2.	.1	0.0	0.0	2278.6	4.3	0.0
DEC	3.	.2	1.03	0.0	2.	.1	0.0	0.0	2278.7	4.4	.1
TOTAL		9.7	35.60	1.4		12.3	0.0	5.3			1.3
					REASONABLE MAXIMUM INFLOW CONDITIONS						
JAN	7.	.4	.50	0.0	2.	.1	0.0	0.0	2276.6	3.4	.3
FEB	18.	1.0	.52	0.0	2.	.1	0.0	0.0	2278.6	4.3	.9
MAR	37.	2.3	.54	0.0	2.	.1	0.0	0.0	2282.3	6.5	2.2
APR	22.	1.3	1.43	.1	2.	.1	0.0	0.0	2283.8	7.6	1.1
MAY	42.	2.6	1.16	.1	2.	.1	0.0	0.0	2286.8	10.0	2.4
JUN	143.	8.5	2.52	.2	2.	.1	0.0	0.0	2294.2	18.2	8.2
JUL	78.	4.8	4.42	.5	15.	.9	0.0	0.0	2296.5	21.6	3.4
AUG	33.	2.0	5.23	.7	33.	2.0	0.0	0.0	2296.0	20.9	-.7
SEP	37.	2.2	3.07	.4	2.	.1	0.0	0.0	2297.1	22.6	1.7
OCT	20.	1.2	2.72	.4	2.	.1	0.0	0.0	2297.6	23.3	.7
NOV	7.	.4	1.25	.2	2.	.1	0.0	0.0	2297.6	23.4	.1
DEC	8.	.5	.64	.1	2.	.1	0.0	0.0	2297.8	23.7	.3
TOTAL		27.2	24.00	2.7		3.9	0.0	0.0			20.6

HARLAN COUNTY LAKE OPERATION ESTIMATES - 1982

MONTH	UNDEPLETED INFLOW 1000 AF	UPSTREAM DEPLETIONS 1000 AF	DEPLETED INFLOW MEAN CFS	DEPLETED INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RES SPILL 1000 AF	REQ SHORT 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RES CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS								
JAN	5.3	0.0	86.	5.3	.90	.9	10.	.6	0.0	0.0	1941.1	258.0	3.8
FEB	8.9	0.0	160.	8.9	.78	.8	11.	.6	0.0	0.0	1941.8	265.5	7.5
MAR	14.6	0.0	237.	14.6	1.74	1.8	10.	.6	0.0	0.0	1942.7	277.7	12.2
APR	12.9	0.0	217.	12.9	4.70	4.9	10.	.6	0.0	0.0	1943.3	285.1	7.4
MAY	16.8	0.0	273.	16.8	4.38	4.5	260.	16.0	0.0	0.0	1943.0	281.4	-3.7
JUN	26.3	0.0	442.	26.3	6.60	6.9	190.	11.3	0.0	0.0	1943.7	289.5	8.1
JUL	13.5	0.0	220.	13.5	9.71	9.8	707.	43.5	0.0	0.0	1940.4	249.7	-39.8
AUG	9.0	0.0	146.	9.0	8.41	7.3	794.	48.8	0.0	0.0	1936.0	202.6	-47.1
SEP	6.6	0.0	111.	6.6	5.56	4.4	257.	15.3	0.0	0.0	1934.6	189.5	-13.1
OCT	6.1	0.0	99.	6.1	4.52	3.5	0.	0.0	0.0	0.0	1934.9	192.1	2.6
NOV	5.3	0.0	89.	5.3	2.58	2.0	0.	0.0	0.0	0.0	1935.2	195.4	3.3
DEC	5.1	0.0	83.	5.1	1.12	.9	0.	0.0	0.0	0.0	1935.7	199.6	4.2
TOTAL	130.4	0.0		130.4	51.00	47.7		137.3	0.0	0.0			-54.6
					MOST PROBABLE INFLOW CONDITIONS								
JAN	9.6	0.0	156.	9.6	.65	.6	10.	.6	0.0	0.0	1941.5	262.6	8.4
FEB	16.0	0.0	288.	16.0	.61	.6	11.	.6	0.0	0.0	1942.7	277.4	14.8
MAR	26.5	0.0	431.	26.5	1.13	1.2	10.	.6	0.0	0.0	1944.7	302.1	24.7
APR	23.3	0.0	392.	23.3	1.31	1.4	10.	.6	3.6	0.0	1946.0	319.8	17.7
MAY	30.4	0.0	494.	30.4	3.27	3.6	24.	1.5	25.3	0.0	1946.0	319.8	0.0
JUN	47.5	0.0	798.	47.5	5.46	6.1	29.	1.7	39.7	0.0	1946.0	319.8	0.0
JUL	24.5	0.0	398.	24.5	7.70	8.5	382.	23.5	0.0	0.0	1945.4	312.3	-7.5
AUG	16.3	0.0	265.	16.3	6.01	6.5	468.	28.8	0.0	0.0	1944.0	293.3	-19.0
SEP	12.0	0.0	202.	12.0	4.47	4.7	128.	7.6	0.0	0.0	1944.0	293.0	-.3
OCT	11.1	0.0	181.	11.1	3.43	3.7	0.	0.0	0.0	0.0	1944.5	300.4	7.4
NOV	9.6	0.0	161.	9.6	1.55	1.7	0.	0.0	0.0	0.0	1945.1	308.3	7.9
DEC	9.3	0.0	151.	9.3	.71	.8	0.	0.0	0.0	0.0	1945.8	316.8	8.5
TOTAL	236.1	0.0		236.1	36.30	39.4		65.5	68.6	0.0			62.6
					REASONABLE MAXIMUM INFLOW CONDITIONS								
JAN	19.2	0.0	312.	19.2	0.00	0.0	10.	.6	0.0	0.0	1942.4	272.8	18.6
FEB	32.0	0.0	576.	32.0	.28	.3	11.	.6	0.0	0.0	1944.8	303.9	31.1
MAR	52.9	0.0	860.	52.9	.70	.8	10.	.6	35.6	0.0	1946.0	319.8	15.9
APR	46.6	0.0	783.	46.6	.21	.2	10.	.6	45.8	0.0	1946.0	319.8	0.0
MAY	60.6	0.0	986.	60.6	1.78	2.0	13.	.8	57.8	0.0	1946.0	319.8	0.0
JUN	95.0	0.0	1597.	95.0	1.58	1.8	13.	.8	92.4	0.0	1946.0	319.8	0.0
JUL	48.9	0.0	795.	48.9	6.53	7.3	99.	6.1	35.5	0.0	1946.0	319.8	0.0
AUG	32.6	0.0	530.	32.6	3.43	3.8	104.	6.4	22.4	0.0	1946.0	319.8	0.0
SEP	24.0	0.0	403.	24.0	3.84	4.3	25.	1.5	18.2	0.0	1946.0	319.8	0.0
OCT	22.1	0.0	359.	22.1	2.28	2.5	0.	0.0	19.6	0.0	1946.0	319.8	0.0
NOV	19.3	0.0	324.	19.3	1.03	1.1	0.	0.0	18.2	0.0	1946.0	319.8	0.0
DEC	18.6	0.0	303.	18.6	.40	.4	0.	0.0	18.2	0.0	1946.0	319.8	0.0
TOTAL	471.8	0.0		471.8	22.06	24.5		18.0	363.7	0.0			65.6

LOVEWELL RESERVOIR OPERATION ESTIMATES - 1982

MONTH	WHITE ROCK CREEK INFLOW 1000 AF	COURTLAND CANAL INFLOW 1000 AF	TOTAL INFLOW MEAN CFS	TOTAL INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RES SPILL 1000 AF	REQ SHORT 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RES CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS								
JAN	.1	0.0	2.	.1	.77	.2	0.	0.0	0.0	0.0	1580.8	36.5	-.1
FEB	.4	0.0	7.	.4	.75	.2	0.	0.0	0.0	0.0	1580.8	36.7	.2
MAR	.5	1.2	28.	1.7	1.69	.4	0.	0.0	0.0	0.0	1581.3	38.0	1.3
APR	.5	1.2	29.	1.7	3.79	.9	0.	0.0	0.0	0.0	1581.6	38.8	.8
MAY	1.3	8.6	161.	9.9	3.55	.9	99.	6.1	0.0	0.0	1582.6	41.7	2.9
JUN	2.7	4.6	123.	7.3	5.84	1.4	103.	6.1	0.0	0.0	1582.5	41.5	-.2
JUL	1.8	15.0	273.	16.8	7.75	1.9	294.	18.1	0.0	0.0	1581.4	38.3	-3.2
AUG	1.0	15.0	260.	16.0	6.09	1.3	343.	21.1	0.0	0.0	1579.0	31.9	-6.4
SEP	.9	1.2	35.	2.1	5.15	1.0	155.	9.2	0.0	0.0	1575.4	23.8	-8.1
OCT	.5	1.2	28.	1.7	3.45	.6	0.	0.0	0.0	0.0	1576.0	24.9	1.1
NOV	.2	1.2	24.	1.4	2.37	.4	0.	0.0	0.0	0.0	1576.4	25.9	1.0
DEC	.1	0.0	2.	.1	.96	.2	0.	0.0	0.0	0.0	1576.4	25.8	-.1
TOTAL	10.0	49.2		59.2	42.16	9.4		60.6	0.0	0.0			-10.8
					MOST PROBABLE INFLOW CONDITIONS								
JAN	.3	0.0	5.	.3	.50	.1	0.	0.0	0.0	0.0	1580.9	36.8	.2
FEB	1.1	0.0	20.	1.1	.40	.1	0.	0.0	0.0	0.0	1581.2	37.8	1.0
MAR	1.2	0.0	20.	1.2	.92	.2	0.	0.0	0.0	0.0	1581.6	38.8	1.0
APR	1.3	0.0	22.	1.3	1.97	.5	0.	0.0	0.0	0.0	1581.9	39.6	.8
MAY	3.5	1.2	76.	4.7	1.58	.4	34.	2.1	.1	0.0	1582.6	41.7	2.1
JUN	7.0	1.2	138.	8.2	1.75	.4	35.	2.1	5.7	0.0	1582.6	41.7	0.0
JUL	4.6	4.2	143.	8.8	5.22	1.2	283.	17.4	0.0	0.0	1579.0	31.9	-9.8
AUG	2.5	6.6	148.	9.1	4.22	.8	286.	17.6	0.0	0.0	1574.8	22.6	-9.3
SEP	2.4	3.0	91.	5.4	3.36	.6	76.	4.5	0.0	0.0	1575.0	22.9	.3
OCT	1.4	1.2	42.	2.6	2.09	.4	0.	0.0	0.0	0.0	1576.1	25.1	2.2
NOV	.4	1.2	27.	1.6	1.41	.3	0.	0.0	0.0	0.0	1576.6	26.4	1.3
DEC	.3	0.0	5.	.3	.43	.1	0.	0.0	0.0	0.0	1576.7	26.6	.2
TOTAL	26.0	18.6		44.6	23.85	5.1		43.7	5.8	0.0			-10.0
					REASONABLE MAXIMUM INFLOW CONDITIONS								
JAN	.8	0.0	13.	.8	.16	0.0	0.	0.0	0.0	0.0	1581.1	37.4	.8
FEB	2.5	0.0	45.	2.5	.26	.1	0.	0.0	0.0	0.0	1582.0	39.8	2.4
MAR	3.0	0.0	49.	3.0	.35	.1	0.	0.0	1.0	0.0	1582.6	41.7	1.9
APR	3.1	0.0	52.	3.1	.44	.1	0.	0.0	3.0	0.0	1582.6	41.7	0.0
MAY	8.6	1.2	159.	9.8	.54	.1	15.	.9	8.8	0.0	1582.6	41.7	0.0
JUN	16.9	1.2	304.	18.1	-1.08	-.3	20.	1.2	17.2	0.0	1582.6	41.7	0.0
JUL	11.1	1.2	200.	12.3	4.30	1.1	138.	8.5	2.7	0.0	1582.6	41.7	0.0
AUG	6.1	1.2	119.	7.3	3.06	.7	138.	8.5	0.0	0.0	1582.0	39.8	-1.9
SEP	5.8	0.0	97.	5.8	1.78	.4	35.	2.1	1.4	0.0	1582.6	41.7	1.9
OCT	3.4	0.0	55.	3.4	1.49	.4	0.	0.0	3.0	0.0	1582.6	41.7	0.0
NOV	1.1	0.0	18.	1.1	1.00	.2	0.	0.0	.9	0.0	1582.6	41.7	0.0
DEC	.8	0.0	13.	.8	-.15	0.0	0.	0.0	.8	0.0	1582.6	41.7	0.0
TOTAL	63.2	4.8		68.0	12.15	2.9		21.2	38.8	0.0			5.1

KIRWIN RESERVOIR OPERATION ESTIMATES - 1982

MONTH	INFLOW MEAN CFS	INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
REASONABLE MINIMUM INFLOW CONDITIONS											
JAN	3.	.2	.91	.1	0.	0.0	0.0	0.0	1696.3	9.2	.1
FEB	11.	.6	1.04	.1	0.	0.0	0.0	0.0	1696.9	9.7	.5
MAR	18.	1.1	1.79	.2	0.	0.0	0.0	0.0	1697.7	10.6	.9
APR	15.	.9	4.60	.4	0.	0.0	0.0	0.0	1698.2	11.1	.5
MAY	31.	1.9	4.77	.4	31.	1.9	0.0	0.0	1697.8	10.7	-.4
JUN	54.	3.2	6.32	.6	32.	1.9	0.0	0.0	1698.5	11.4	.7
JUL	24.	1.5	8.80	.8	91.	5.6	0.0	3.3	1697.0	9.8	-1.6
AUG	20.	1.2	7.74	.7	106.	6.5	0.0	6.0	1697.0	9.8	.0
SEP	12.	.7	5.66	.5	47.	2.8	0.0	2.6	1697.0	9.8	.0
OCT	8.	.5	4.61	.4	0.	0.0	0.0	0.0	1697.1	9.9	.1
NOV	5.	.3	2.54	.2	0.	0.0	0.0	0.0	1697.2	10.0	.1
DEC	3.	.2	1.22	.1	0.	0.0	0.0	0.0	1697.3	10.1	.1
TOTAL		12.3	50.00	4.5		18.7	0.0	11.9			1.0
MOST PROBABLE INFLOW CONDITIONS											
JAN	8.	.5	.73	.1	0.	0.0	0.0	0.0	1696.6	9.5	.4
FEB	25.	1.4	.77	.1	0.	0.0	0.0	0.0	1697.9	10.8	1.3
MAR	41.	2.5	1.04	.1	0.	0.0	0.0	0.0	1700.0	13.2	2.4
APR	37.	2.2	1.89	.2	0.	0.0	0.0	0.0	1701.5	15.2	2.0
MAY	73.	4.5	3.60	.4	10.	.6	0.0	0.0	1703.9	18.7	3.5
JUN	126.	7.5	4.65	.6	10.	.6	0.0	0.0	1707.7	25.0	6.3
JUL	60.	3.7	6.33	.9	81.	5.0	0.0	0.0	1706.5	22.8	-2.2
AUG	46.	2.8	5.56	.8	83.	5.1	0.0	0.0	1704.6	19.7	-3.1
SEP	27.	1.6	4.25	.5	22.	1.3	0.0	0.0	1704.4	19.5	-.2
OCT	20.	1.2	3.59	.5	0.	0.0	0.0	0.0	1704.9	20.2	.7
NOV	10.	.6	1.85	.2	0.	0.0	0.0	0.0	1705.1	20.6	.4
DEC	10.	.6	.74	.1	0.	0.0	0.0	0.0	1705.4	21.1	.5
TOTAL		29.1	35.00	4.5		12.6	0.0	0.0			12.0
REASONABLE MAXIMUM INFLOW CONDITIONS											
JAN	21.	1.3	.45	0.0	0.	0.0	0.0	0.0	1697.6	10.4	1.3
FEB	61.	3.4	.50	0.0	0.	0.0	0.0	0.0	1700.4	13.8	3.4
MAR	102.	6.3	.56	.1	0.	0.0	0.0	0.0	1704.8	20.0	6.2
APR	91.	5.4	.53	.1	0.	0.0	0.0	0.0	1707.8	25.3	5.3
MAY	181.	11.1	1.68	.3	5.	.3	0.0	0.0	1712.7	35.8	10.5
JUN	309.	18.4	1.66	.4	7.	.4	0.0	0.0	1718.5	53.4	17.6
JUL	150.	9.2	5.47	1.6	50.	3.1	0.0	0.0	1719.7	57.9	4.5
AUG	111.	6.8	4.67	1.5	52.	3.2	0.0	0.0	1720.3	60.0	2.1
SEP	66.	3.9	2.75	.9	13.	.8	0.0	0.0	1720.9	62.2	2.2
OCT	49.	3.0	2.27	.7	0.	0.0	0.0	0.0	1721.4	64.5	2.3
NOV	25.	1.5	1.02	.3	0.	0.0	0.0	0.0	1721.7	65.7	1.2
DEC	23.	1.4	.54	.2	0.	0.0	0.0	0.0	1722.0	66.9	1.2
TOTAL		71.7	22.10	6.1		7.8	0.0	0.0			57.8

WEBSTER RESERVOIR OPERATION ESTIMATES - 1982

MONTH	INFLOW MEAN CFS	INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS						
JAN	5.	.3	.96	.1	0.	0.0	0.0	0.0	1865.9	11.9	.2
FEB	9.	.5	1.11	.1	0.	0.0	0.0	0.0	1866.2	12.3	.4
MAR	15.	.9	2.08	.2	0.	0.0	0.0	0.0	1866.7	13.0	.7
APR	15.	.9	4.92	.6	0.	0.0	0.0	0.0	1866.9	13.3	.3
MAY	24.	1.5	4.75	.6	37.	2.3	0.0	0.0	1865.9	11.9	-1.4
JUN	37.	2.2	7.50	.8	55.	3.3	0.0	0.0	1864.4	10.0	-1.9
JUL	24.	1.5	9.04	.8	106.	6.5	0.0	1.1	1860.0	5.3	-4.7
AUG	15.	.9	8.08	.6	117.	7.2	0.0	6.9	1860.0	5.3	.0
SEP	7.	.4	6.70	.5	67.	4.0	0.0	4.0	1859.8	5.2	-.1
OCT	7.	.4	4.71	.3	0.	0.0	0.0	0.0	1860.0	5.3	.1
NOV	3.	.2	2.45	.2	0.	0.0	0.0	0.0	1860.0	5.3	.0
DEC	5.	.3	1.20	.1	0.	0.0	0.0	0.0	1860.2	5.5	.2
TOTAL		10.0	53.50	4.9		23.3	0.0	12.0			-6.2
					MOST PROBABLE INFLOW CONDITIONS						
JAN	11.	.7	.67	.1	0.	0.0	0.0	0.0	1866.2	12.3	.6
FEB	22.	1.2	.81	.1	0.	0.0	0.0	0.0	1867.0	13.4	1.1
MAR	34.	2.1	1.48	.2	0.	0.0	0.0	0.0	1868.2	15.3	1.9
APR	37.	2.2	2.72	.4	0.	0.0	0.0	0.0	1869.4	17.1	1.8
MAY	62.	3.8	3.13	.4	10.	.6	0.0	0.0	1871.0	19.9	2.8
JUN	94.	5.6	4.40	.7	12.	.7	0.0	0.0	1873.3	24.1	4.2
JUL	62.	3.8	7.02	1.1	94.	5.8	0.0	0.0	1871.6	21.0	-3.1
AUG	37.	2.3	5.72	.8	94.	5.8	0.0	0.0	1869.1	16.7	-4.3
SEP	18.	1.1	4.69	.6	29.	1.7	0.0	0.0	1868.4	15.5	-1.2
OCT	18.	1.1	3.37	.4	0.	0.0	0.0	0.0	1868.8	16.2	.7
NOV	10.	.6	1.61	.2	0.	0.0	0.0	0.0	1869.1	16.6	.4
DEC	11.	.7	.78	.1	0.	0.0	0.0	0.0	1869.4	17.2	.6
TOTAL		25.2	36.40	5.1		14.6	0.0	0.0			5.5
					REASONABLE MAXIMUM INFLOW CONDITIONS						
JAN	36.	2.2	.53	.1	0.	0.0	0.0	0.0	1867.2	13.8	2.1
FEB	70.	3.9	.48	.1	0.	0.0	0.0	0.0	1869.7	17.6	3.8
MAR	111.	6.8	.70	.1	0.	0.0	0.0	0.0	1873.4	24.3	6.7
APR	116.	6.9	1.00	.2	0.	0.0	0.0	0.0	1876.7	31.0	6.7
MAY	197.	12.1	1.74	.4	0.	0.0	0.0	0.0	1881.5	42.7	11.7
JUN	296.	17.6	.72	.2	0.	0.0	0.0	0.0	1887.5	60.1	17.4
JUL	198.	12.2	5.63	1.6	44.	2.7	0.0	0.0	1889.9	68.0	7.9
AUG	117.	7.2	4.03	1.2	47.	2.9	0.0	0.0	1890.7	71.1	3.1
SEP	59.	3.5	3.75	1.1	0.	0.0	0.0	0.0	1891.4	73.5	2.4
OCT	57.	3.5	2.83	.9	0.	0.0	0.0	0.0	1892.1	76.1	2.6
NOV	34.	2.0	.99	.3	0.	0.0	.4	0.0	1892.4	77.4	1.3
DEC	34.	2.1	.60	.2	0.	0.0	1.9	0.0	1892.4	77.4	0.0
TOTAL		80.0	23.00	6.4		5.6	2.3	0.0			65.7

WACONDA LAKE OPERATION ESTIMATES - 1982

MONTH	UNDEPLETED INFLOW 1000 AF	UPSTREAM DEPLETIONS 1000 AF	DEPLETED INFLOW MEAN CFS	DEPLETED INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RES SPILL 1000 AF	REQ SHORT 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RES CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS								
JAN	2.3	0.0	37.	2.3	.89	.9	11.	.7	0.0	0.0	1453.7	218.3	.7
FEB	2.8	0.0	50.	2.8	1.00	1.0	32.	1.8	0.0	0.0	1453.7	218.3	0.0
MAR	6.2	0.0	101.	6.2	1.83	1.8	11.	.7	0.0	0.0	1454.0	222.0	3.7
APR	4.5	0.0	76.	4.5	4.55	4.5	2.	.1	0.0	0.0	1454.0	221.9	-.1
MAY	7.6	0.0	124.	7.6	4.48	4.5	2.	.1	0.0	0.0	1454.2	224.9	3.0
JUN	11.2	0.0	188.	11.2	6.57	6.6	35.	2.1	0.0	0.0	1454.5	227.4	2.5
JUL	6.0	0.0	98.	6.0	8.05	8.0	99.	6.1	0.0	0.0	1453.8	219.3	-8.1
AUG	3.6	0.0	59.	3.6	8.50	8.2	99.	6.1	0.0	0.0	1452.9	208.6	-10.7
SEP	5.3	0.0	89.	5.3	6.19	5.9	35.	2.1	0.0	0.0	1452.6	205.9	-2.7
OCT	3.3	0.0	54.	3.3	4.42	4.2	2.	.1	0.0	0.0	1452.5	204.9	-1.0
NOV	2.0	0.0	34.	2.0	2.46	2.3	2.	.1	0.0	0.0	1452.5	204.5	-.4
DEC	1.7	0.0	28.	1.7	1.16	1.1	11.	.7	0.0	0.0	1452.5	204.4	-.1
TOTAL	56.5	0.0		56.5	50.10	49.0		20.7	0.0	0.0			-13.2
					MOST PROBABLE INFLOW CONDITIONS								
JAN	5.3	0.0	86.	5.3	.53	.5	11.	.7	0.0	0.0	1454.0	221.7	4.1
FEB	6.5	0.0	117.	6.5	.63	.6	106.	5.9	0.0	0.0	1454.0	221.7	0.0
MAR	14.4	0.0	234.	14.4	.84	.9	11.	.7	0.0	0.0	1455.0	234.5	12.8
APR	10.3	0.0	173.	10.3	2.90	3.0	2.	.1	.2	0.0	1455.6	241.5	7.0
MAY	17.7	0.0	288.	17.7	2.96	3.1	2.	.1	14.5	0.0	1455.6	241.5	0.0
JUN	26.0	0.0	437.	26.0	3.32	3.5	25.	1.5	21.0	0.0	1455.6	241.5	0.0
JUL	13.9	0.0	226.	13.9	6.05	6.4	70.	4.3	3.2	0.0	1455.6	241.5	0.0
AUG	8.3	0.0	135.	8.3	4.46	4.7	70.	4.3	0.0	0.0	1455.5	240.8	-.7
SEP	12.3	0.0	207.	12.3	3.96	4.1	301.	17.9	0.0	0.0	1454.8	231.1	-9.7
OCT	7.6	0.0	124.	7.6	3.24	3.2	299.	18.4	0.0	0.0	1453.6	217.1	-14.0
NOV	4.7	0.0	79.	4.7	1.85	1.8	301.	17.9	0.0	0.0	1452.3	202.1	-15.0
DEC	3.9	0.0	63.	3.9	.76	.7	52.	3.2	0.0	0.0	1452.3	202.1	0.0
TOTAL	130.9	0.0		130.9	31.50	32.5		75.0	38.9	0.0			-15.5
					REASONABLE MAXIMUM INFLOW CONDITIONS								
JAN	14.3	0.0	233.	14.3	.36	.4	228.	14.0	0.0	0.0	1453.6	217.5	-.1
FEB	17.6	0.0	317.	17.6	.21	.2	313.	17.4	0.0	0.0	1453.6	217.5	0.0
MAR	39.0	0.0	634.	39.0	.34	.3	299.	18.4	0.0	0.0	1455.3	237.8	20.3
APR	28.1	0.0	472.	28.1	1.39	1.5	301.	17.9	5.0	0.0	1455.6	241.5	3.7
MAY	48.1	0.0	782.	48.1	.87	.9	2.	.1	47.1	0.0	1455.6	241.5	0.0
JUN	70.7	0.0	1188.	70.7	-.20	-.2	2.	.1	70.8	0.0	1455.6	241.5	0.0
JUL	37.6	0.0	612.	37.6	4.46	4.7	2.	.1	32.8	0.0	1455.6	241.5	0.0
AUG	22.5	0.0	366.	22.5	3.27	3.4	2.	.1	19.0	0.0	1455.6	241.5	0.0
SEP	33.3	0.0	560.	33.3	2.29	2.4	2.	.1	30.8	0.0	1455.6	241.5	0.0
OCT	20.8	0.0	338.	20.8	2.41	2.5	298.	18.3	0.0	0.0	1455.6	241.5	0.0
NOV	12.7	0.0	213.	12.7	.92	1.0	301.	17.9	0.0	0.0	1455.1	235.3	-6.2
DEC	10.5	0.0	171.	10.5	.38	.4	164.	10.1	0.0	0.0	1455.1	235.3	0.0
TOTAL	355.2	0.0		355.2	16.70	17.5		114.5	205.5	0.0			17.7

CEDAR BLUFF RESERVOIR OPERATION ESTIMATES - 1982

MONTH	INFLOW MEAN CFS	INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS						
JAN	2.	.1	1.23	.2	8.	.5.	0.0	.2	2100.1	21.2	-.4
FEB	5.	.3	1.39	.2	7.	.4	0.0	.1	2100.0	21.0	-.2
MAR	13.	.8	2.48	.3	10.	.6	0.0	.3	2100.1	21.2	.2
APR	12.	.7	5.30	.7	7.	.4	0.0	.1	2100.0	20.9	-.3
MAY	28.	1.7	5.10	.7	44.	2.7	0.0	2.4	2100.4	21.6	.7
JUN	45.	2.7	7.76	1.1	44.	2.6	0.0	2.3	2101.2	22.9	1.3
JUL	36.	2.2	9.16	1.3	111.	6.8	0.0	6.2	2101.4	23.2	.3
AUG	23.	1.4	8.88	1.2	115.	7.1	0.0	6.5	2101.1	22.8	-.4
SEP	13.	.8	6.41	.9	74.	4.4	0.0	4.1	2100.9	22.4	-.4
OCT	8.	.5	4.93	.7	29.	1.8	0.0	1.5	2100.6	21.9	-.5
NOV	3.	.2	2.90	.4	7.	.4	0.0	.1	2100.3	21.4	-.5
DEC	2.	.1	1.46	.2	7.	.4	0.0	.1	2100.0	21.0	-.4
TOTAL		11.5	57.00	7.9		28.1	0.0	23.9			-.6
					MOST PROBABLE INFLOW CONDITIONS						
JAN	5.	.3	1.08	.1	8.	.5	0.0	.2	2100.3	21.5	-.1
FEB	14.	.8	1.13	.2	7.	.4	0.0	.1	2100.5	21.8	.3
MAR	36.	2.2	1.72	.2	10.	.6	0.0	.3	2101.5	23.5	1.7
APR	35.	2.1	3.77	.5	7.	.4	0.0	.1	2102.3	24.8	1.3
MAY	78.	4.8	3.22	.5	21.	1.3	0.0	1.0	2104.5	28.8	4.0
JUN	131.	7.8	4.29	.7	22.	1.3	0.0	.7	2107.8	35.3	6.5
JUL	101.	6.2	7.39	1.3	93.	5.7	0.0	.8	2107.8	35.3	0.0
AUG	65.	4.0	6.04	1.1	107.	6.6	0.0	3.7	2107.8	35.3	0.0
SEP	37.	2.2	4.48	.8	35.	2.1	0.0	.7	2107.8	35.3	0.0
OCT	23.	1.4	3.73	.7	21.	1.3	0.0	1.0	2108.0	35.7	.4
NOV	7.	.4	2.46	.4	7.	.4	0.0	.1	2107.8	35.4	-.3
DEC	7.	.4	1.20	.2	7.	.4	0.0	.1	2107.8	35.3	-.1
TOTAL		32.6	40.51	6.7		21.0	0.0	8.8			13.7
					REASONABLE MAXIMUM INFLOW CONDITIONS						
JAN	16.	1.0	.92	.1	8.	.5	0.0	0.0	2100.6	22.0	.4
FEB	43.	2.4	.87	.1	7.	.4	0.0	0.0	2101.8	23.9	1.9
MAR	111.	6.8	1.20	.2	10.	.6	0.0	0.0	2105.1	29.9	6.0
APR	111.	6.6	2.32	.4	7.	.4	0.0	0.0	2108.0	35.7	5.8
MAY	244.	15.0	2.02	.4	18.	1.1	0.0	0.0	2113.8	49.2	13.5
JUN	408.	24.3	1.25	.3	17.	1.0	0.0	0.0	2121.6	72.2	23.0
JUL	316.	19.4	5.22	1.6	62.	3.8	0.0	0.0	2125.4	86.2	14.0
AUG	203.	12.5	4.25	1.4	70.	4.3	0.0	0.0	2127.1	93.0	6.8
SEP	118.	7.0	3.86	1.3	24.	1.4	0.0	0.0	2128.1	97.3	4.3
OCT	73.	4.5	2.56	.9	16.	1.0	0.0	0.0	2128.7	99.9	2.6
NOV	24.	1.4	1.62	.6	13.	.8	0.0	0.0	2128.7	99.9	0.0
DEC	20.	1.2	.92	.3	13.	.8	0.0	0.0	2128.8	100.0	.1
TOTAL		102.1	27.01	7.6		16.1	0.0	0.0			78.4

TABLE 5

FLOOD DAMAGES PREVENTED BY KANSAS RIVER PROJECTS RESERVOIRS

BONNY

Year	Damages Prevented	Cumulative Total
1951	$ 293,000	$ 293,000
1953	135,000	428,000
1957	1,050,000	1,478,000
1960	169,000	1,647,000
1965	273,000	1,920,000
1967	42,000	1,962,000
1969	200,000	2,162,000

SWANSON

Year	Damages Prevented	Cumulative Total
1957	$ 233,000	$ 233,000
1960	900,000	1,133,000
1962	126,000	1,259,000
1964	50,000	1,309,000
1965	477,000	1,786,000
1967	182,000	1,968,000
1969	1,000	1,969,000

ENDERS

Year	Damages Prevented	Cumulative Total
1951	$ 220,000	$ 220,000
1956	104,000	324,000
1960	412,000	736,000
1962	37,000	773,000
1965	137,000	910,000
1967	42,000	952,000
1969	1,000	953,000

HUGH BUTLER

Year	Damages Prevented	Cumulative Total
1962	$ 2,000	$ 2,000
1965	137,000	139,000
1967	42,000	181,000

HARRY STRUNK

Year	Damages Prevented	Cumulative Total
1951	$ 14,000	$ 14,000
1957	5,000	19,000
1960	198,000	217,000
1962	29,000	246,000
1967	129,000	375,000
1969	6,000	381,000

NORTON

Year	Damages Prevented	Cumulative Total
1966	$ 132,000	$ 132,000
1967	885,000	1,017,000
1972	498,000	1,515,000

HARLAN COUNTY

Year	Damages Prevented	Cumulative Total
1957	$1,045,000	$ 1,045,000
1960	4,853,000	5,898,000
1961	255,000	6,153,000
1962	45,000	6,198,000
1964	182,000	6,380,000
1965	60,000	6,440,000
1966	1,658,000	8,098,000
1967	3,539,000	11,637,000
1969	14,000	11,651,000
1971	64,000	11,715,000
1973	1,310,000	13,025,000
1974	1,000	13,026,000
1975	200,000	13,226,000

LOVEWELL

Year	Damages Prevented	Cumulative Total
1957	$ 349,000	$ 349,000
1960	178,000	527,000
1961	165,000	692,000
1962	5,000	697,000
1971	9,000	706,000
1973	1,728,000	2,434,000
1975	98,000	2,532,000
1978	25,000	2,557,000
1979	13,000	2,570,000
1981	8,000	2,578,000

KIRWIN

Year	Damages Prevented	Cumulative Total
1957	$ 522,000	$ 522,000
1958	10,000	532,000
1960	499,000	1,031,000
1961	1,000	1,032,000
1962	1,000	1,033,000
1964	34,000	1,067,000
1965	325,000	1,392,000
1967	191,000	1,583,000
1968	44,000	1,627,000
1969	2,000	1,629,000
1971	3,000	1,632,000
1973	40,000	1,672,000
1975	618,000	2,290,000
1978	4,000	2,294,000
1979	35,000	2,329,000

WEBSTER

Year	Damages Prevented	Cumulative Total
1957	$ 326,000	$ 326,000
1958	114,000	440,000
1960	1,018,000	1,458,000
1961	1,000	1,459,000
1962	1,000	1,460,000
1964	17,000	1,477,000
1965	325,000	1,802,000
1967	85,000	1,887,000
1968	2,000	1,889,000
1969	1,000	1,890,000
1971	3,000	1,893,000
1973	54,000	1,947,000
1975	885,000	2,832,000
1978	2,000	2,834,000
1979	16,000	2,850,000

WACONDA

Year	Damages Prevented	Cumulative Total
1968	$ 280,000	$ 280,000
1969	606,000	886,000
1971	9,000	895,000
1973	3,797,000	4,692,000
1974	1,000	4,693,000
1975	967,000	5,660,000
1978	11,000	5,671,000
1979	959,000	6,630,000
1981	24,000	6,654,000

CEDAR BLUFF

Year	Damages Prevented	Cumulative Total
1951	$ 597,000	$ 597,000
1955	357,000	954,000
1956	19,000	973,000
1957	4,812,000	5,785,000
1958	829,000	6,614,000
1960	1,573,000	8,187,000
1961	101,000	8,288,000
1962	1,000	8,289,000
1964	17,000	8,306,000
1965	38,000	8,344,000
1967	42,000	8,386,000
1969	1,000	8,387,000
1971	8,000	8,395,000
1973	536,000	8,931,000
1975	11,000	8,942,000
1979	2,000	8,944,000
1981	1,000	8,945,000

PROJECT TOTALS

Year	Damages Prevented	Cumulative Total
1951	$1,124,000	$ 1,124,000
1953	135,000	1,259,000
1955	357,000	1,616,000
1956	123,000	1,739,000
1957	8,342,000	10,081,000
1958	953,000	11,034,000
1960	9,800,000	20,834,000
1961	523,000	21,357,000
1962	247,000	21,604,000
1964	300,000	21,904,000
1965	1,772,000	23,676,000
1966	1,790,000	25,466,000
1967	5,179,000	30,645,000
1968	326,000	30,971,000
1969	832,000	31,803,000
1971	96,000	31,899,000
1972	498,000	32,397,000
1973	7,465,000	39,862,000
1974	2,000	39,864,000
1975	2,779,000	42,643,000
1978	42,000	42,685,000
1979	1,025,000	43,710,000
1981	33,000	43,743,000

NOTE.--Construction cost of storage dams -- $208,954,130.

TABLE 6
WATER DIVERTED IN 1981 AND THE
ESTIMATED DIVERSION FOR 1982
(Units - Acre-Feet)

Irrigation District and Canal	1981 Irrigation Operations From	To	10-Year Average Diversion (1971-80)	1981 Diversion	Estimated Diversion in 1982
Mirage Flats Irrigation District					
Mirage Flats Canal	6/26	9/10	16,653	15,473	14,000
Ainsworth Irrigation District					
Ainsworth Canal	4/28	9/29	69,833	67,682	80,000
Sargent Irrigation District					
Sargent Canal	5/20	10/02	27,302	16,808	29,000
Farwell Irrigation District					
Farwell Canal	5/19	9/05	92,922	80,171	95,000
Frenchman Valley Irrigation District					
Culbertson Canal	3/23	9/01	17,722	12,579	12,000
H & RW Irrigation District					
Culbertson Extension Canal	5/01	9/02	23,875	18,983	17,000
Frenchman-Cambridge Irrigation District					
Meeker-Driftwood Canal	6/17	9/18	35,858	29,951	31,000
Red Willow Canal	6/24	9/17	9,406	5,133	9,000
Bartley Canal	6/22	9/15	11,816	7,858	11,000
Cambridge Canal	6/17	9/14	34,005	20,511	31,000
Total Frenchman-Cambridge Irrigation District			91,085	63,453	82,000
Almena Irrigation District					
Almena Canal	No irrigation in 1981		3,929	0	0
Bostwick Irrigation District in Nebraska					
Franklin Canal	6/26	8/29	28,489	15,956	24,000
Naponee Canal	6/21	8,24	3,498	1,676	3,300
Franklin Pump Canal	6/29	8/23	3,383	1,075	3,700
Superior Canal	6/24	8/29	14,500	8,580	13,000
Courtland Canal (Nebraska)	3/23	9/09	2,033	629	2,300
Total Bostwick Irrigation District in Nebraska			51,903	27,916	46,300
Kansas-Bostwick Irrigation District					
Courtland Canal above Lovewell	3/28	9/18	25,278	18,597	25,000
Courtland Canal below Lovewell	5/20	9/08	46,186	34,064	50,000
Total Kansas-Bostwick Irrigation District			71,464	52,661	75,000
Kirwin Irrigation District					
Kirwin Canal	No irrigation in 1981		19,230	0	0
Webster Irrigation District					
Osborne Canal	No irrigation in 1981		10,695	0	6,500
Cedar Bluff Irrigation District					
Cedar Bluff Canal	No irrigation in 1981		12,029	0	0
TOTAL			508,642	355,726	456,800

EXHIBIT 1A

BOX BUTTE RESERVOIR OPERATION

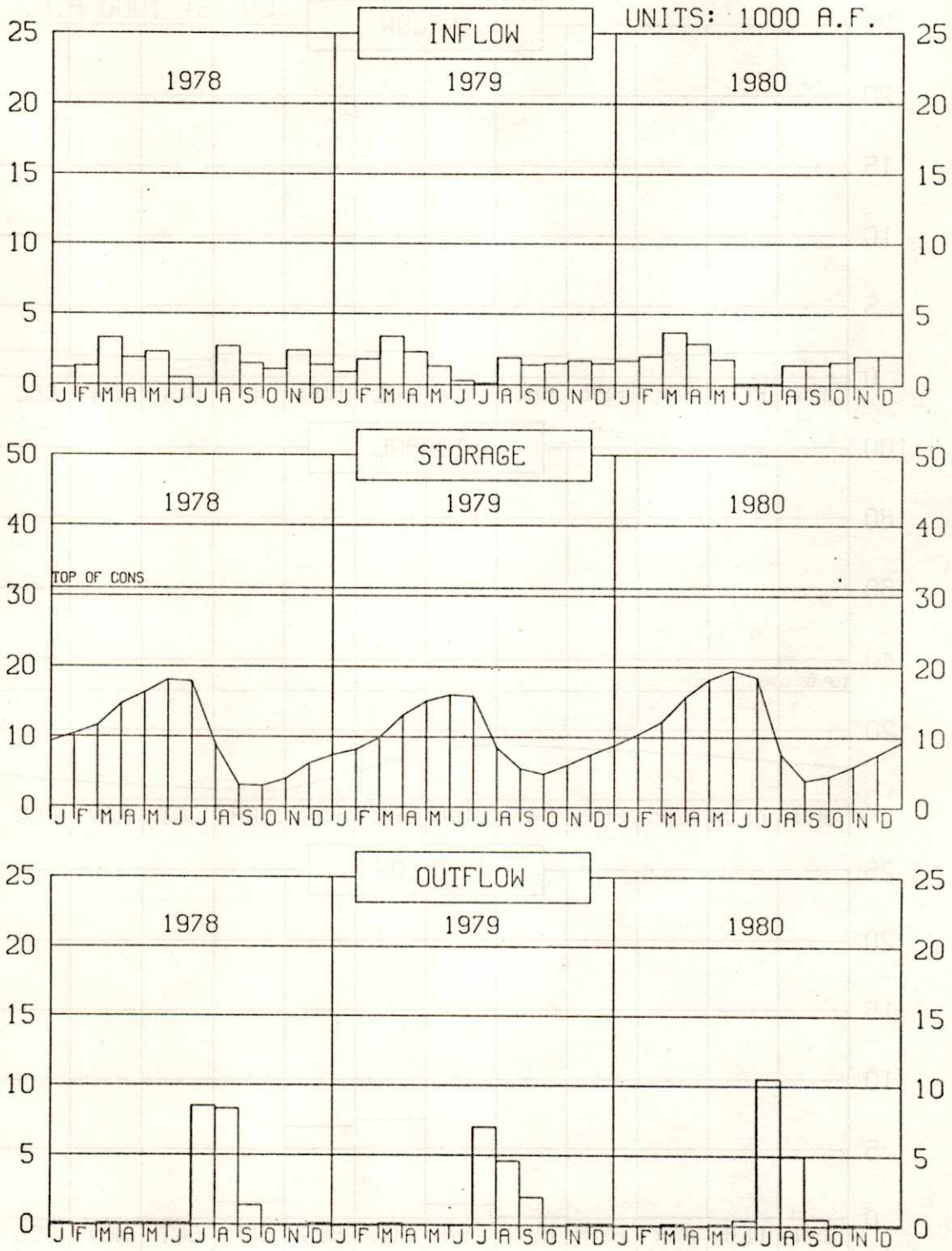


EXHIBIT 1B

BOX BUTTE RESERVOIR 1981 OPERATION

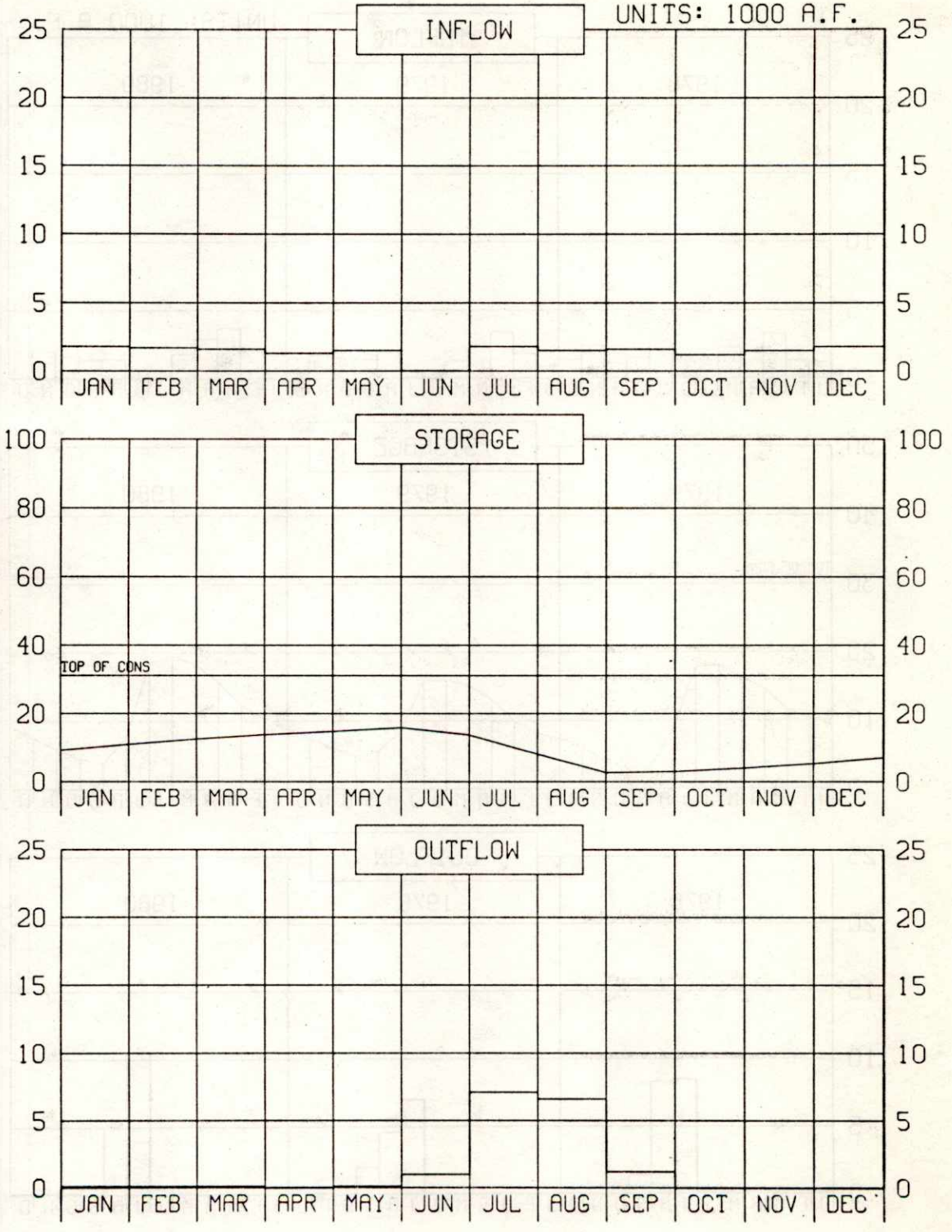


EXHIBIT 1C

BOX BUTTE RESERVOIR

CAL YEAR 1982 OPERATION PLAN

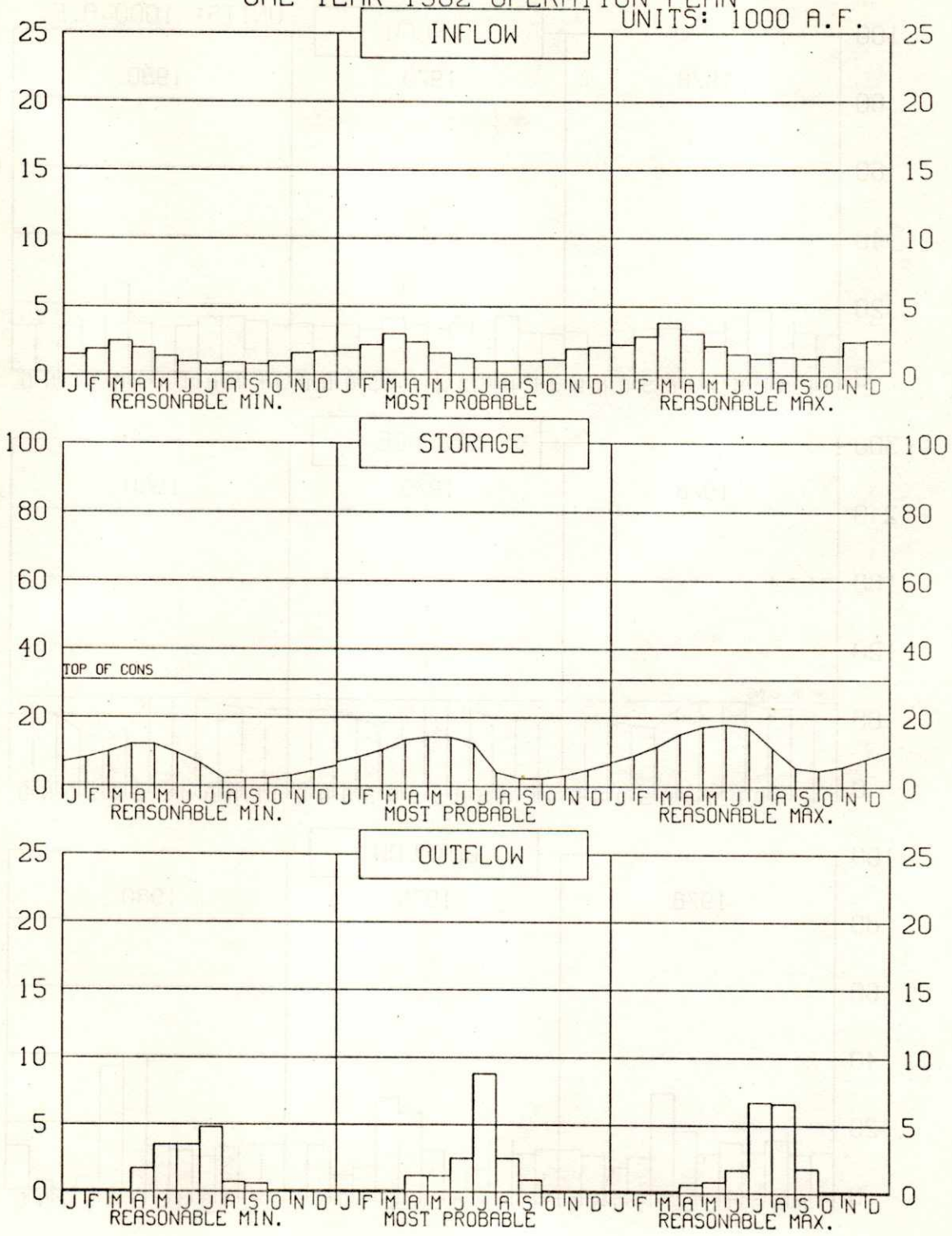


EXHIBIT 2A

MERRITT RESERVOIR OPERATION

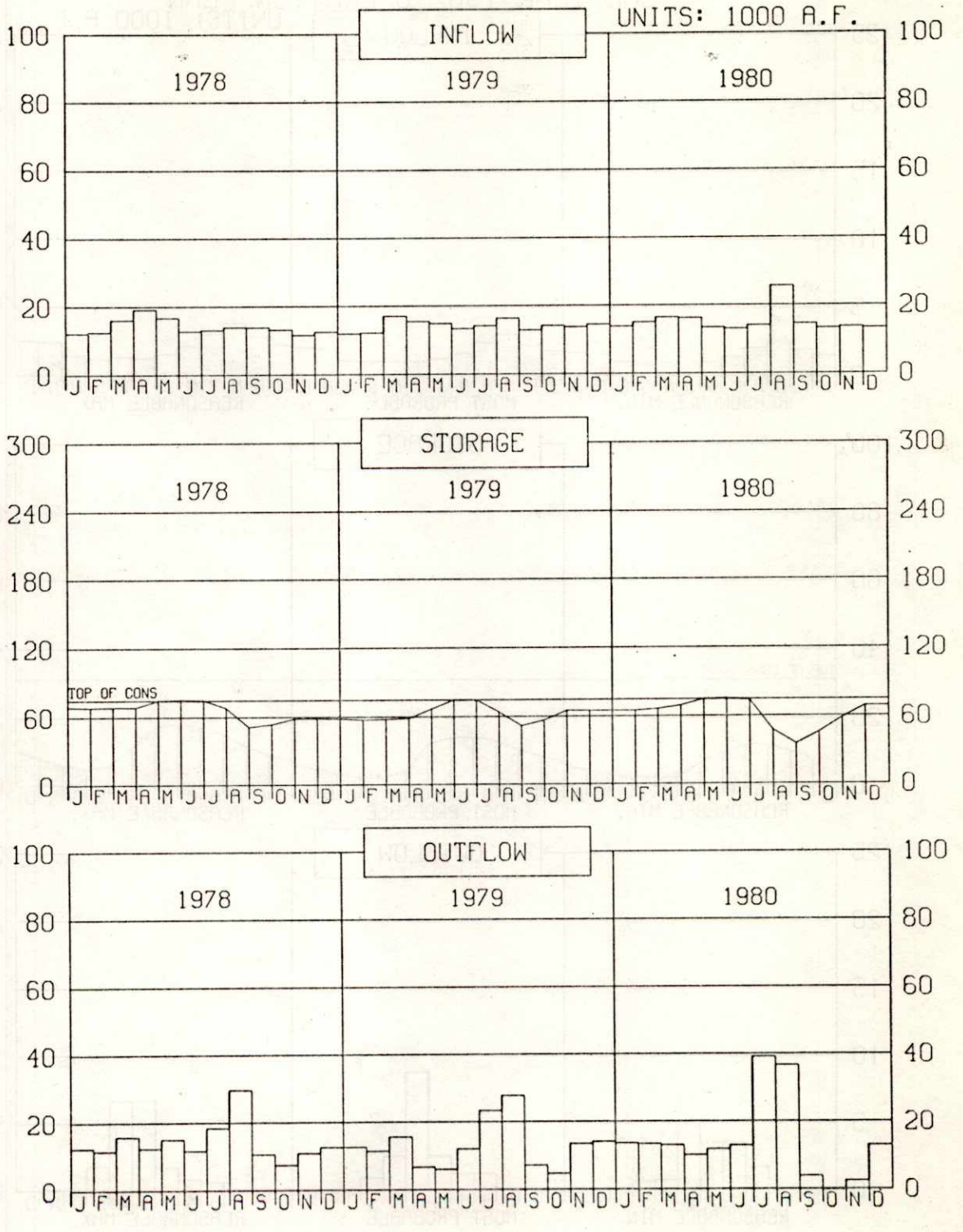


EXHIBIT 2B

MERRITT RESERVOIR 1981 OPERATION

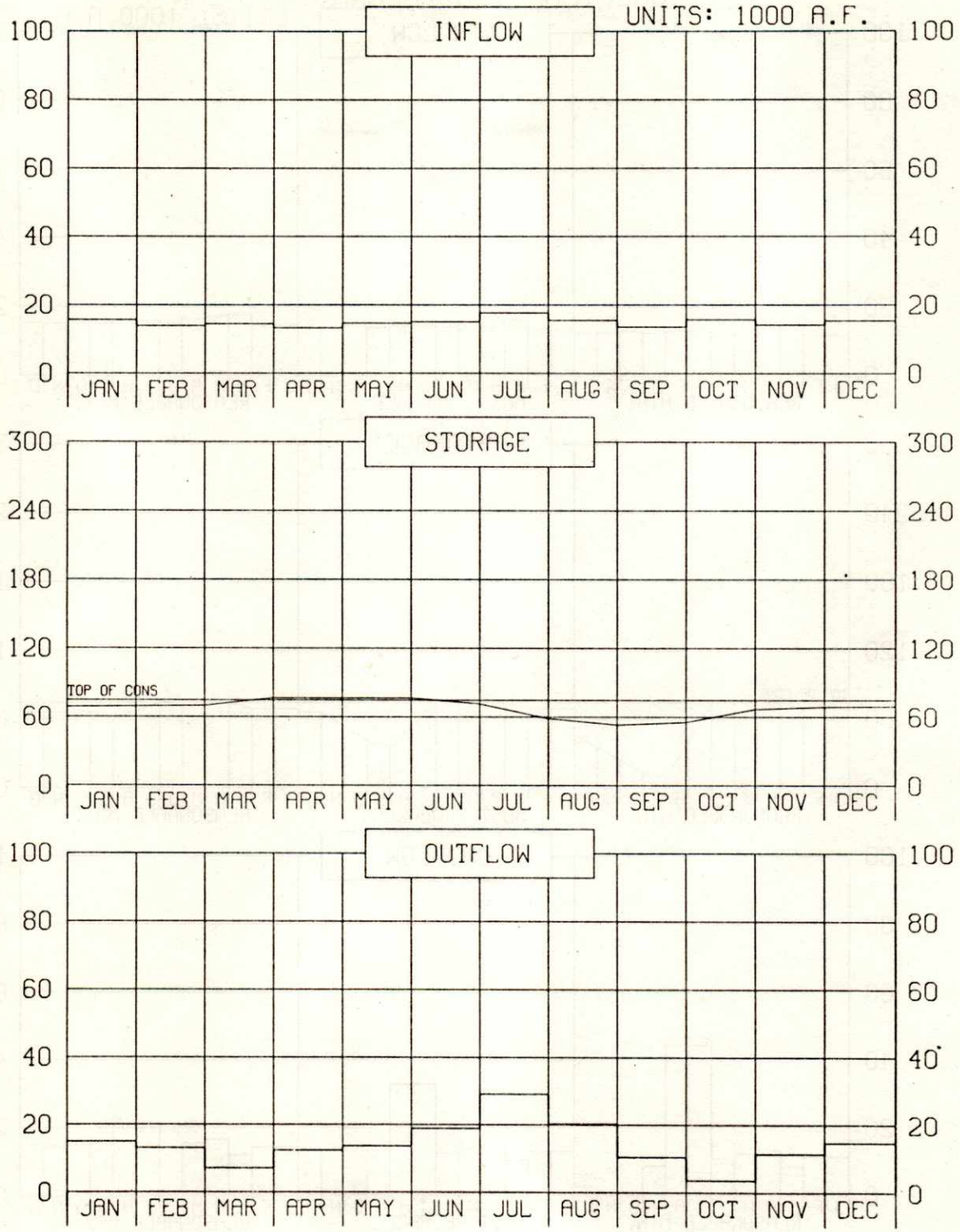


EXHIBIT 2C

MERRITT RESERVOIR

CAL YEAR 1982 OPERATION PLAN

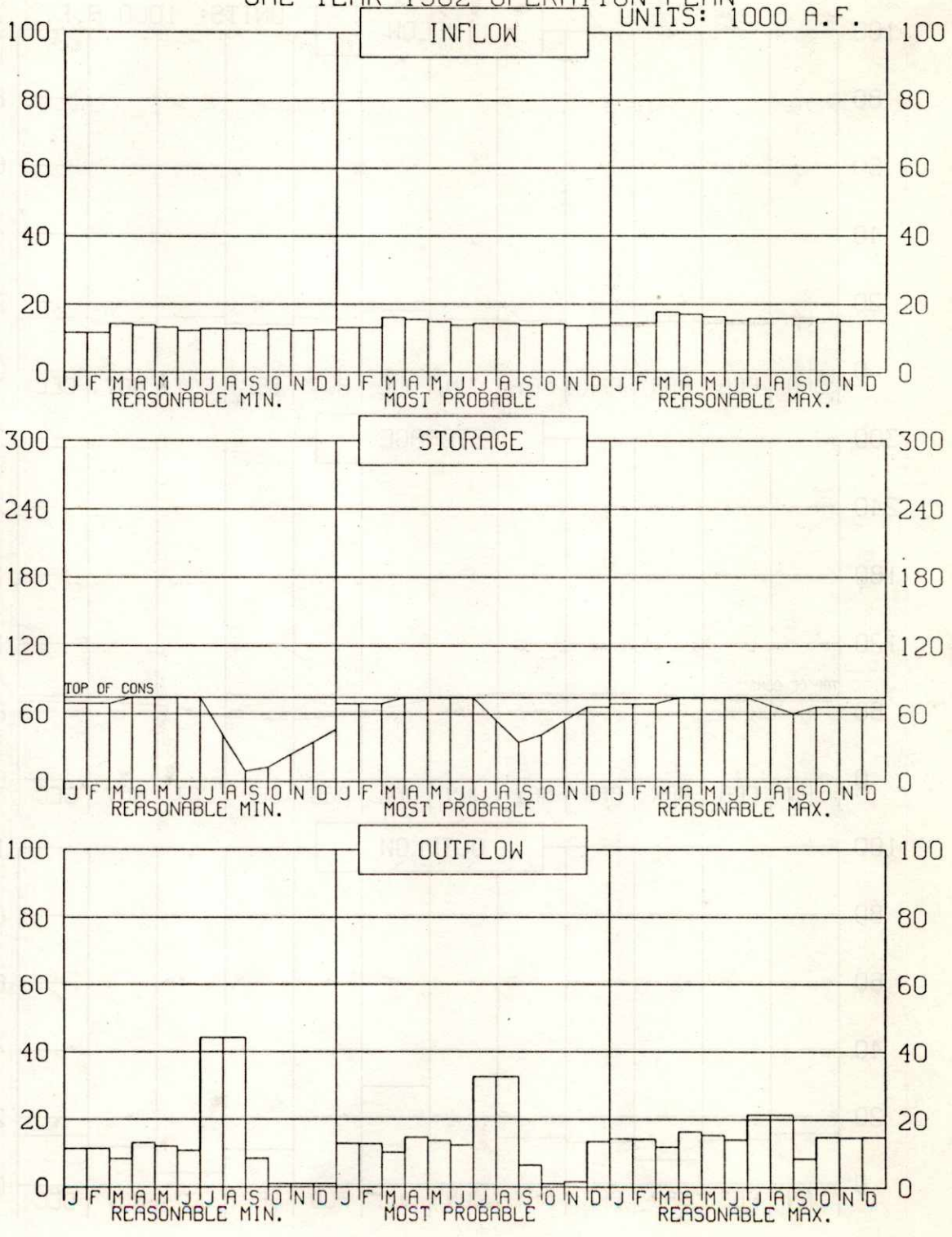


EXHIBIT 3A

SHERMAN RESERVOIR OPERATION

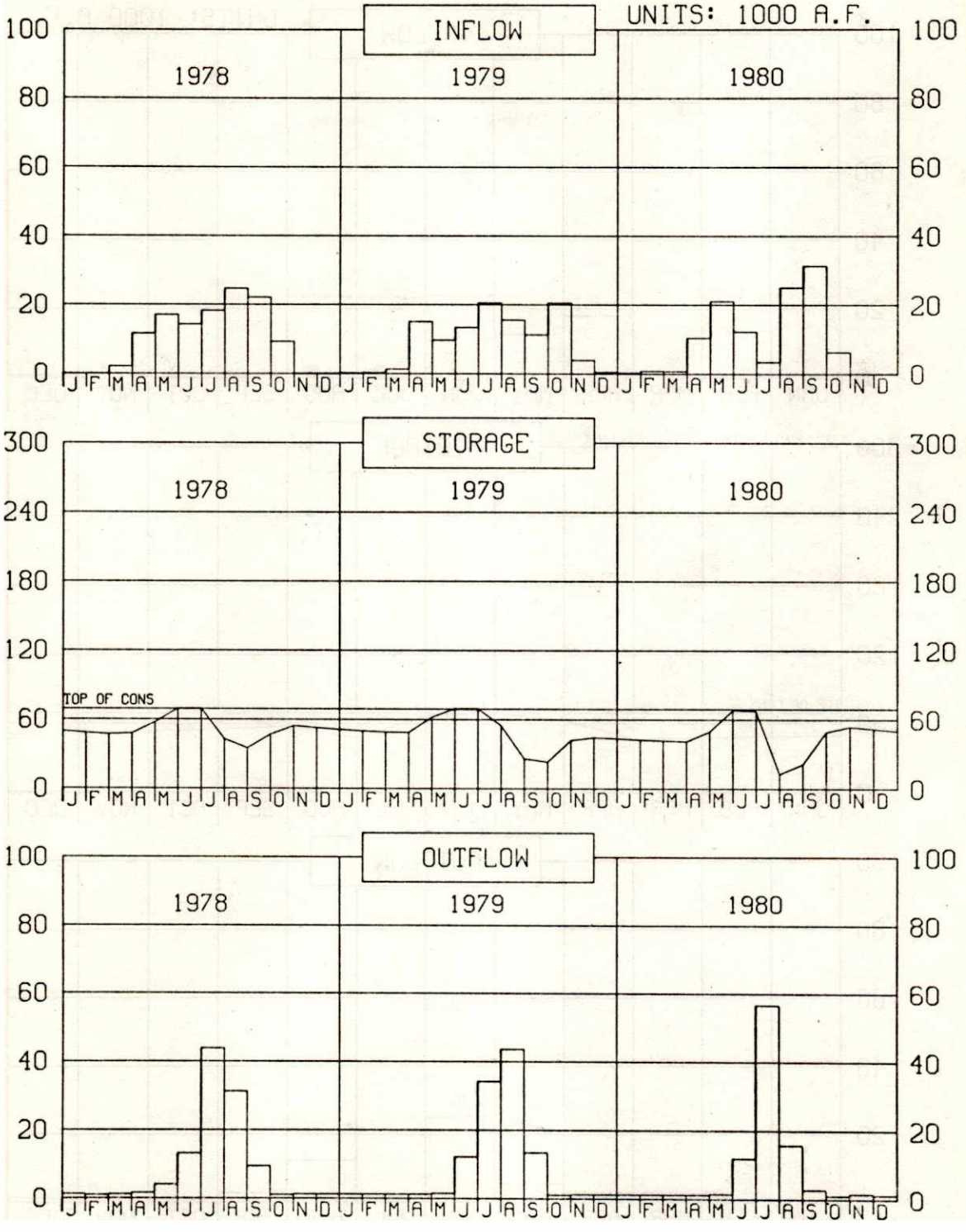


EXHIBIT 3B

SHERMAN RESERVOIR 1981 OPERATION

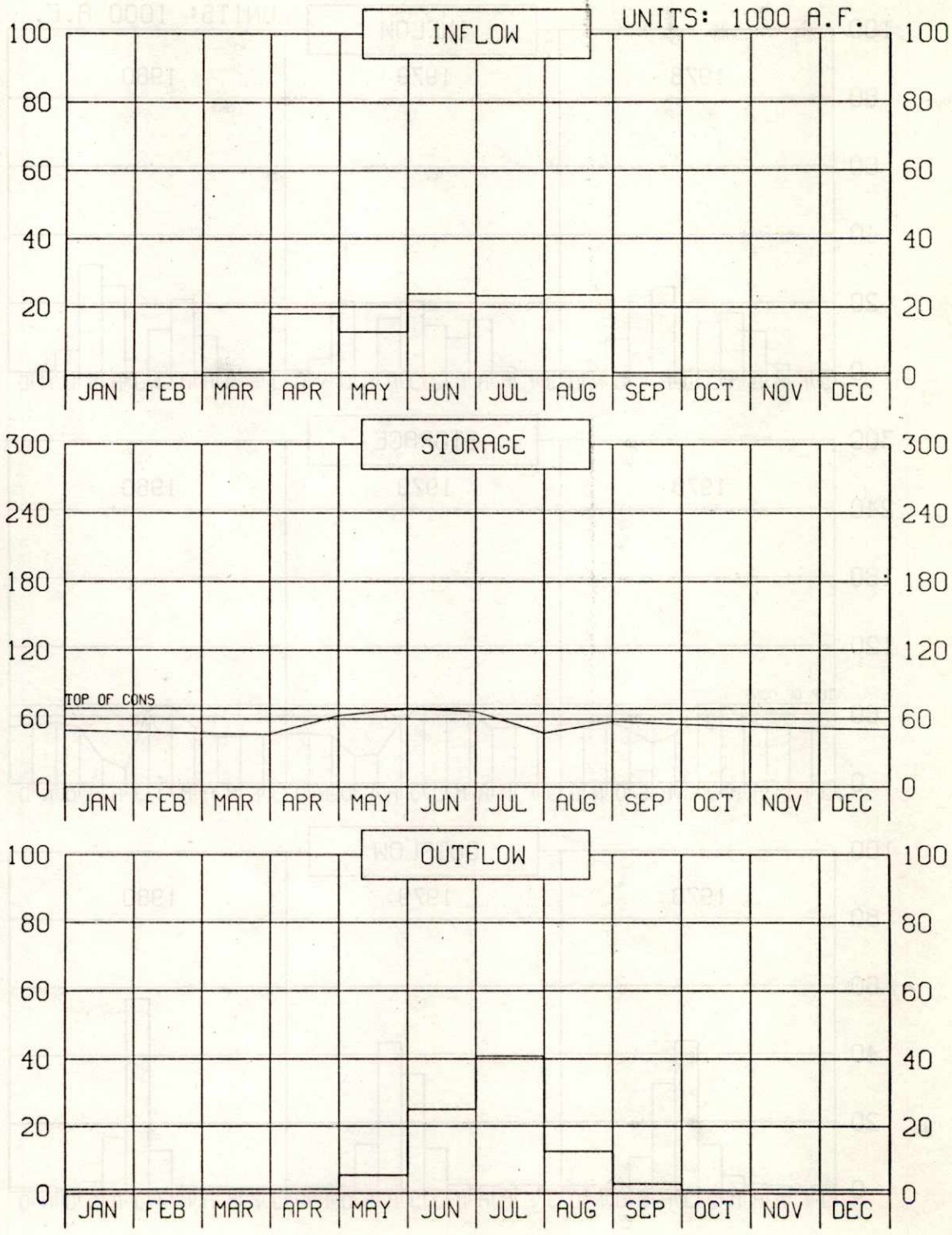


EXHIBIT 3C

SHERMAN RESERVOIR

CAL YEAR 1982 OPERATION PLAN

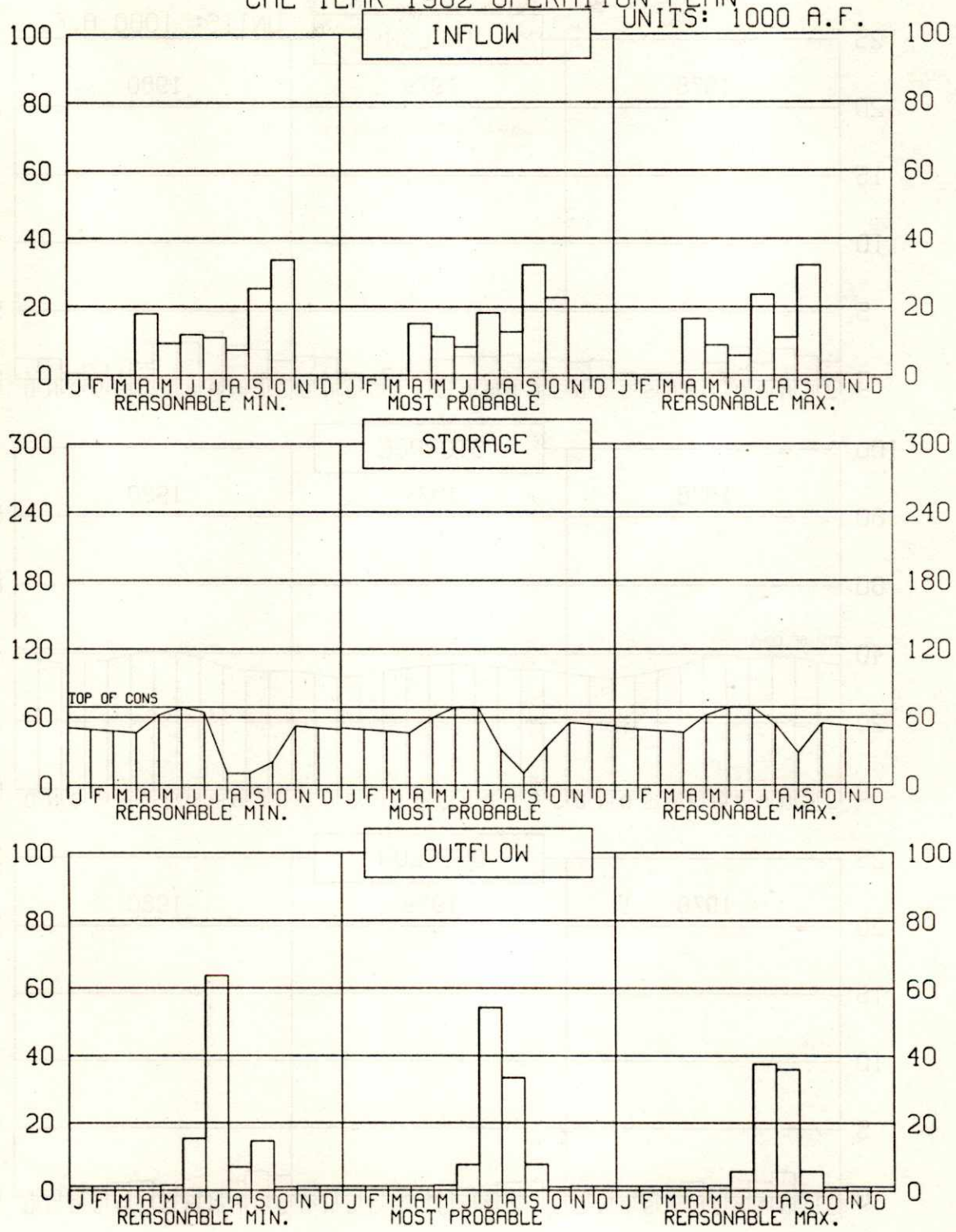


EXHIBIT 4A

BONNY RESERVOIR OPERATION

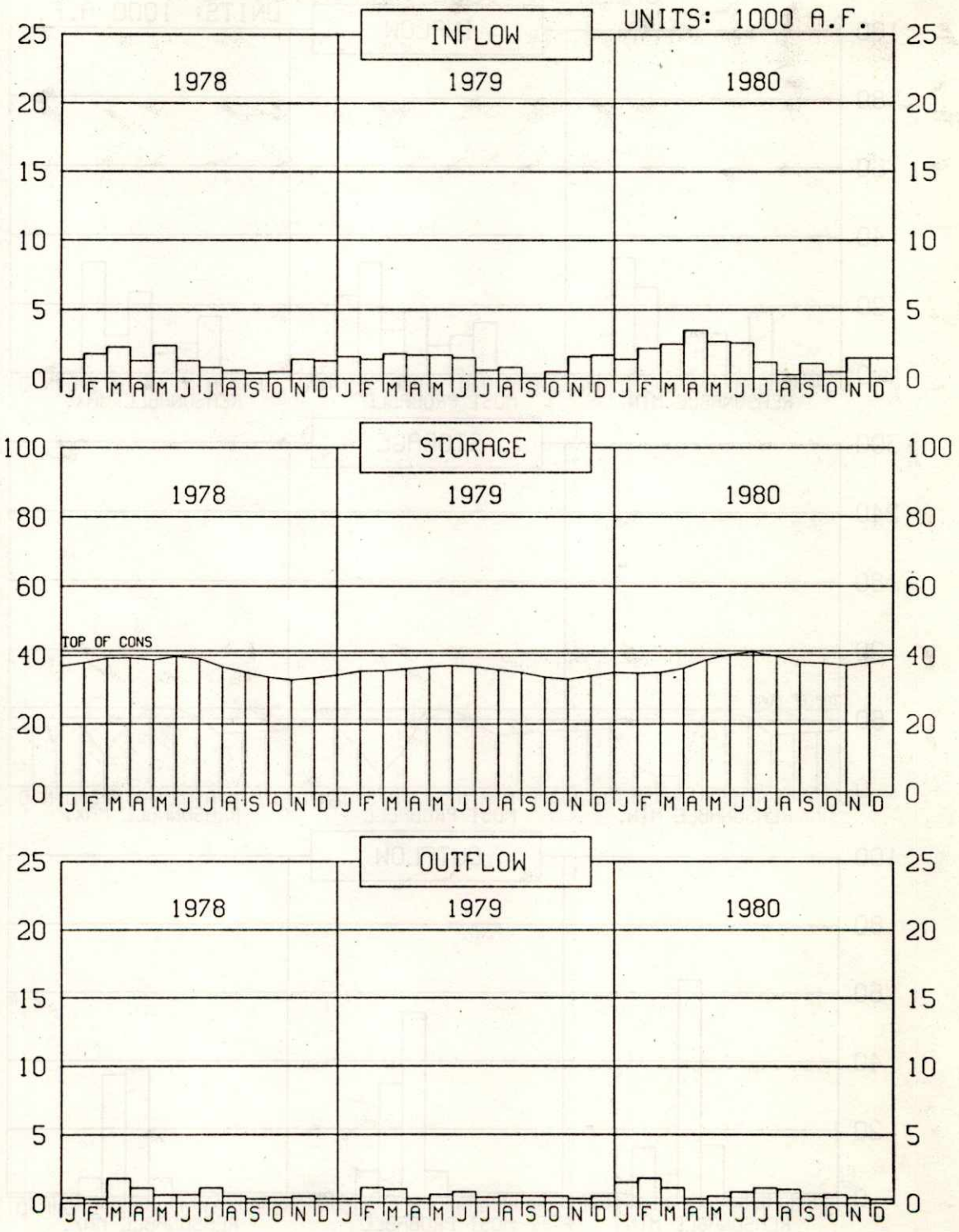


EXHIBIT 4B

BONNY RESERVOIR 1981 OPERATION

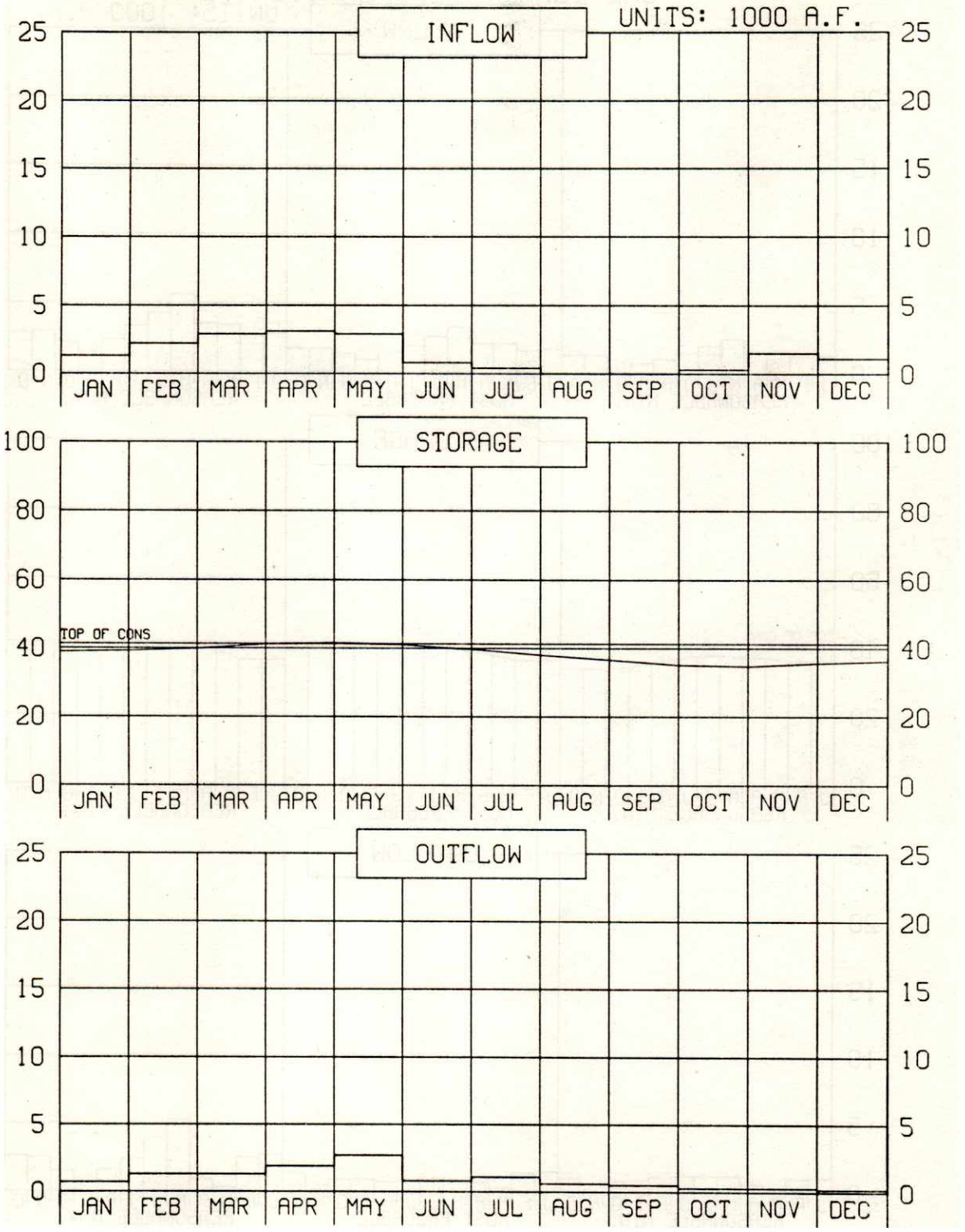


EXHIBIT 4C

BONNY RESERVOIR

CAL YEAR 1982 OPERATION PLAN

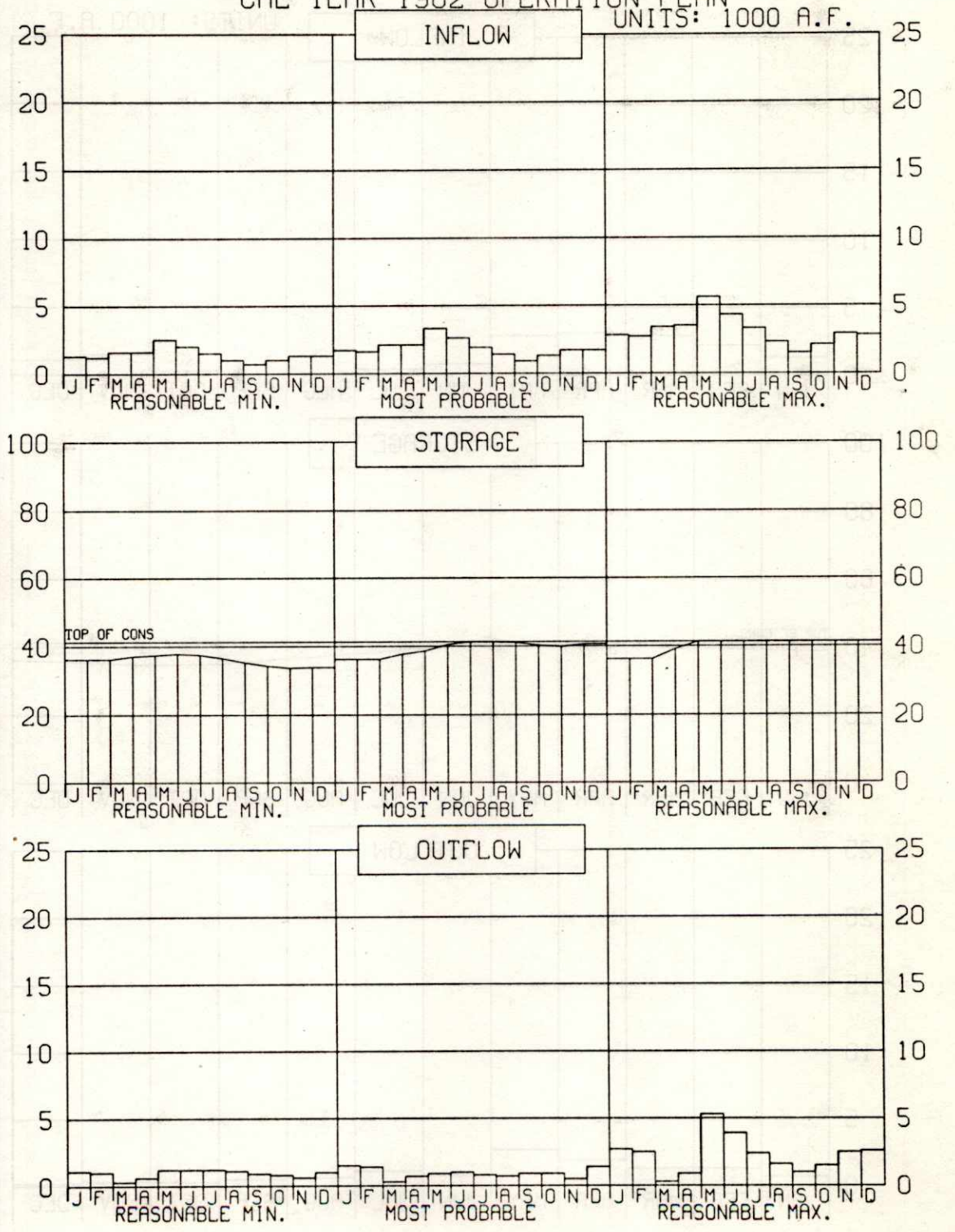


EXHIBIT 5A

SWANSON LAKE OPERATION

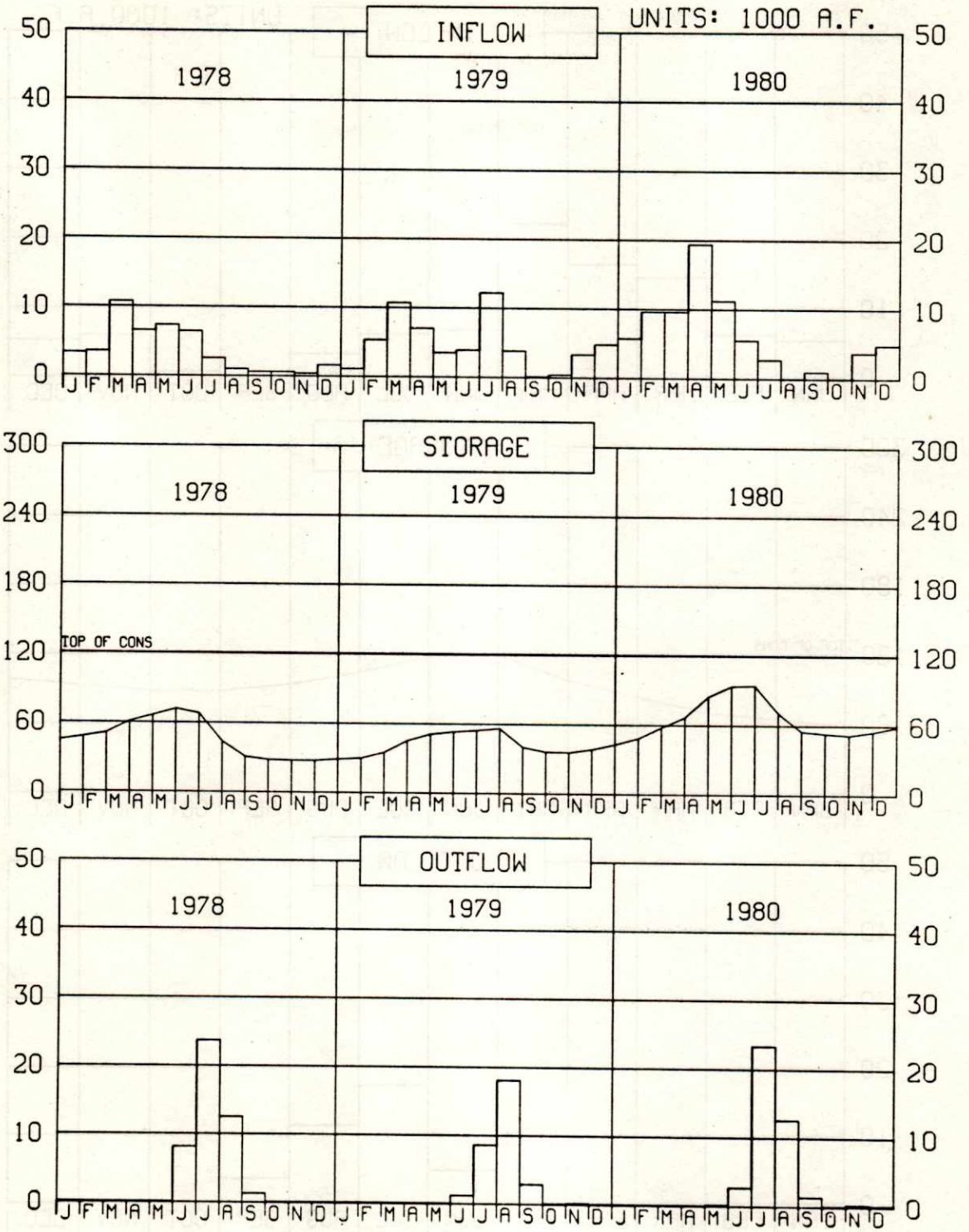


EXHIBIT 5B

SWANSON LAKE 1981 OPERATION

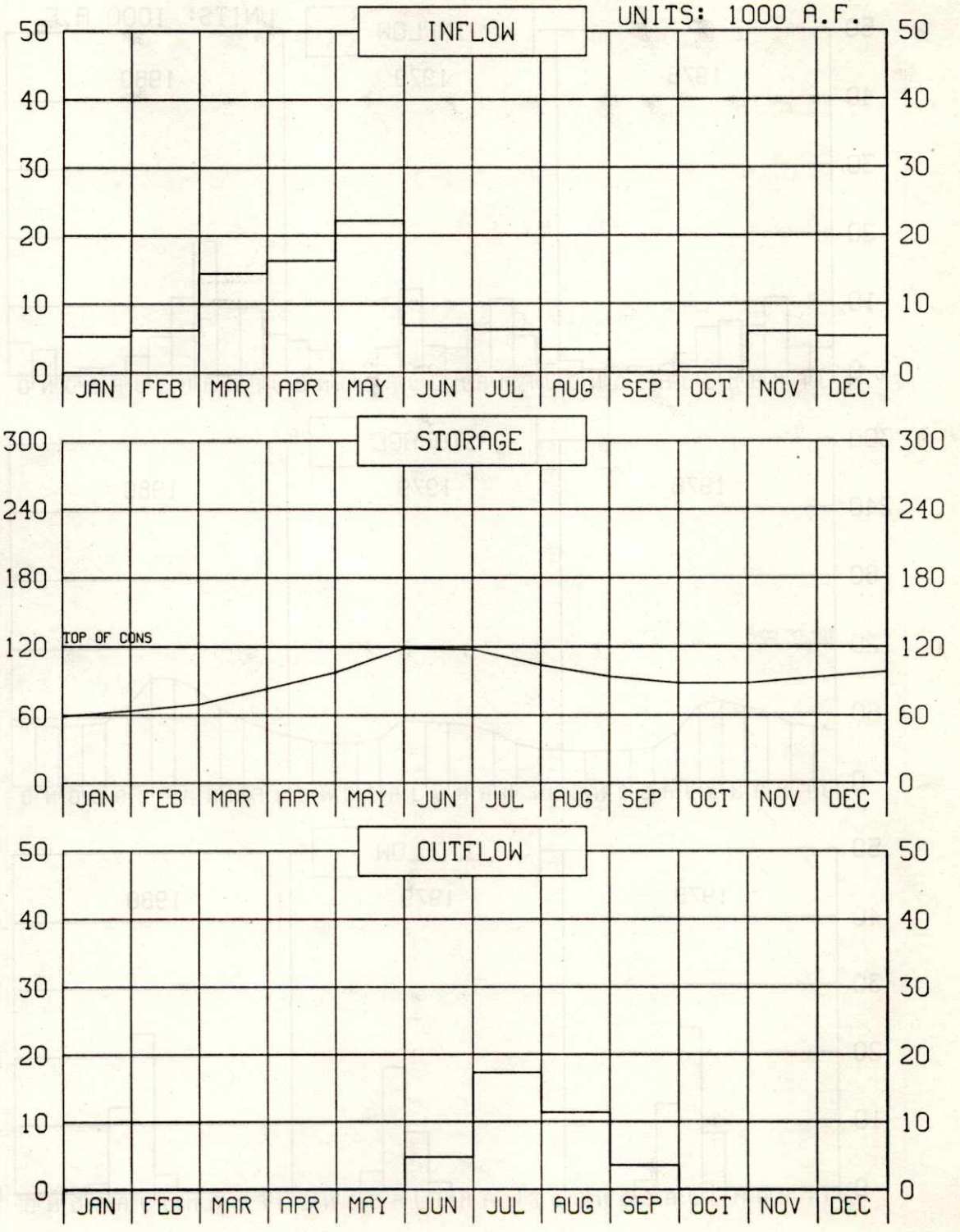


EXHIBIT 5C

SWANSON LAKE

CAL YEAR 1982 OPERATION PLAN

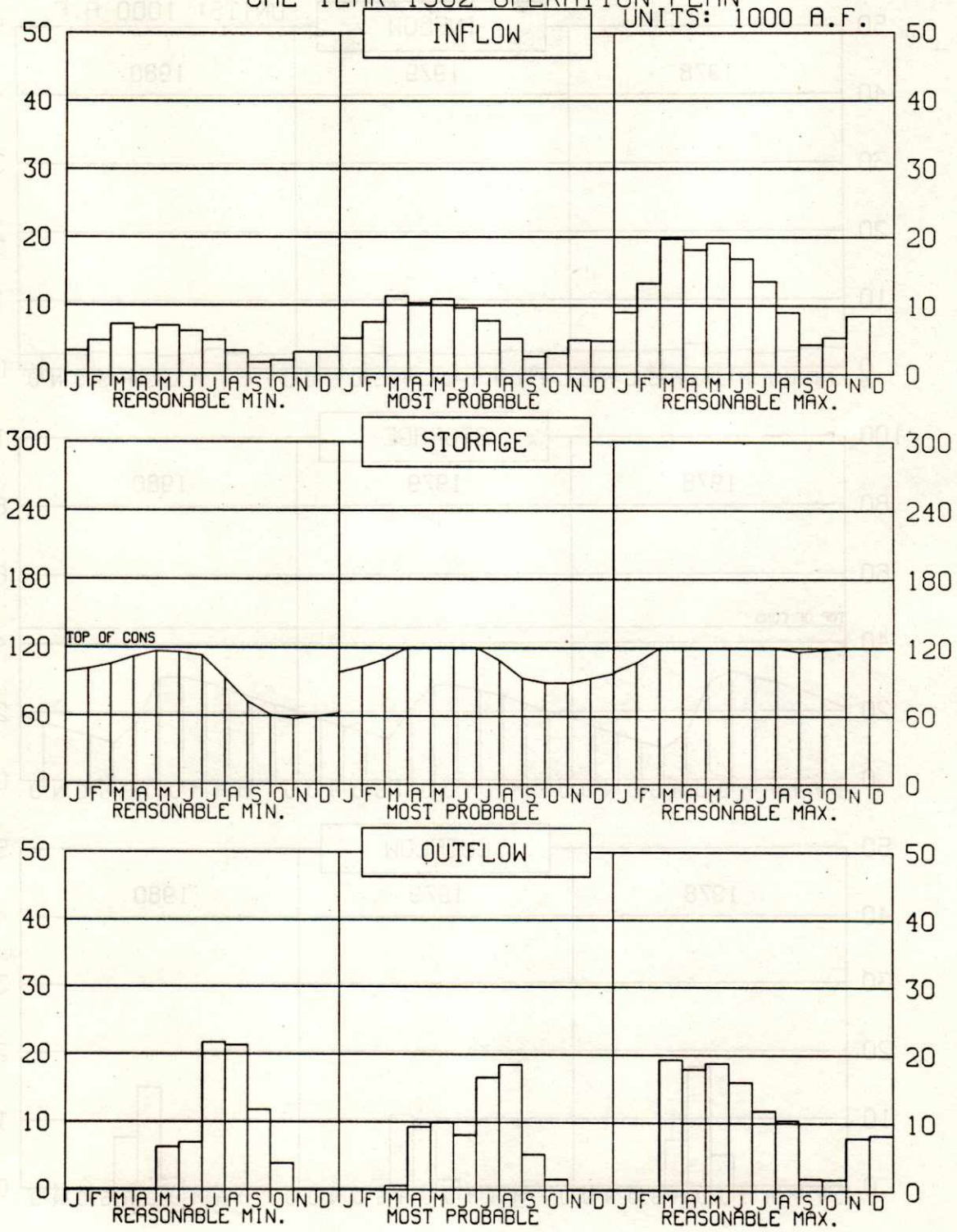


EXHIBIT 6A

ENDERS RESERVOIR OPERATION

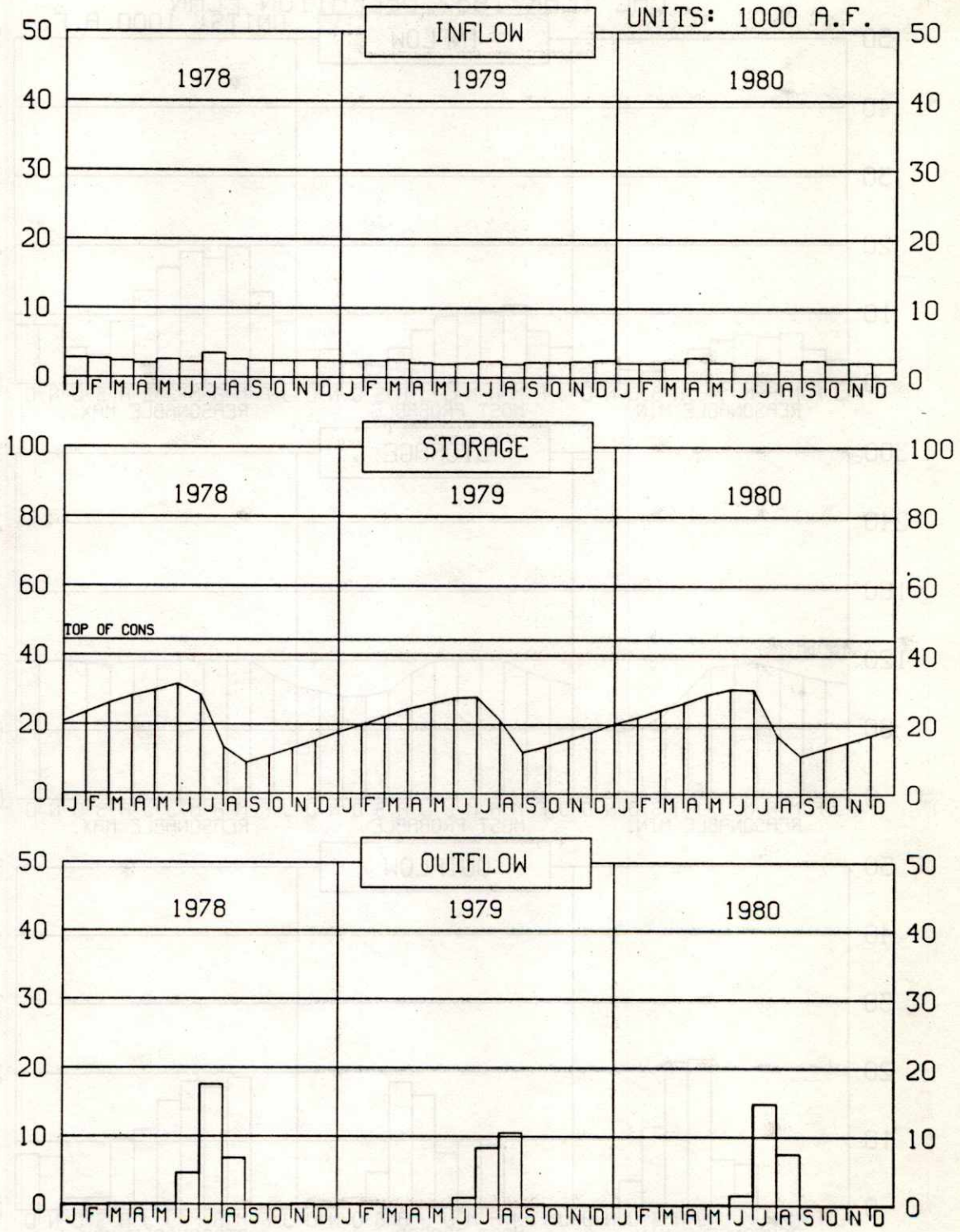


EXHIBIT 6B

ENDERS RESERVOIR 1981 OPERATION

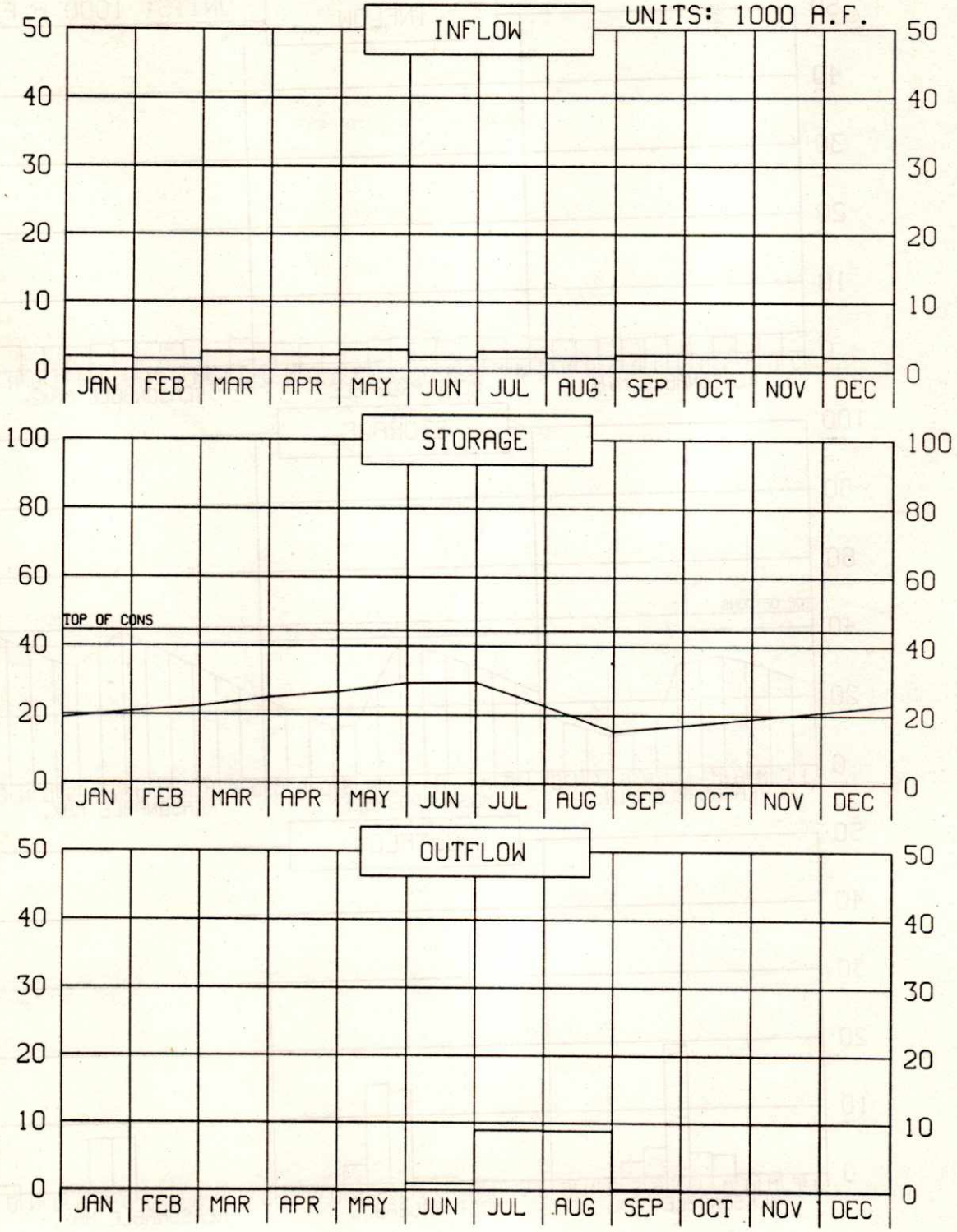
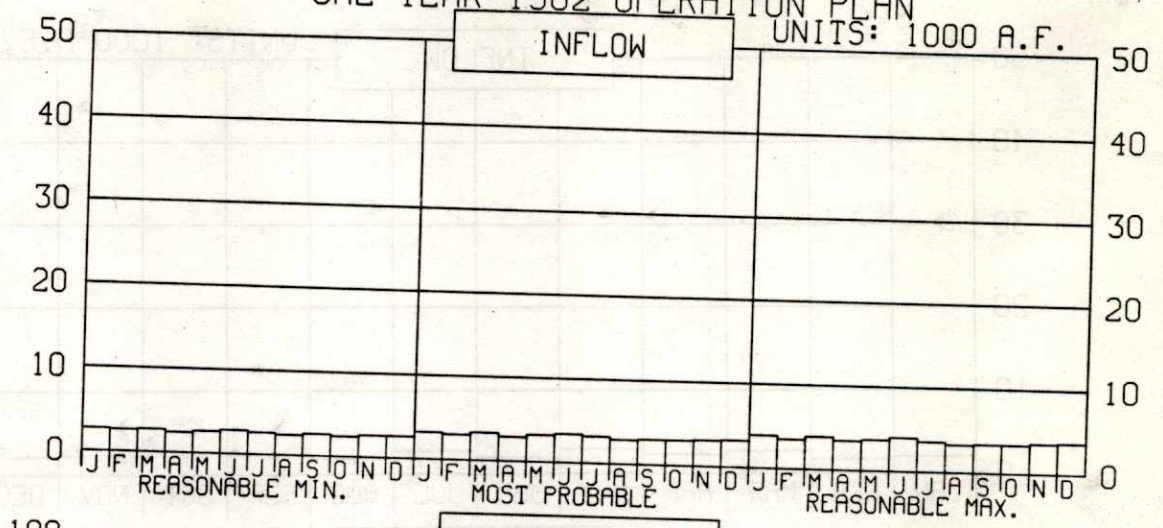
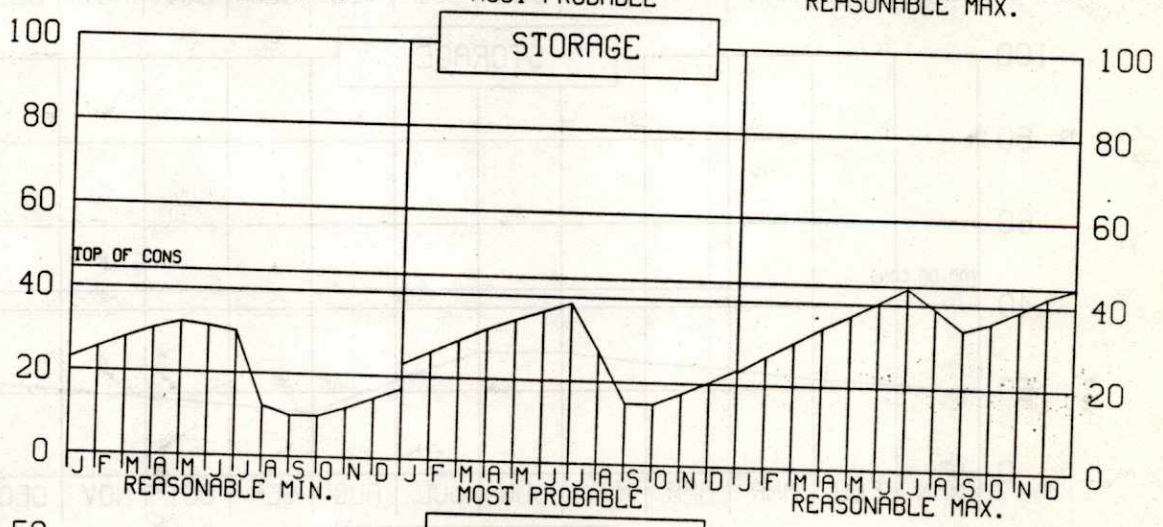


EXHIBIT 6C

ENDERS RESERVOIR
CAL YEAR 1982 OPERATION PLAN





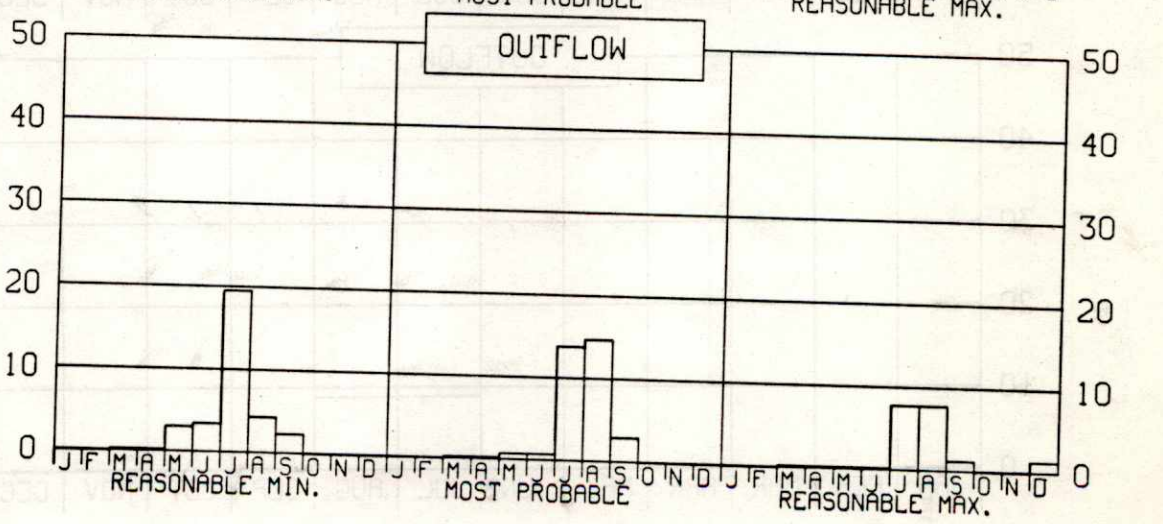


EXHIBIT 7A

HUGH BUTLER LAKE OPERATION

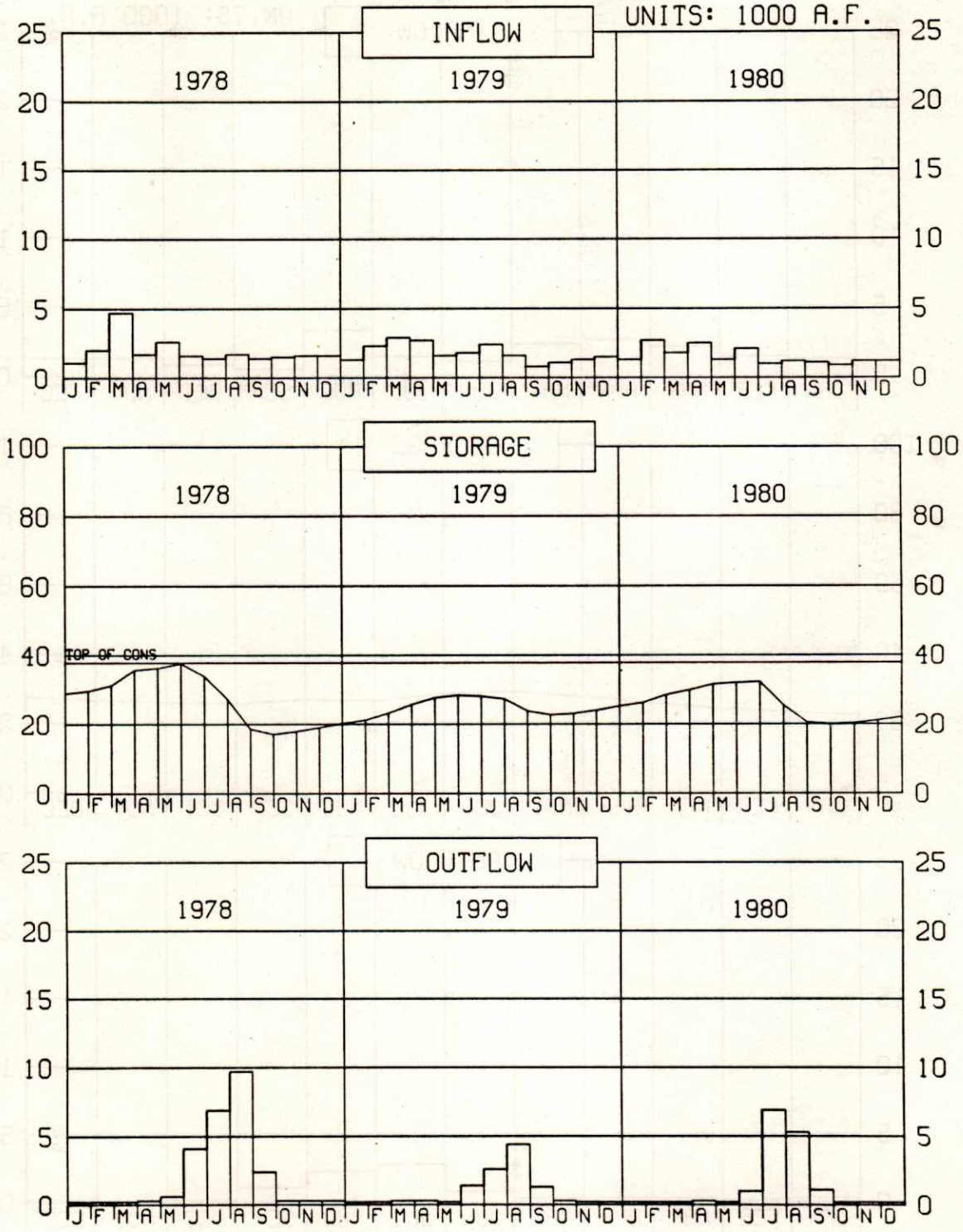
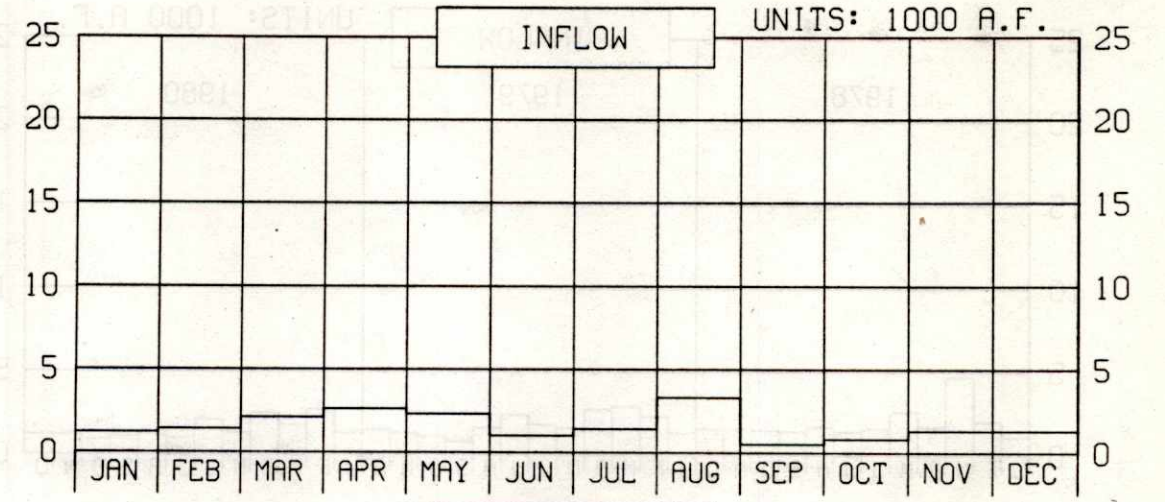
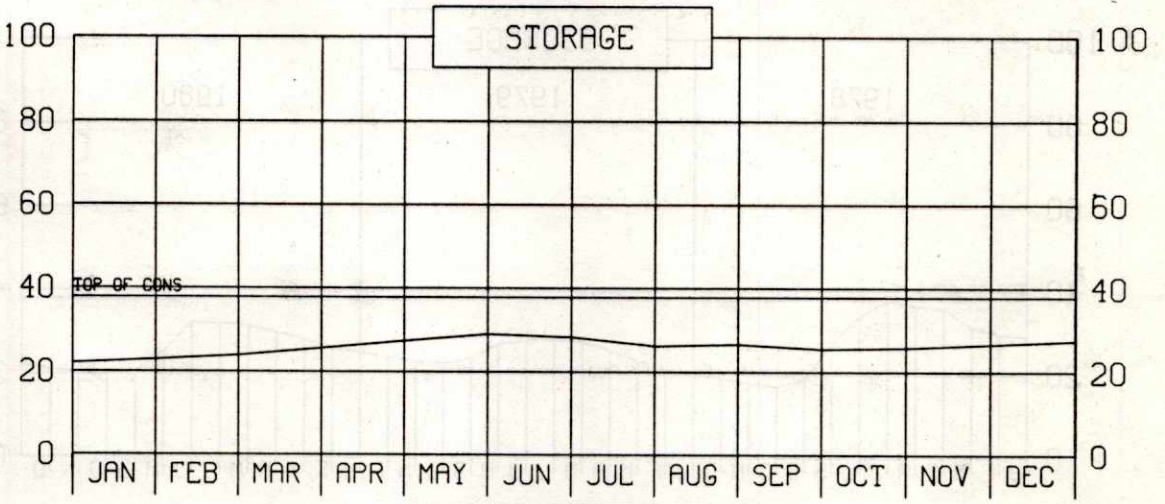


EXHIBIT 7B

HUGH BUTLER LAKE 1981 OPERATION





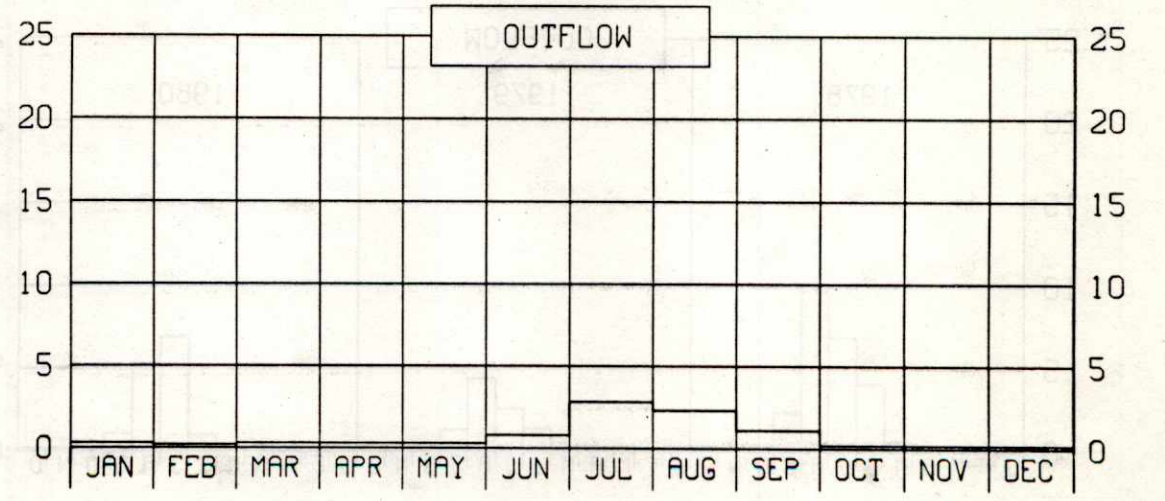


EXHIBIT 7C

HUGH BUTLER LAKE

CAL YEAR 1982 OPERATION PLAN

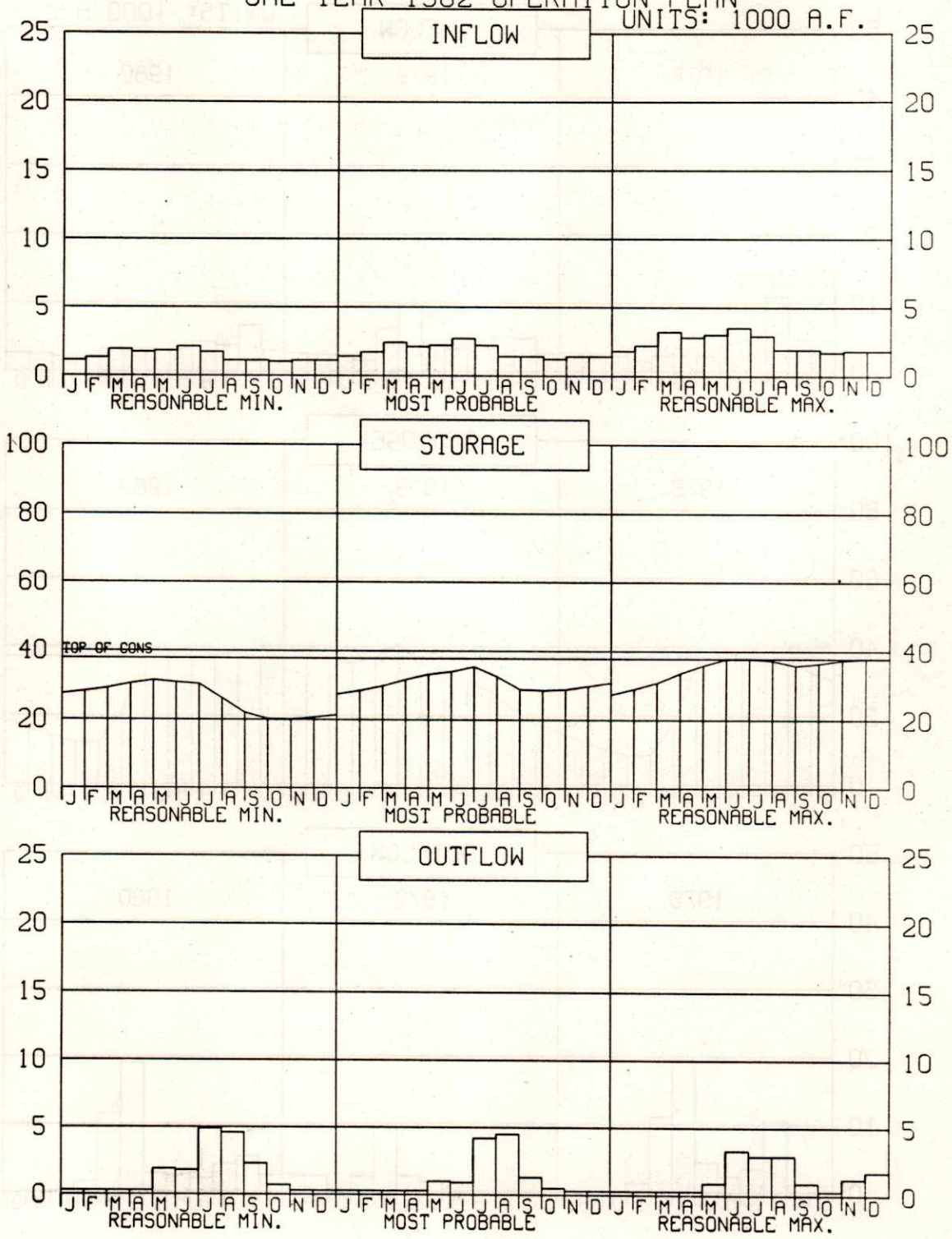


EXHIBIT 8A

HARRY STRUNK LAKE OPERATION

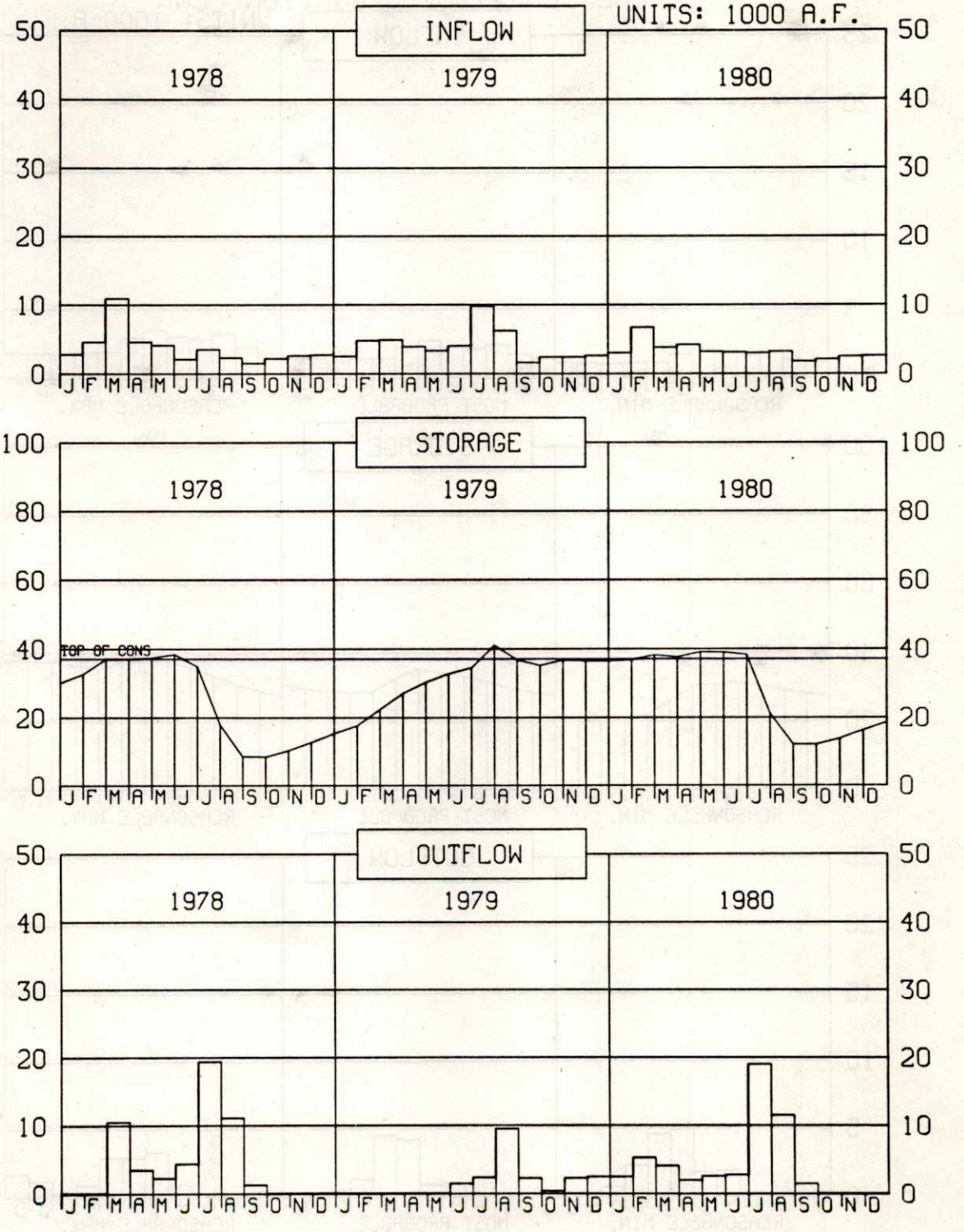


EXHIBIT 8B

HARRY STRUNK LAKE 1981 OPERATION

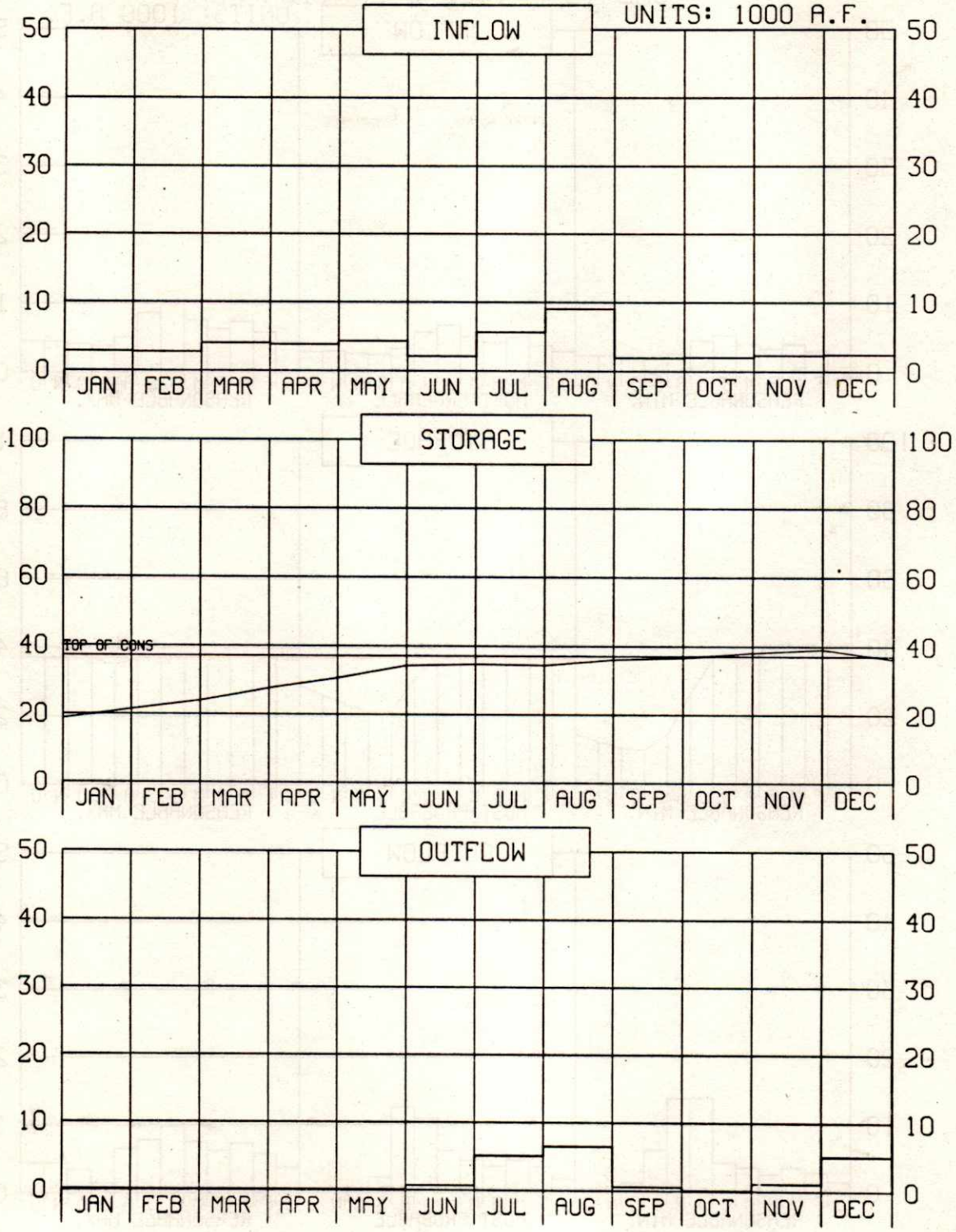


EXHIBIT 8C

HARRY STRUNK LAKE

CAL YEAR 1982 OPERATION PLAN

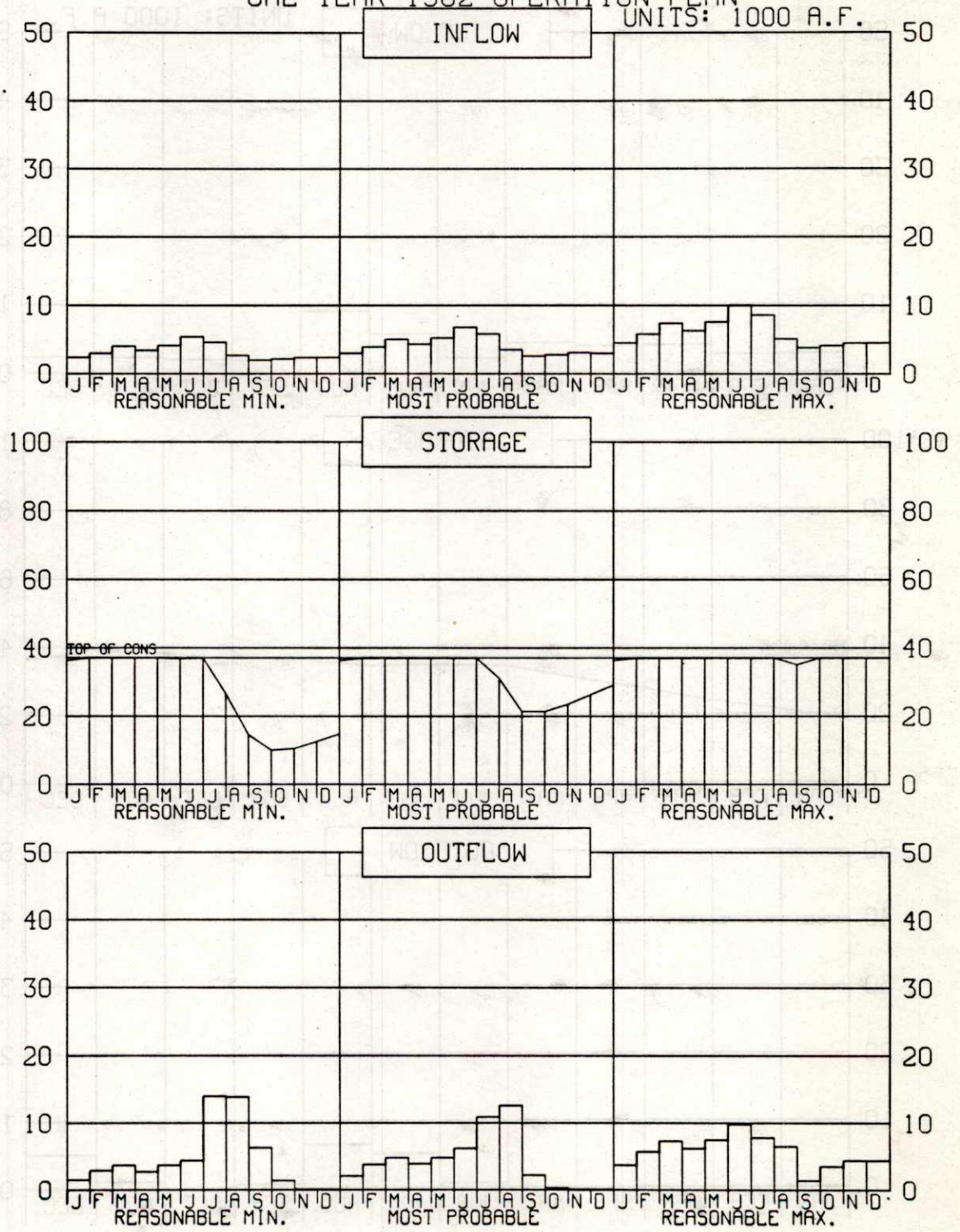


EXHIBIT 9A

KEITH SEBELIUS LAKE OPERATION

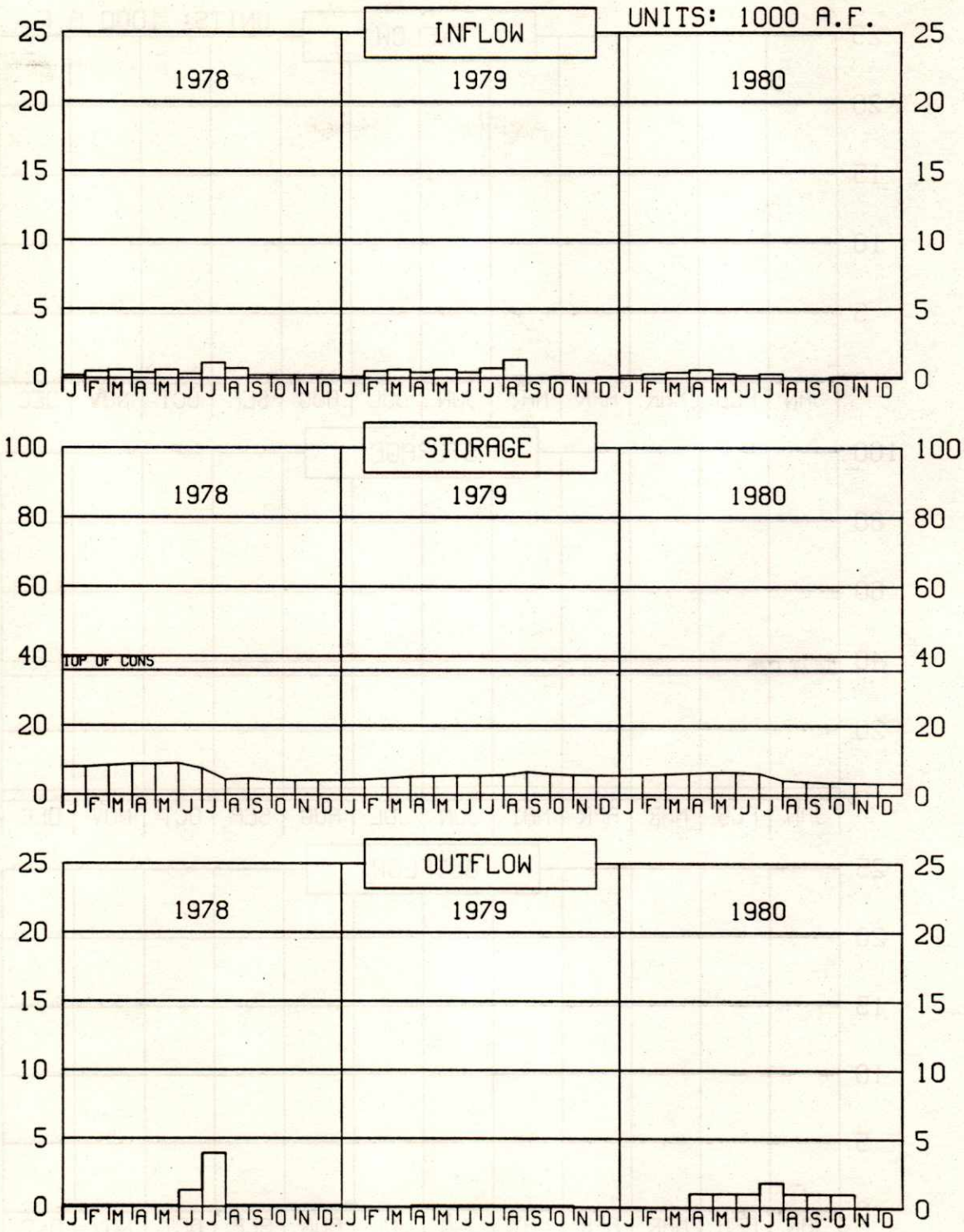


EXHIBIT 9B

KEITH SEBELIUS LAKE 1981 OPERATION

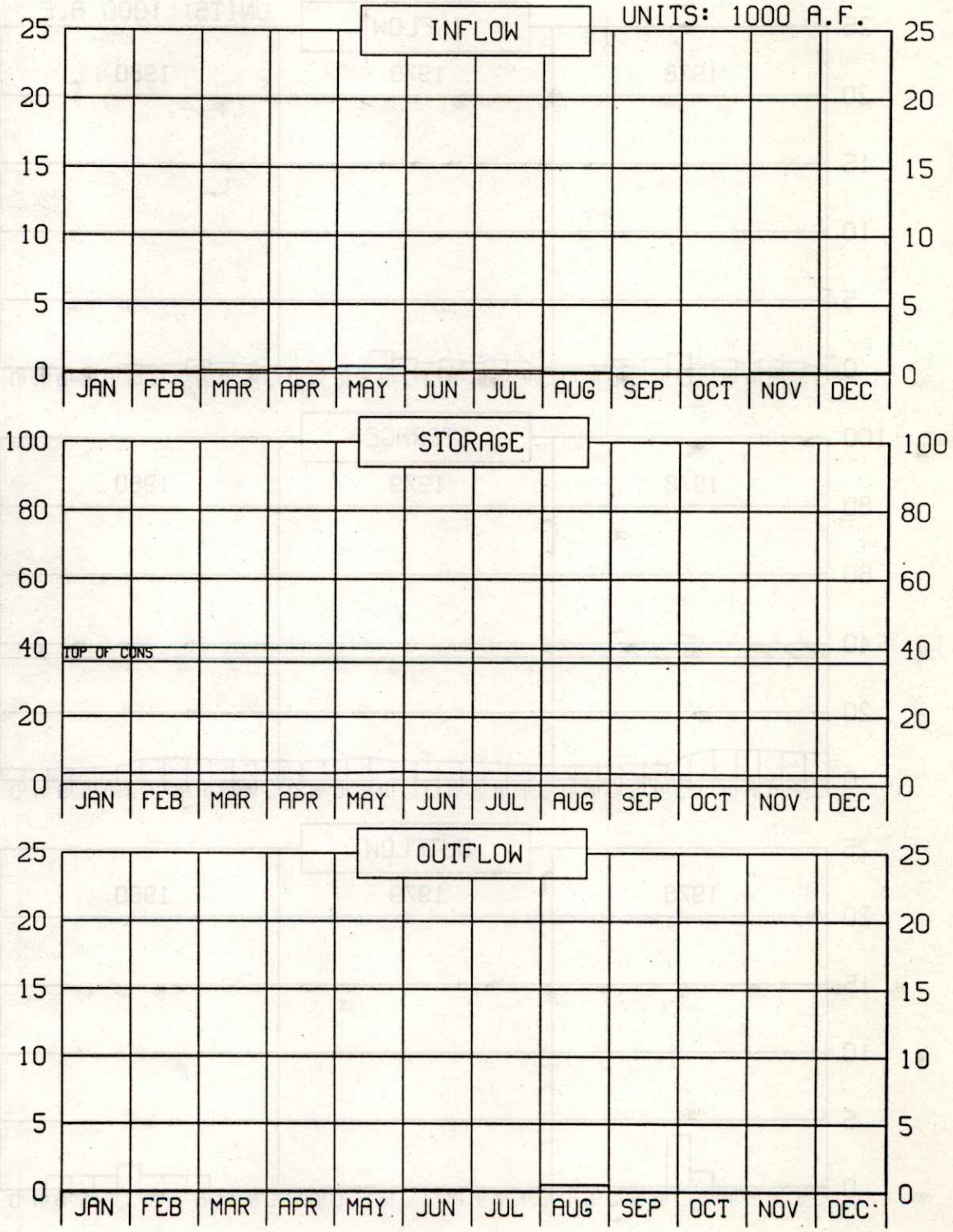


EXHIBIT 9C

KEITH SEBELIUS LAKE

CAL YEAR 1982 OPERATION PLAN

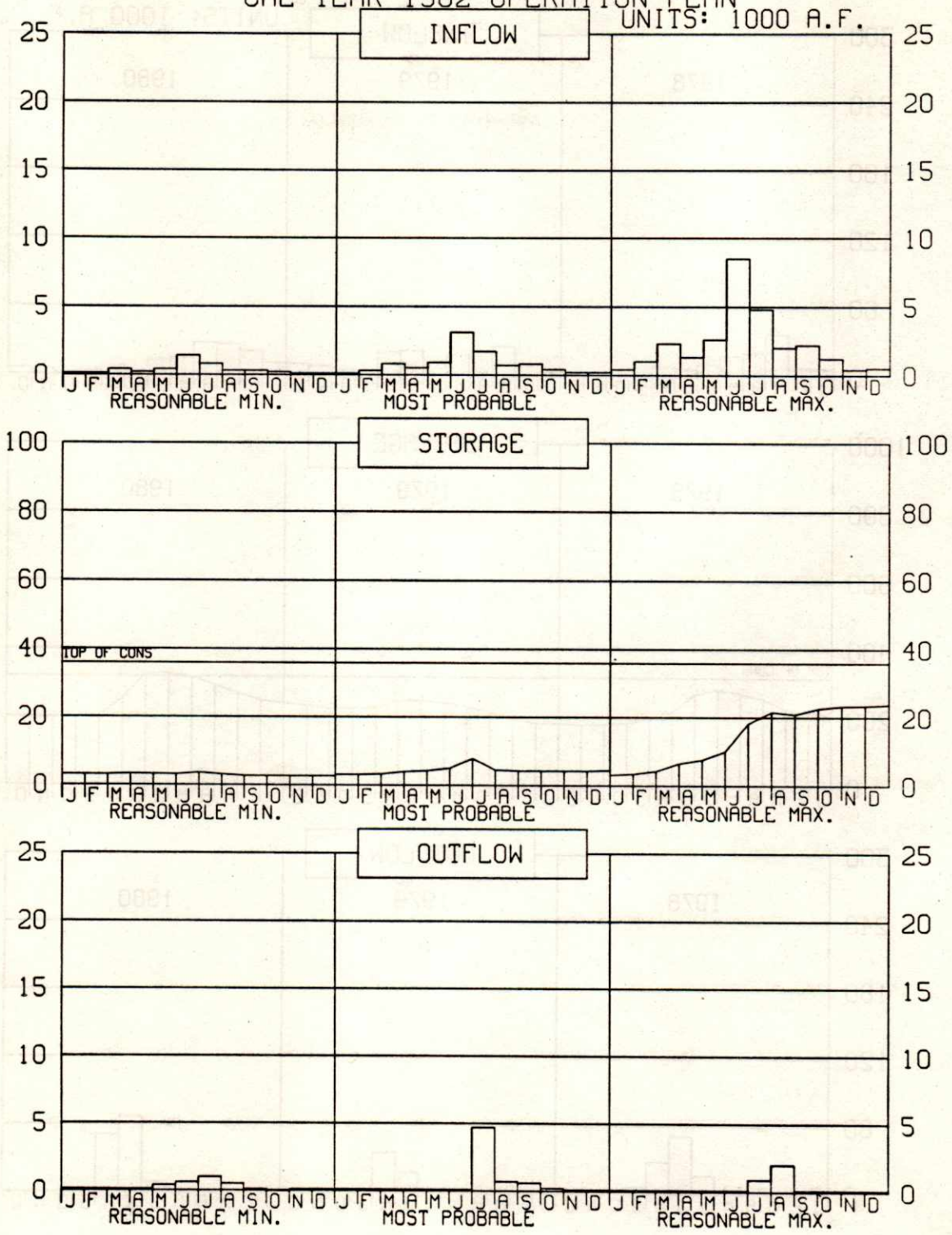


EXHIBIT 10A

HARLAN COUNTY LAKE OPERATION

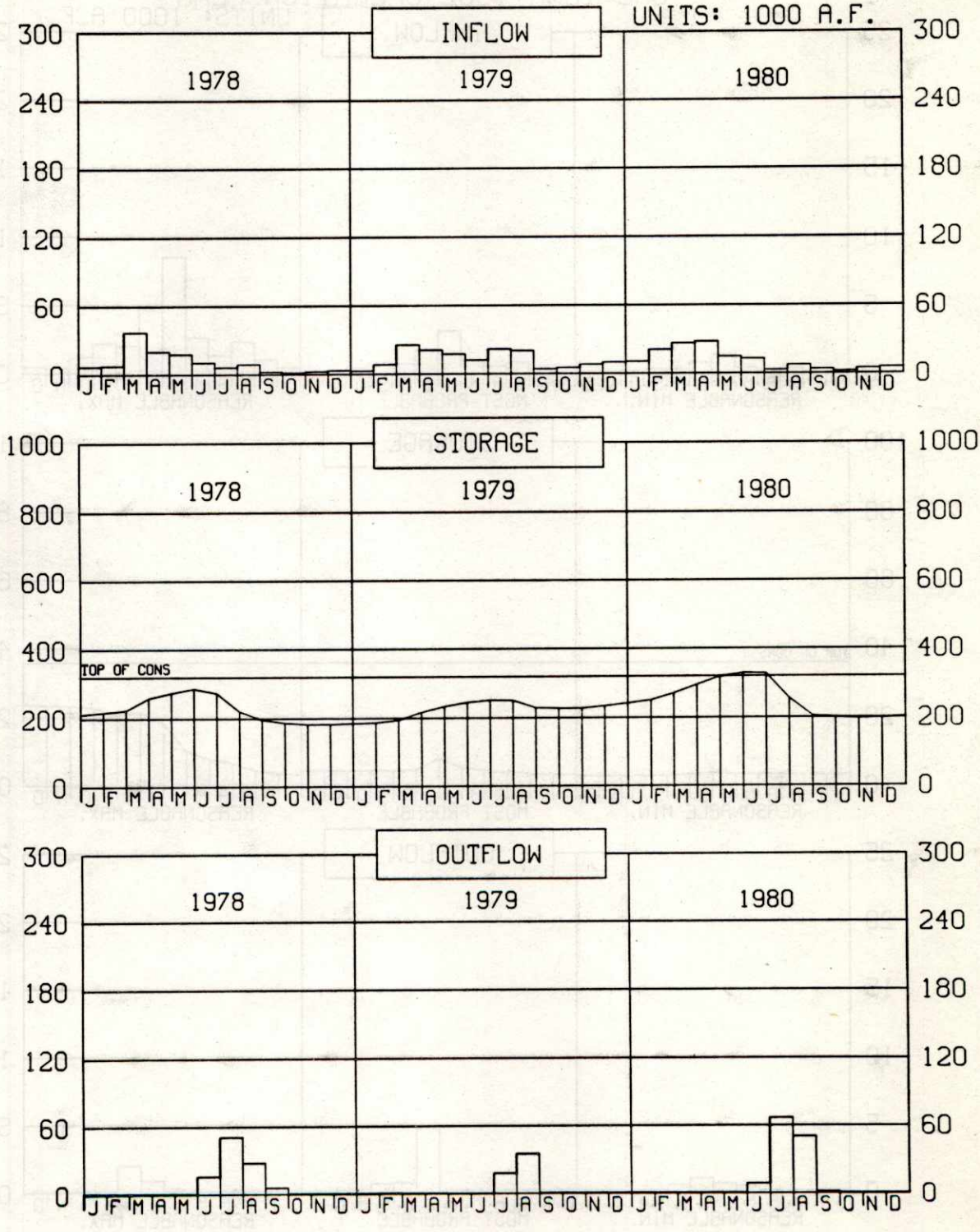
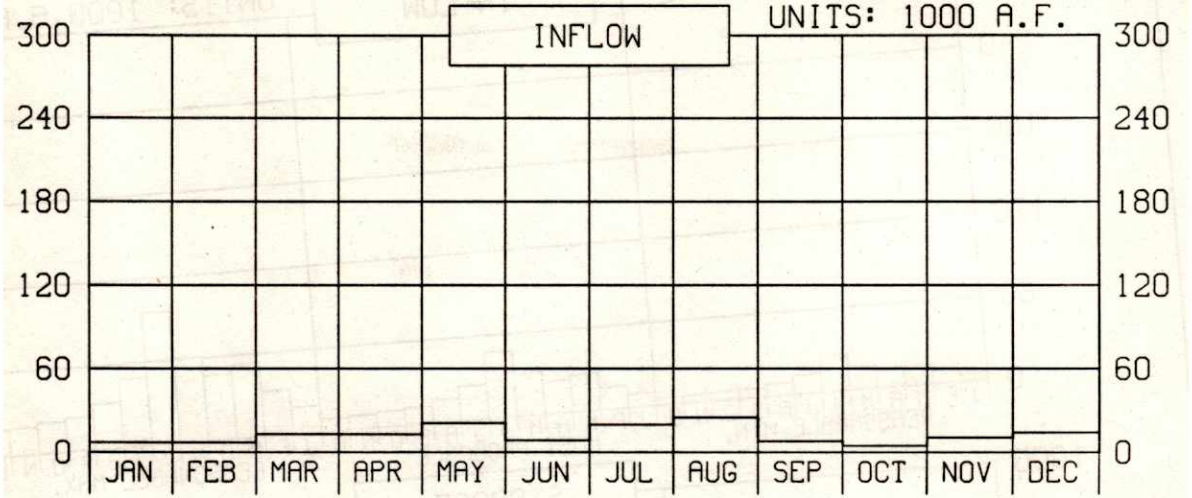
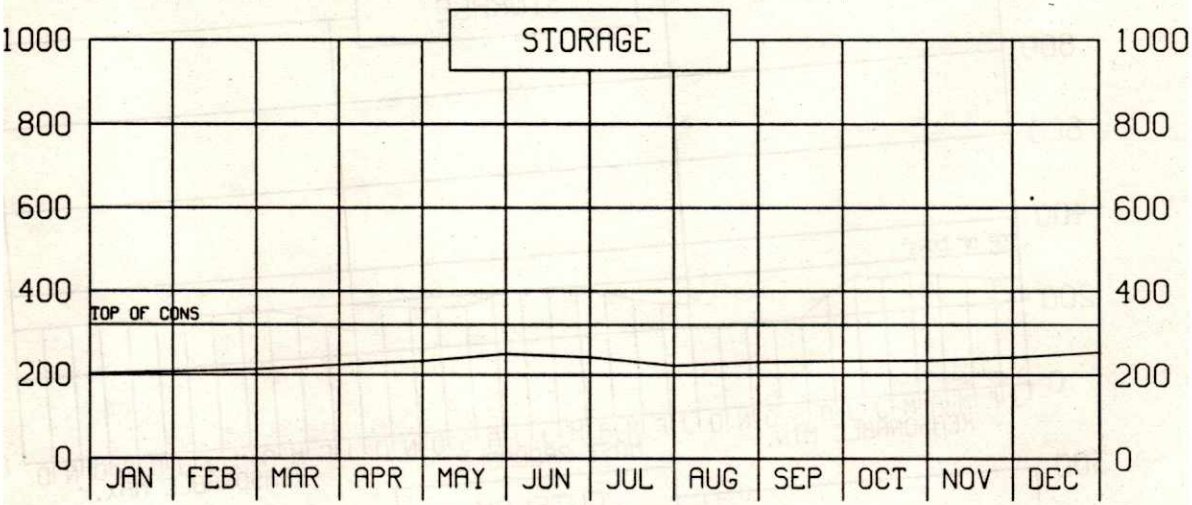


EXHIBIT 10B

HARLAN COUNTY LAKE 1981 OPERATION





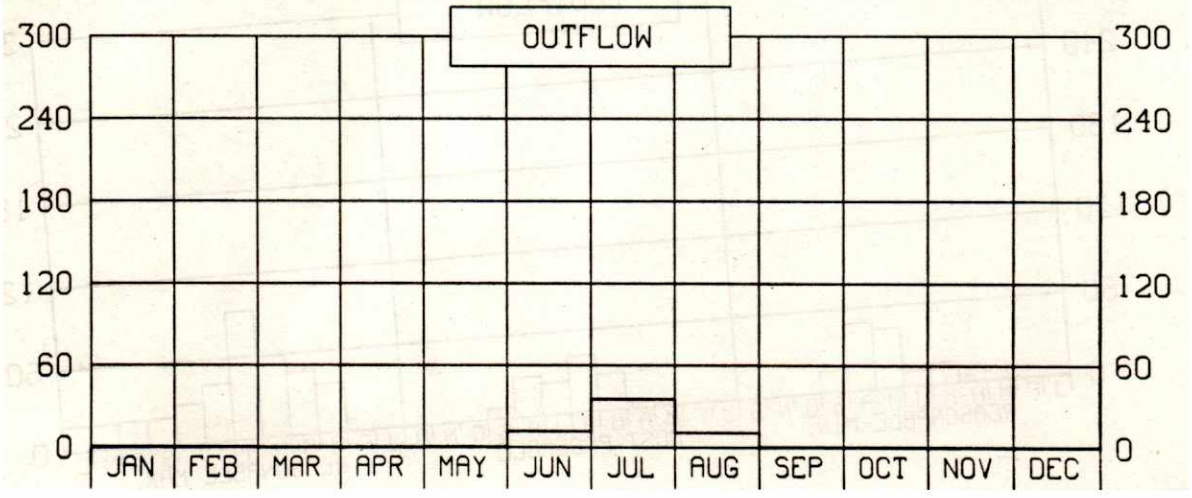
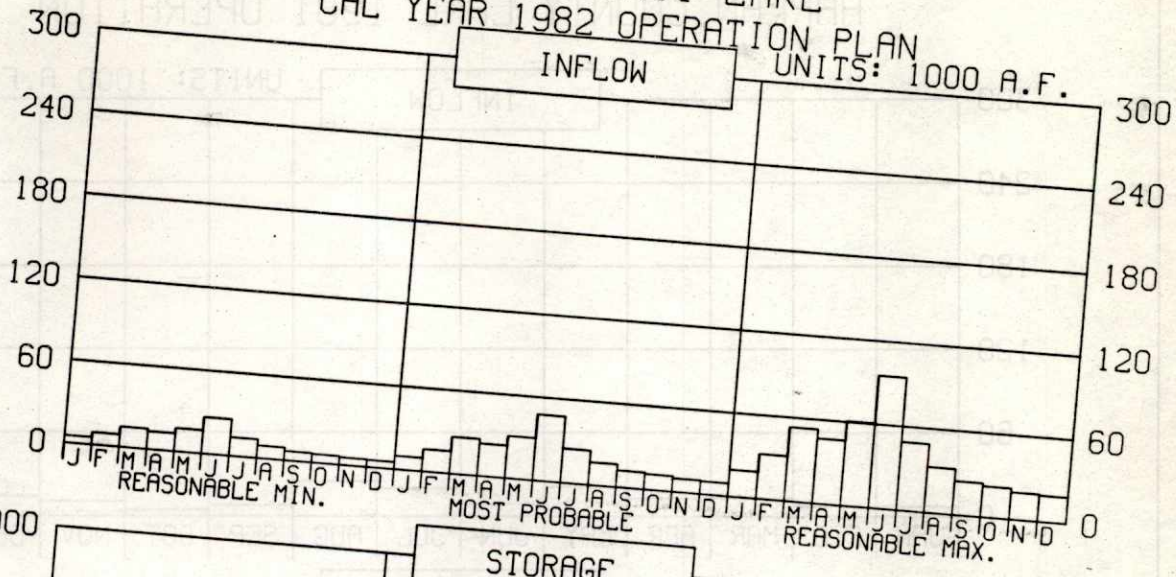
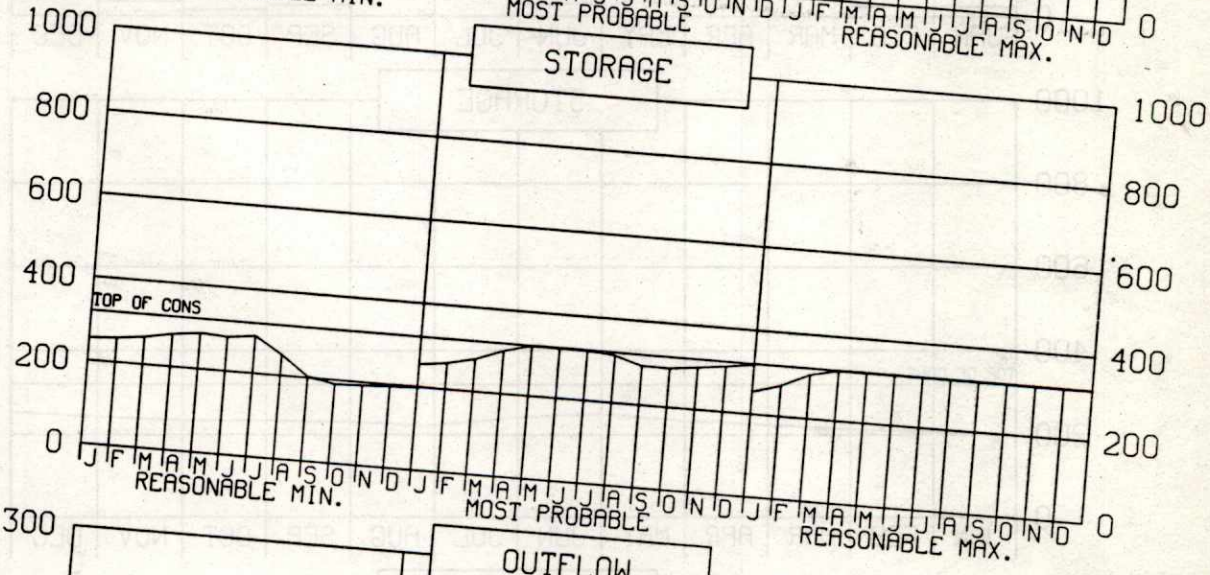


EXHIBIT 10C

HARLAN COUNTY LAKE
CAL YEAR 1982 OPERATION PLAN





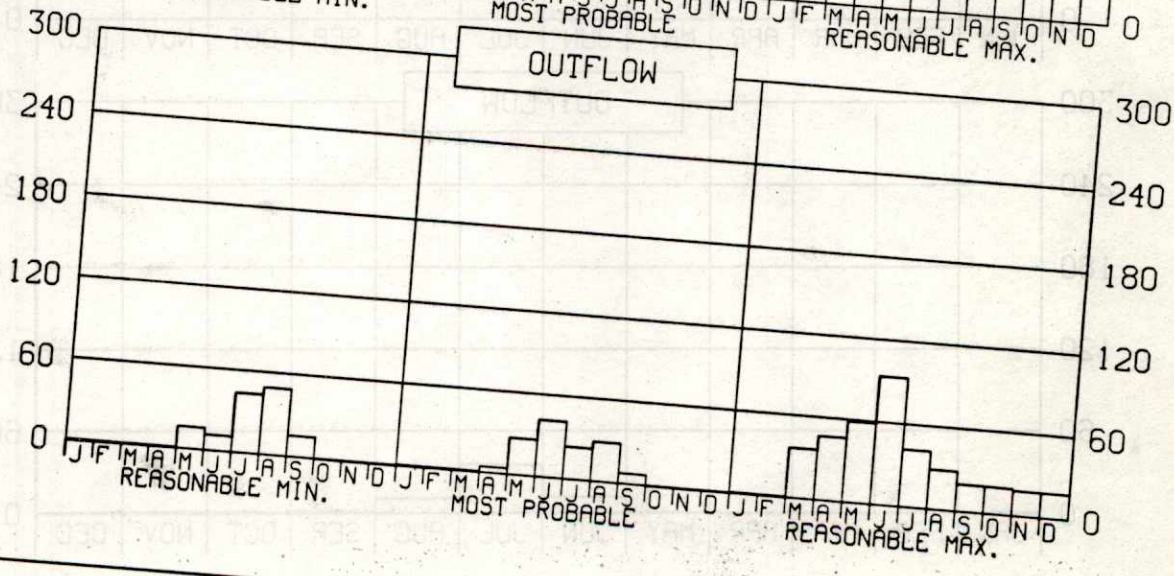


EXHIBIT 11A

LOVEWELL RESERVOIR OPERATION

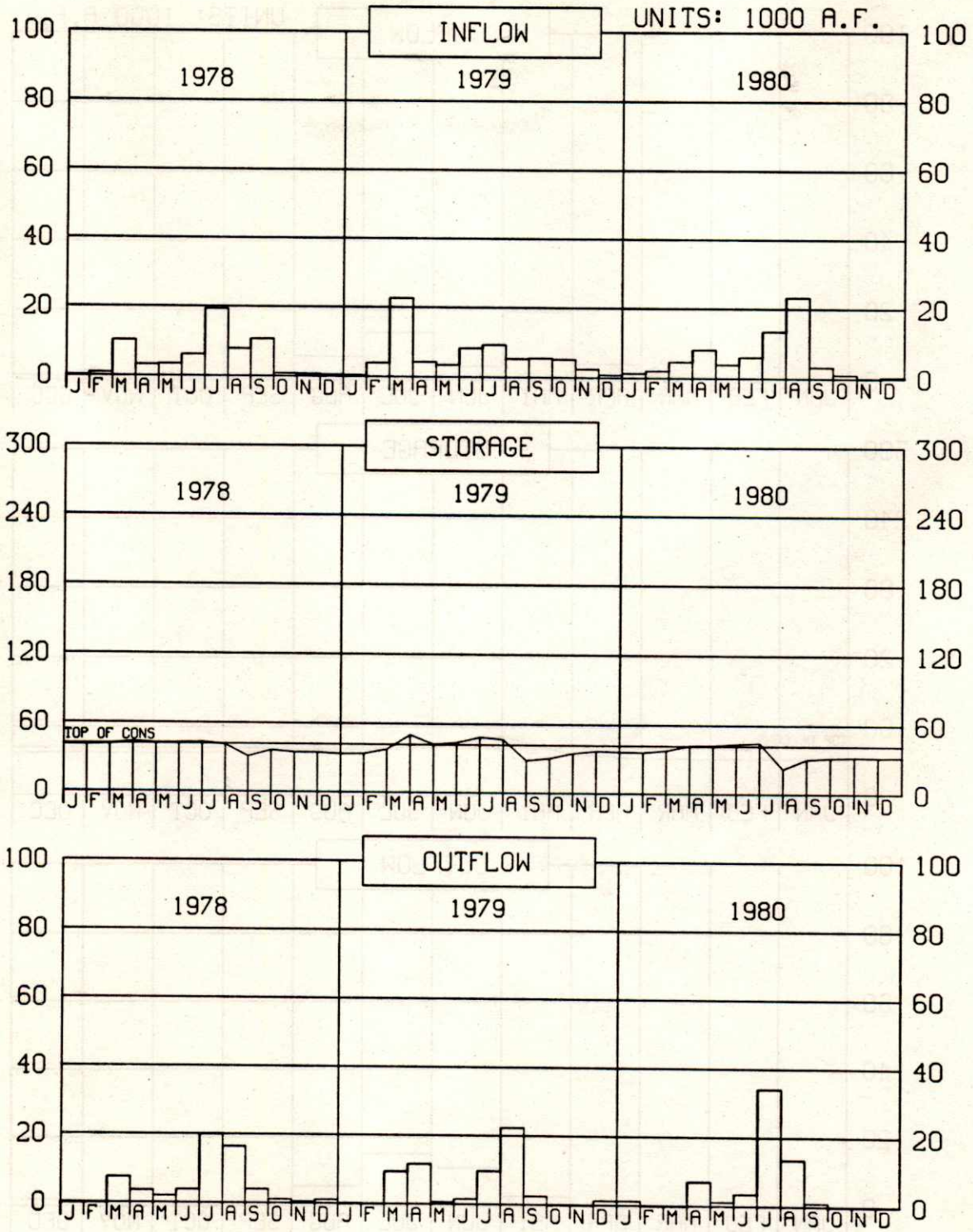


EXHIBIT 11B

LOVEWELL RESERVOIR 1981 OPERATION

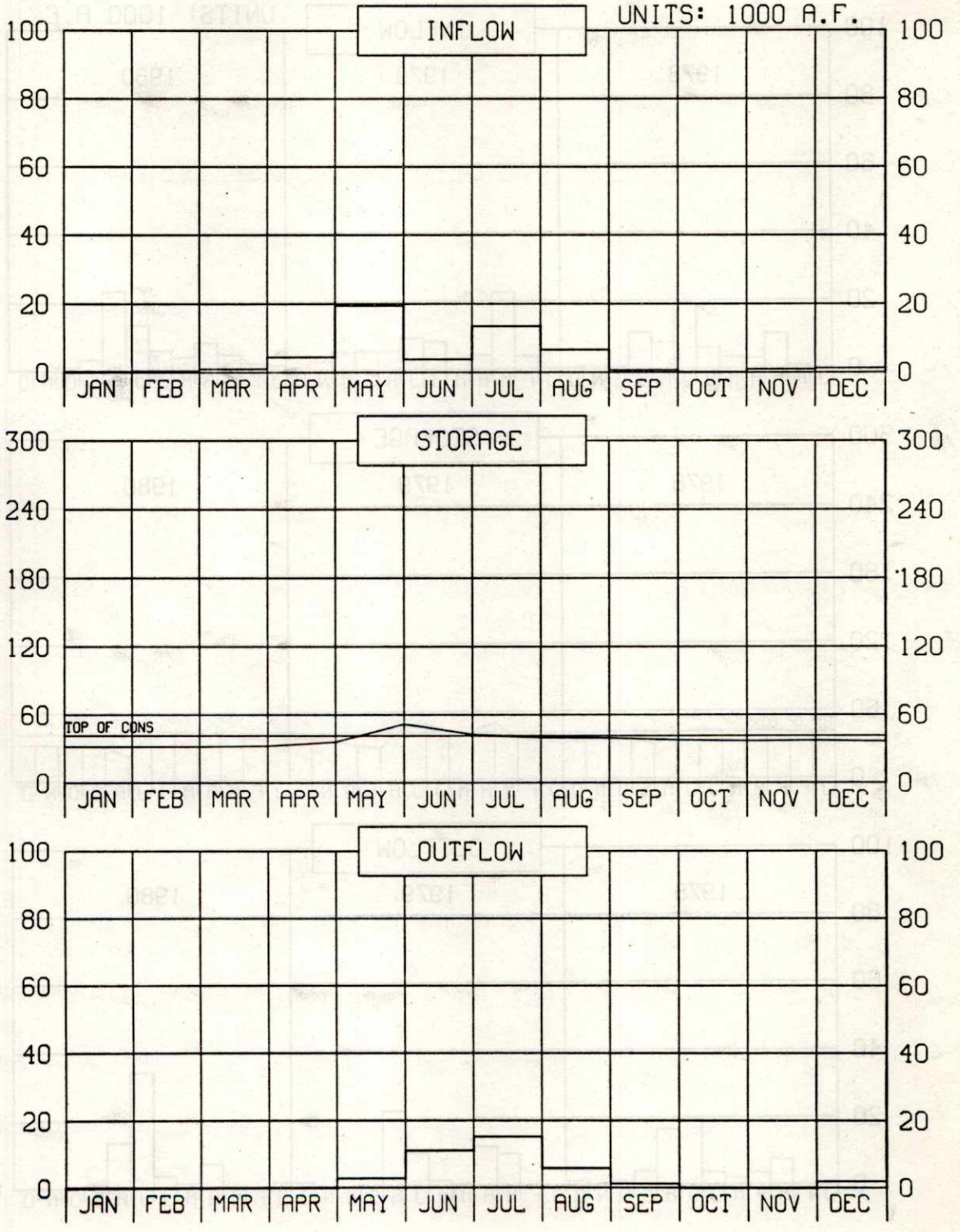


EXHIBIT 11C

LOVEWELL RESERVOIR

CAL YEAR 1982 OPERATION PLAN

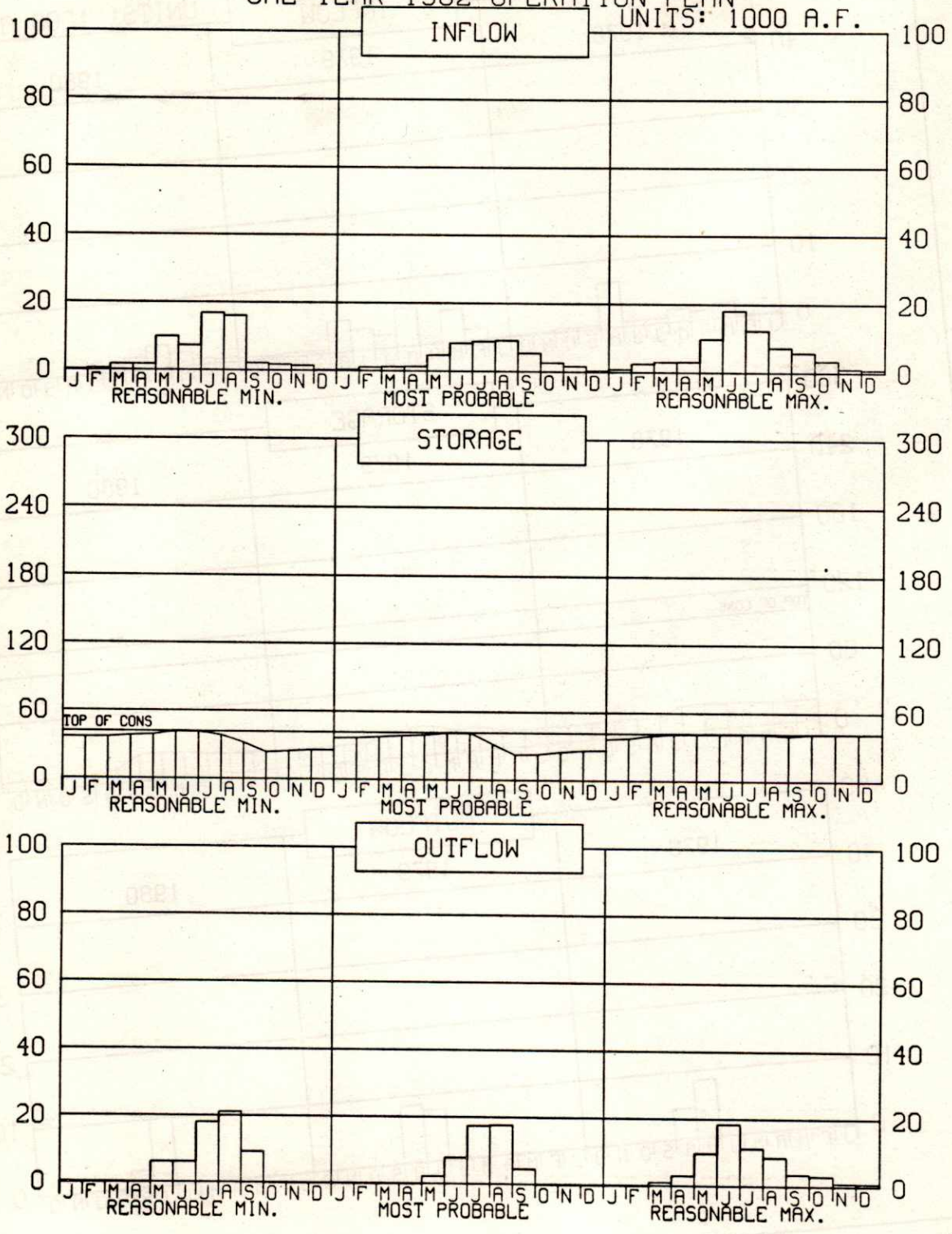


EXHIBIT 12A

KIRWIN RESERVOIR OPERATION

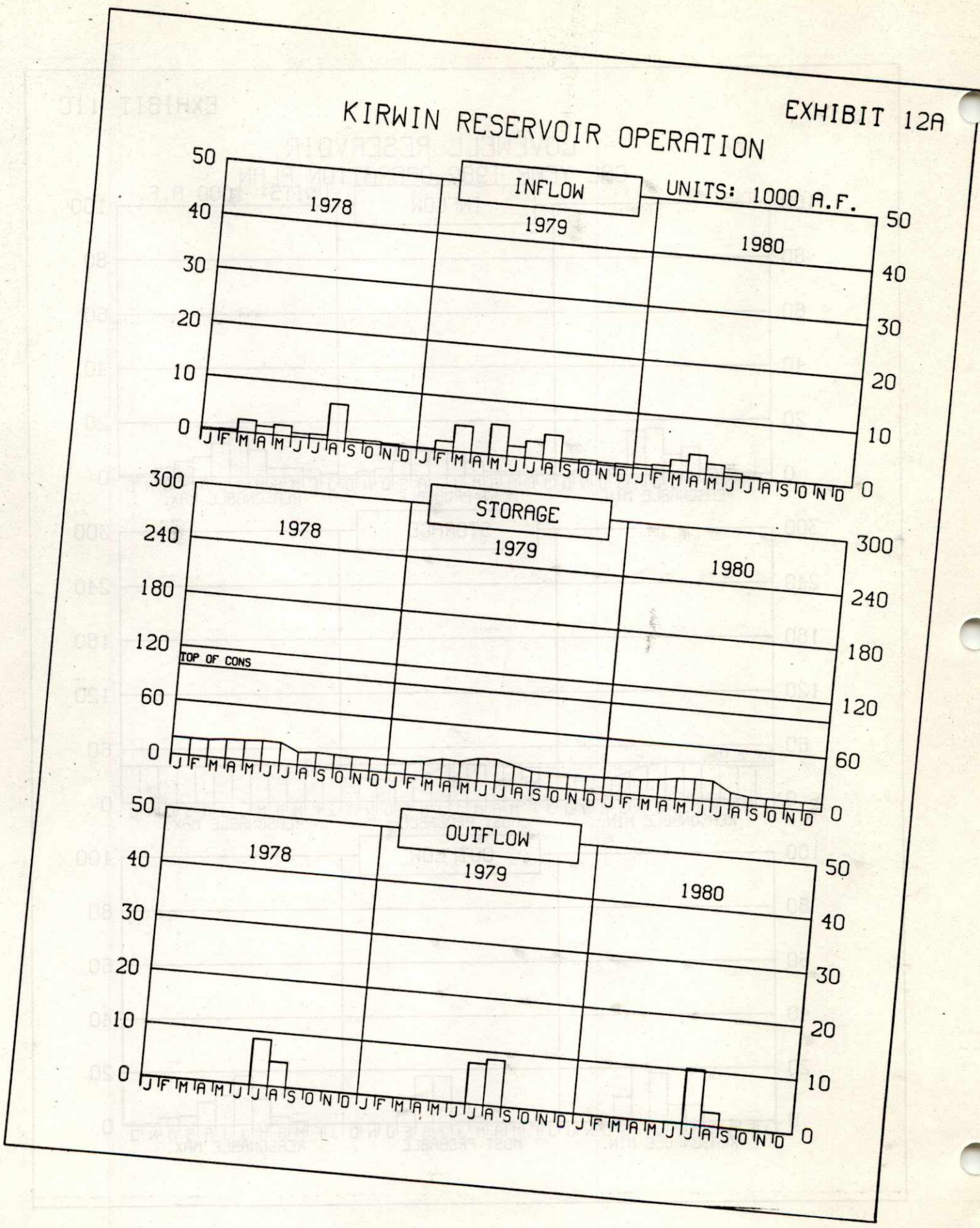


EXHIBIT 12B

KIRWIN RESERVOIR 1981 OPERATION

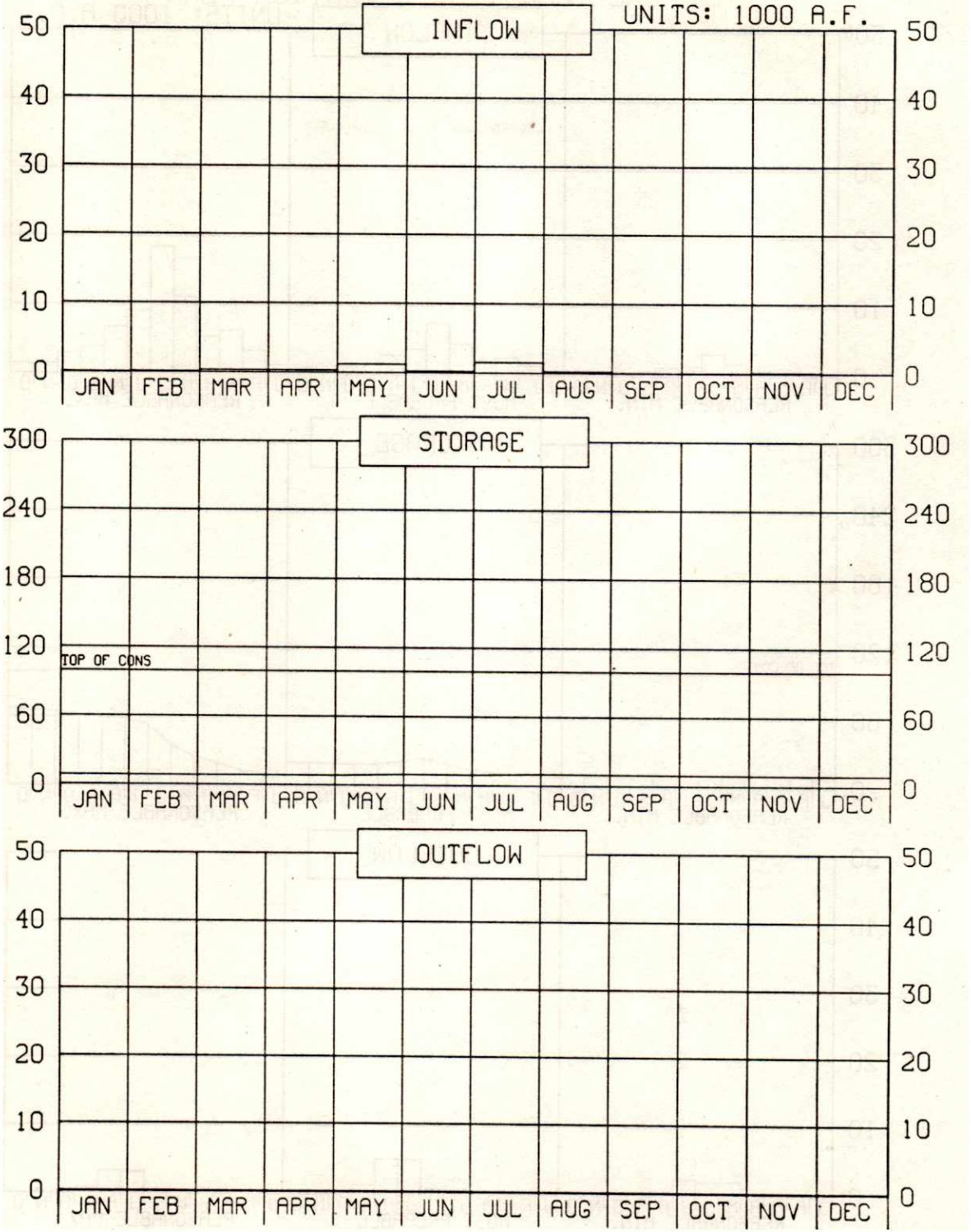


EXHIBIT 12C

KIRWIN RESERVOIR

CAL YEAR 1982 OPERATION PLAN

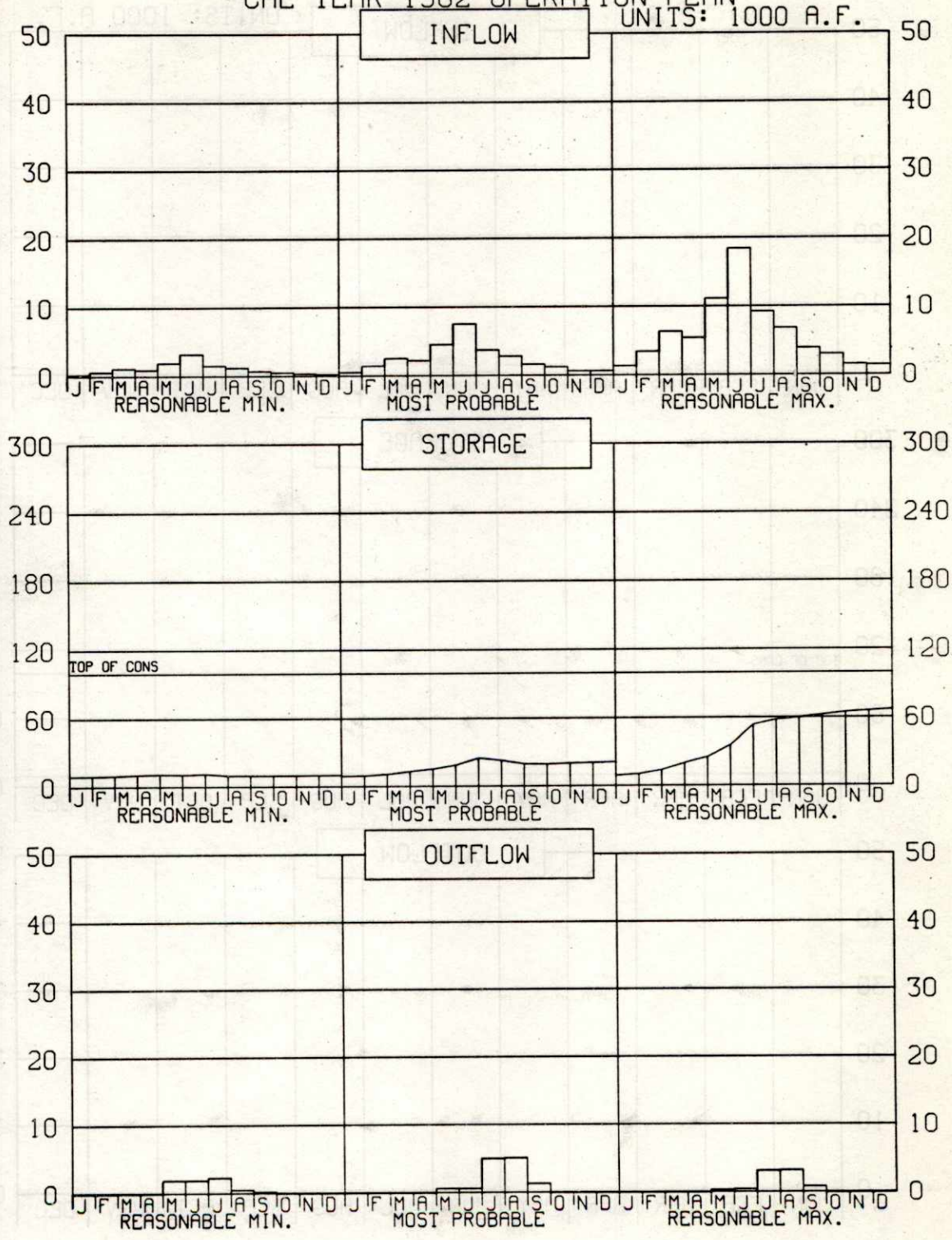


EXHIBIT 13A

WEBSTER RESERVOIR OPERATION

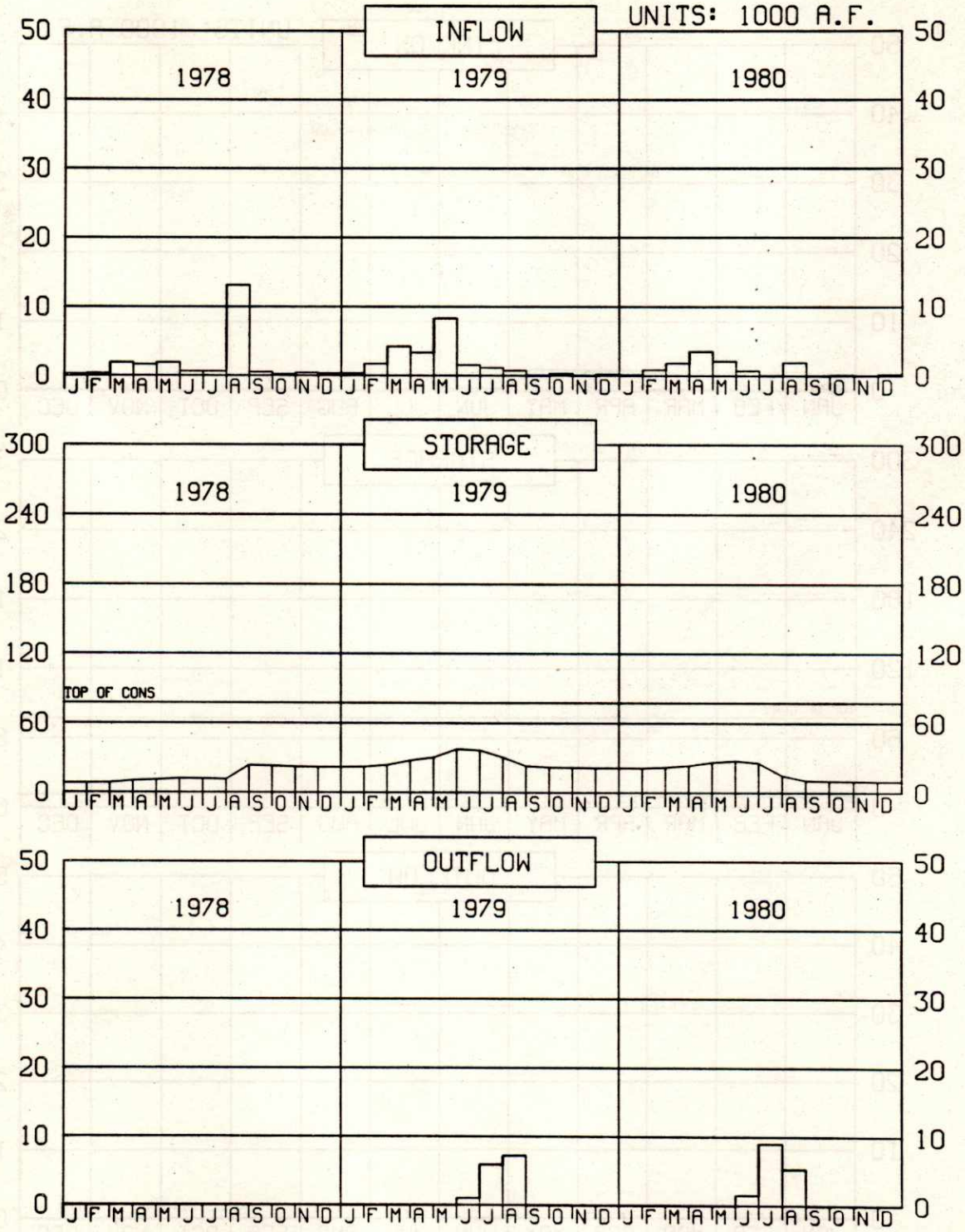


EXHIBIT 13B

WEBSTER RESERVOIR 1981 OPERATION

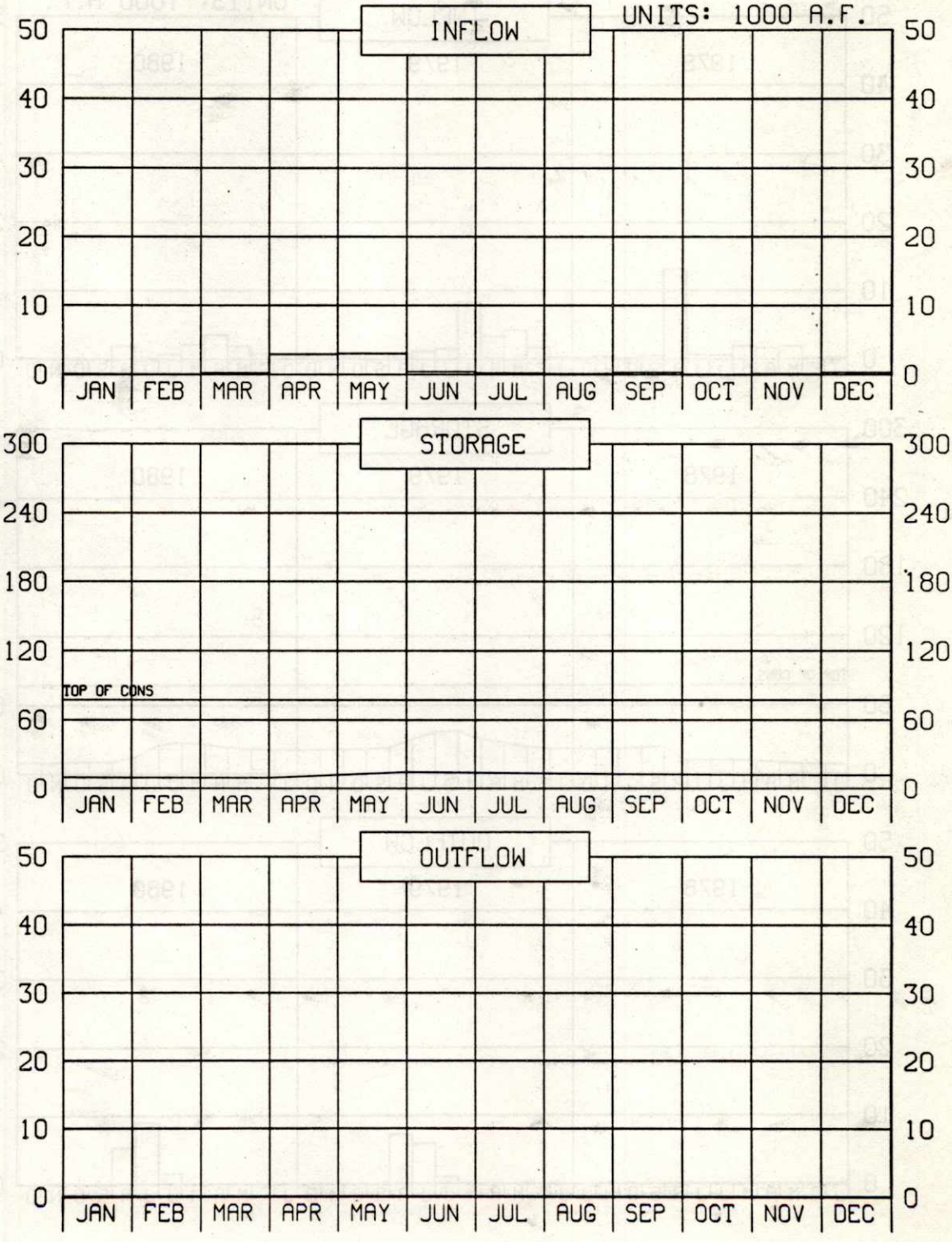


EXHIBIT 13C

WEBSTER RESERVOIR

CAL YEAR 1982 OPERATION PLAN

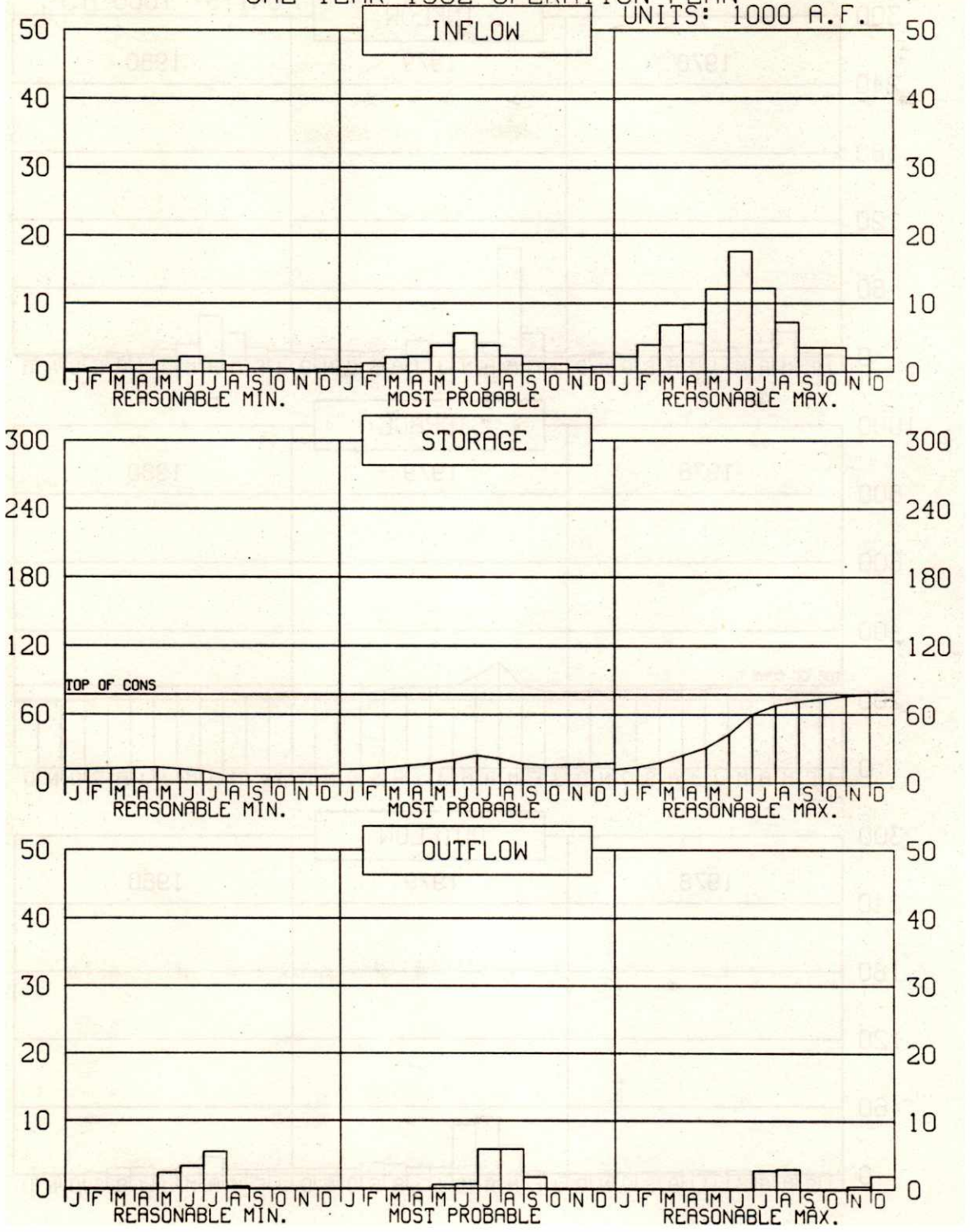


EXHIBIT 14A

WACONDA LAKE OPERATION

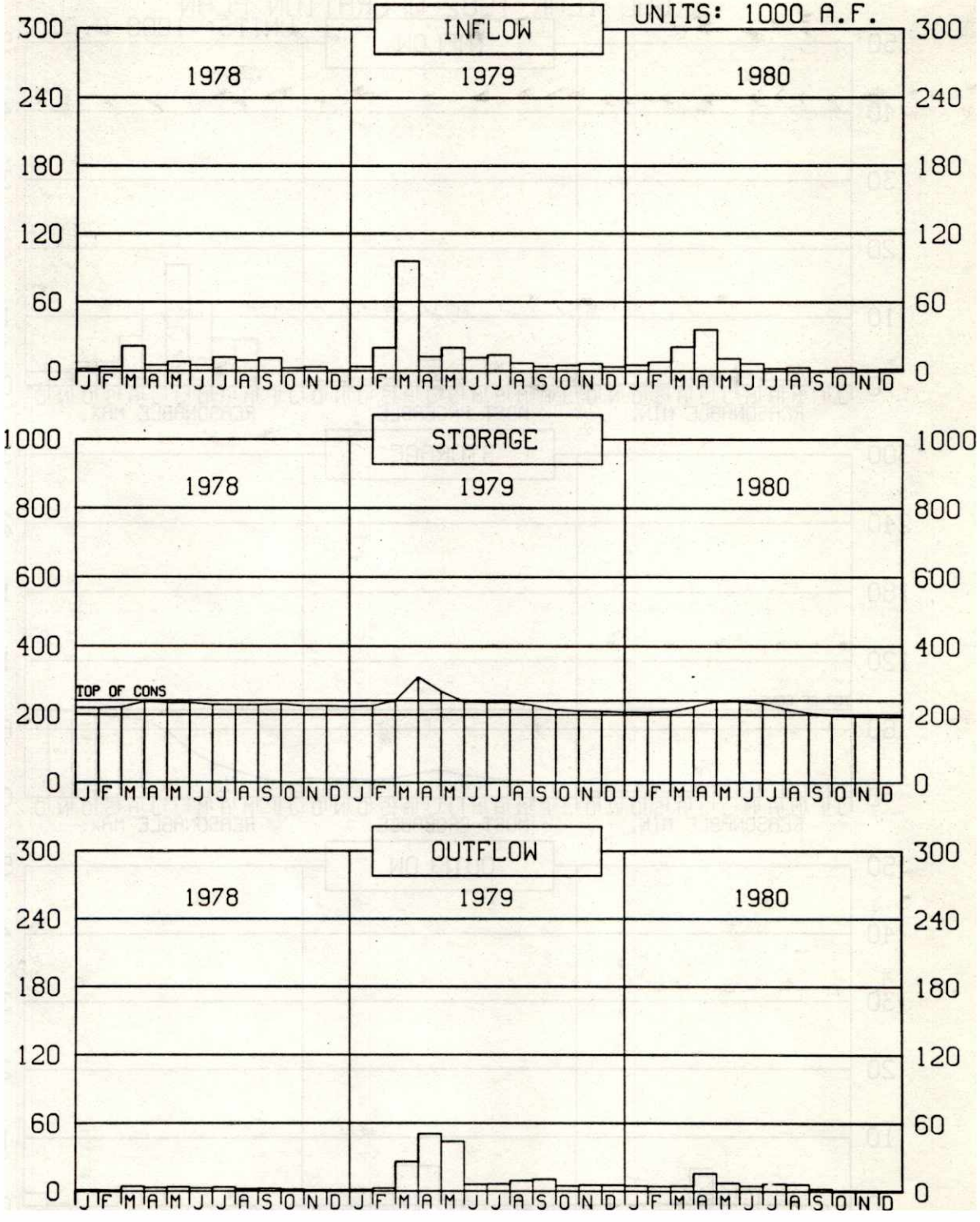


EXHIBIT 14B

WACONDA LAKE 1981 OPERATION

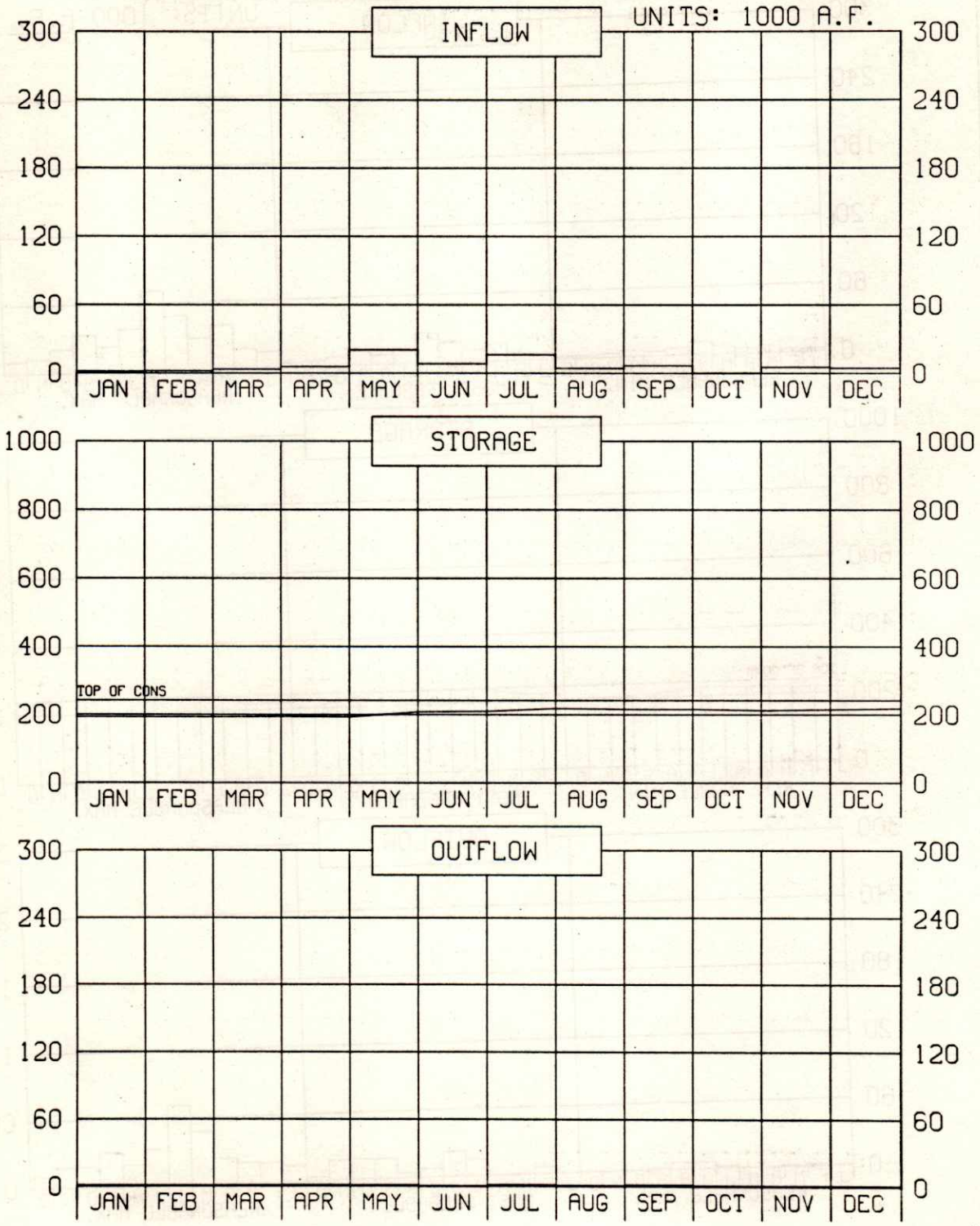


EXHIBIT 14C

WACONDA LAKE
CAL YEAR 1982 OPERATION PLAN

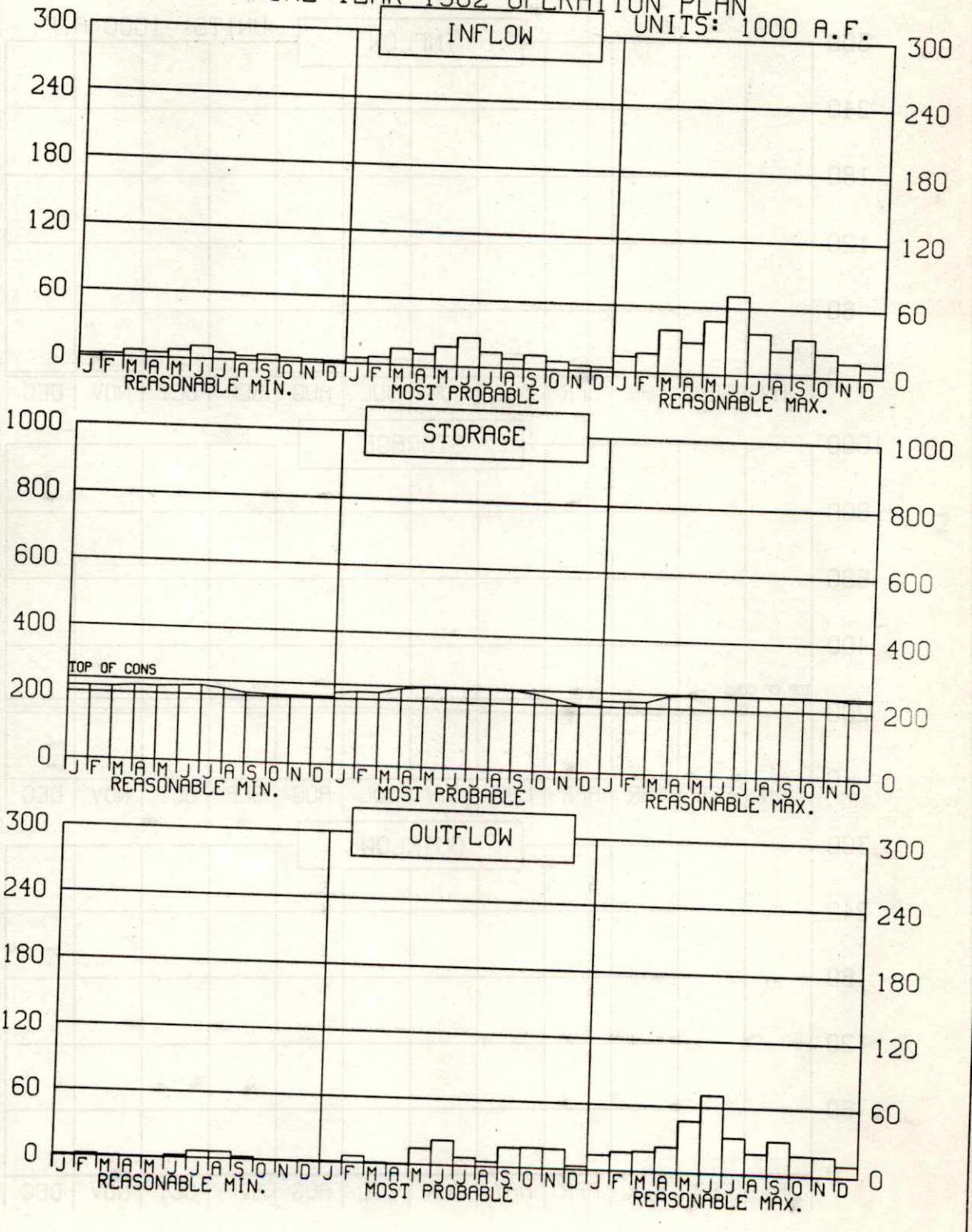


EXHIBIT 15A

CEDAR BLUFF RESERVOIR OPERATION

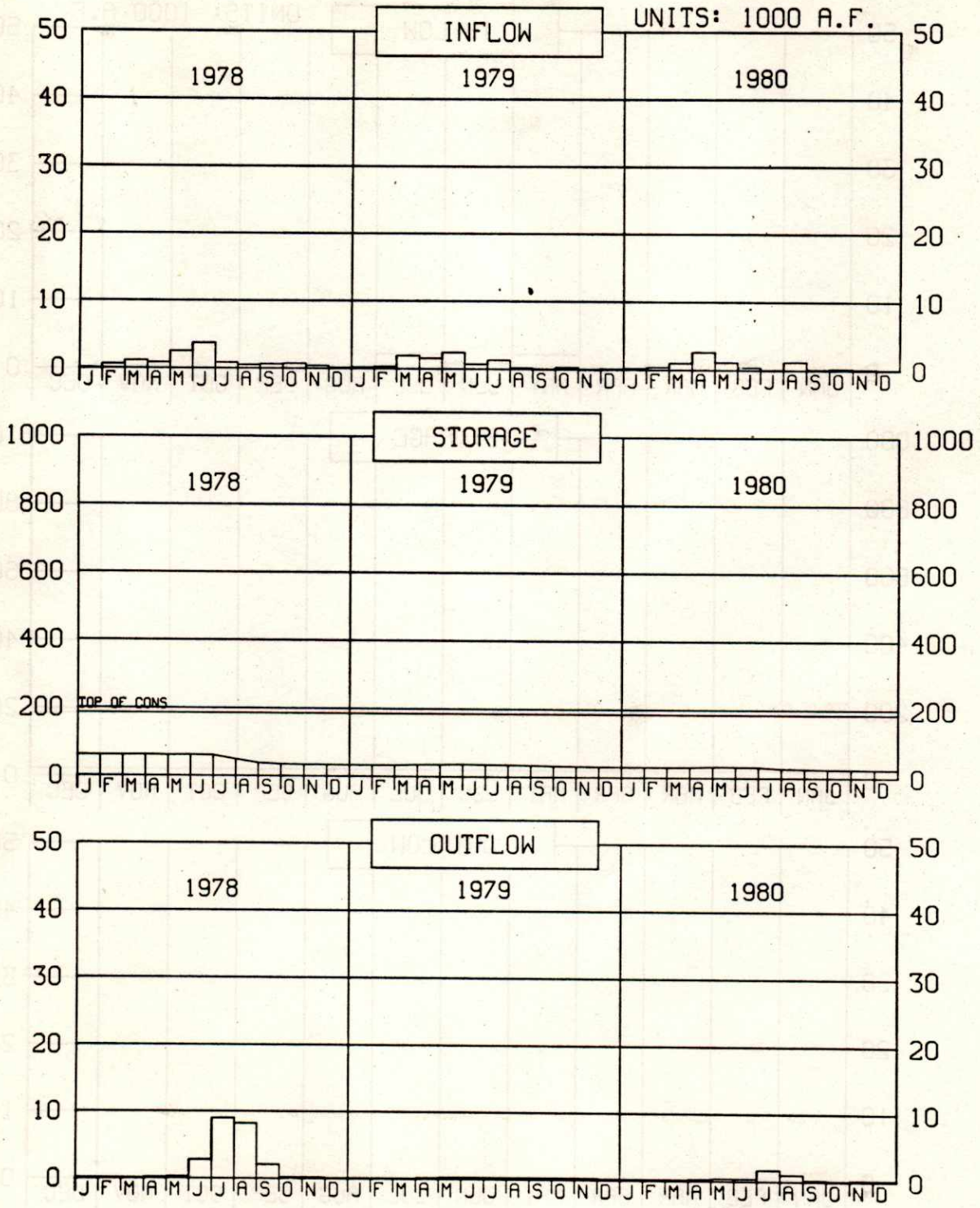


EXHIBIT 15B

CEDAR BLUFF RESERVOIR 1981 OPERATION

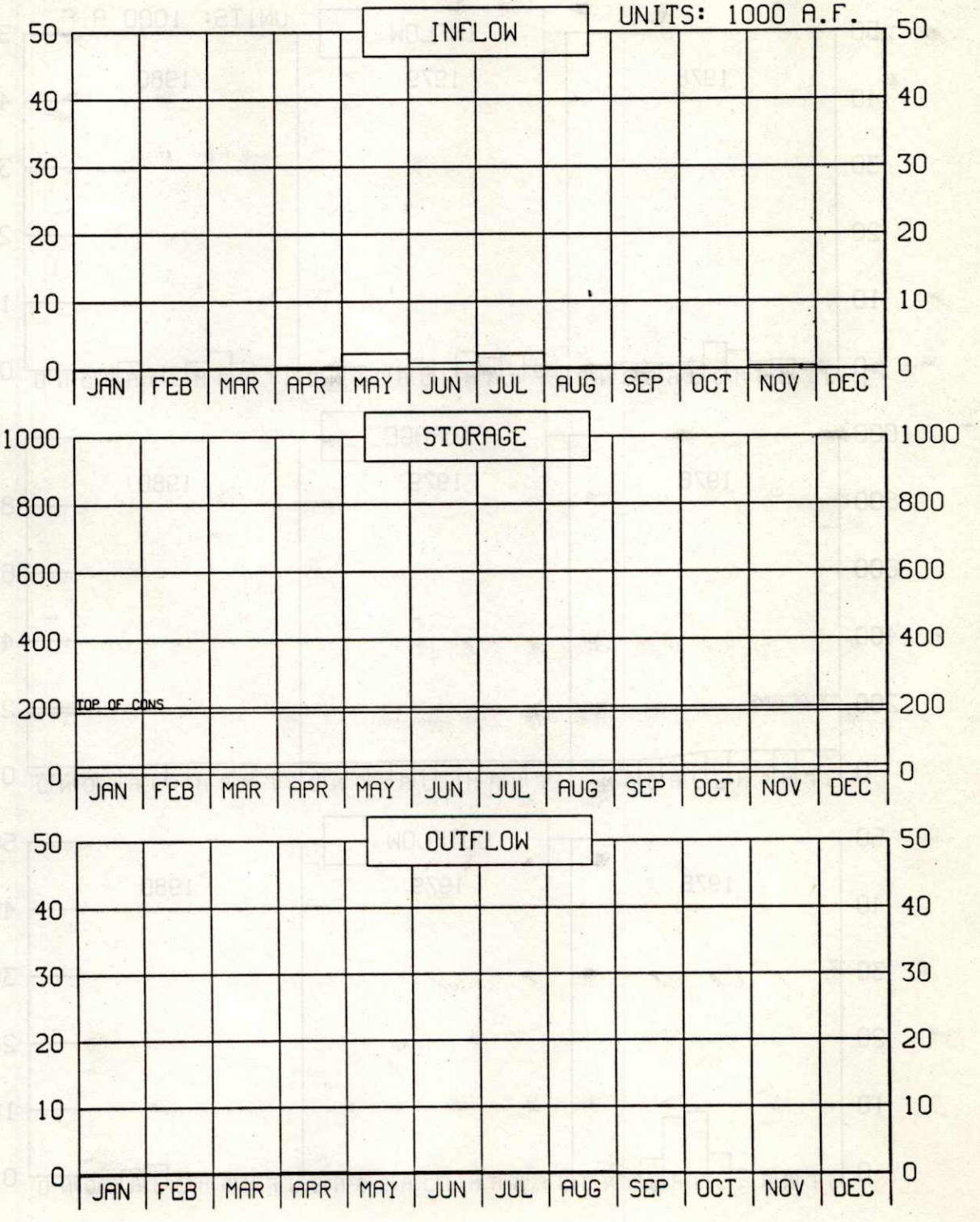


EXHIBIT 15C

CEDAR BLUFF RESERVOIR

CAL YEAR 1982 OPERATION PLAN

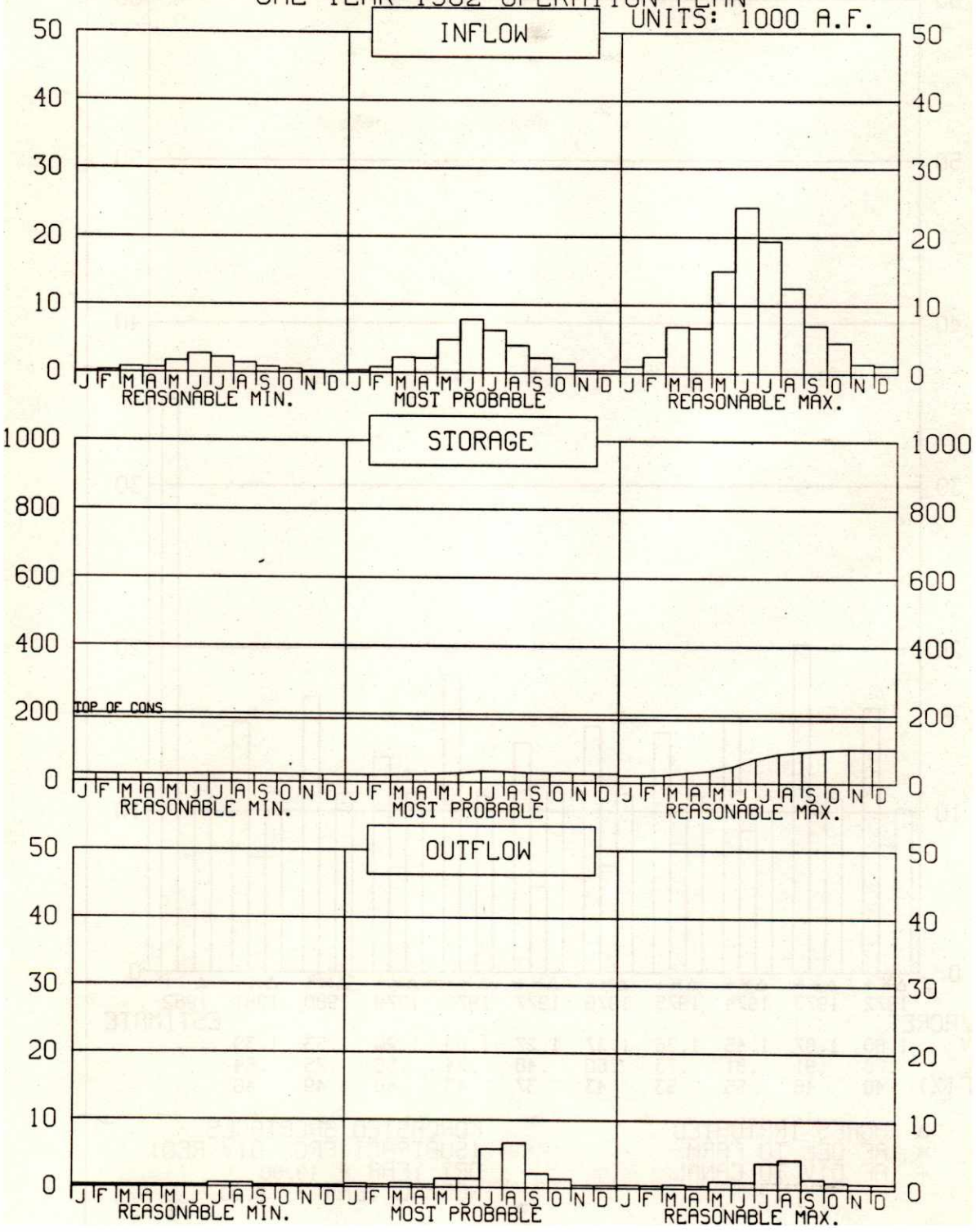


EXHIBIT 16

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
MIRAGE FLATS IRRIGATION DISTRICT

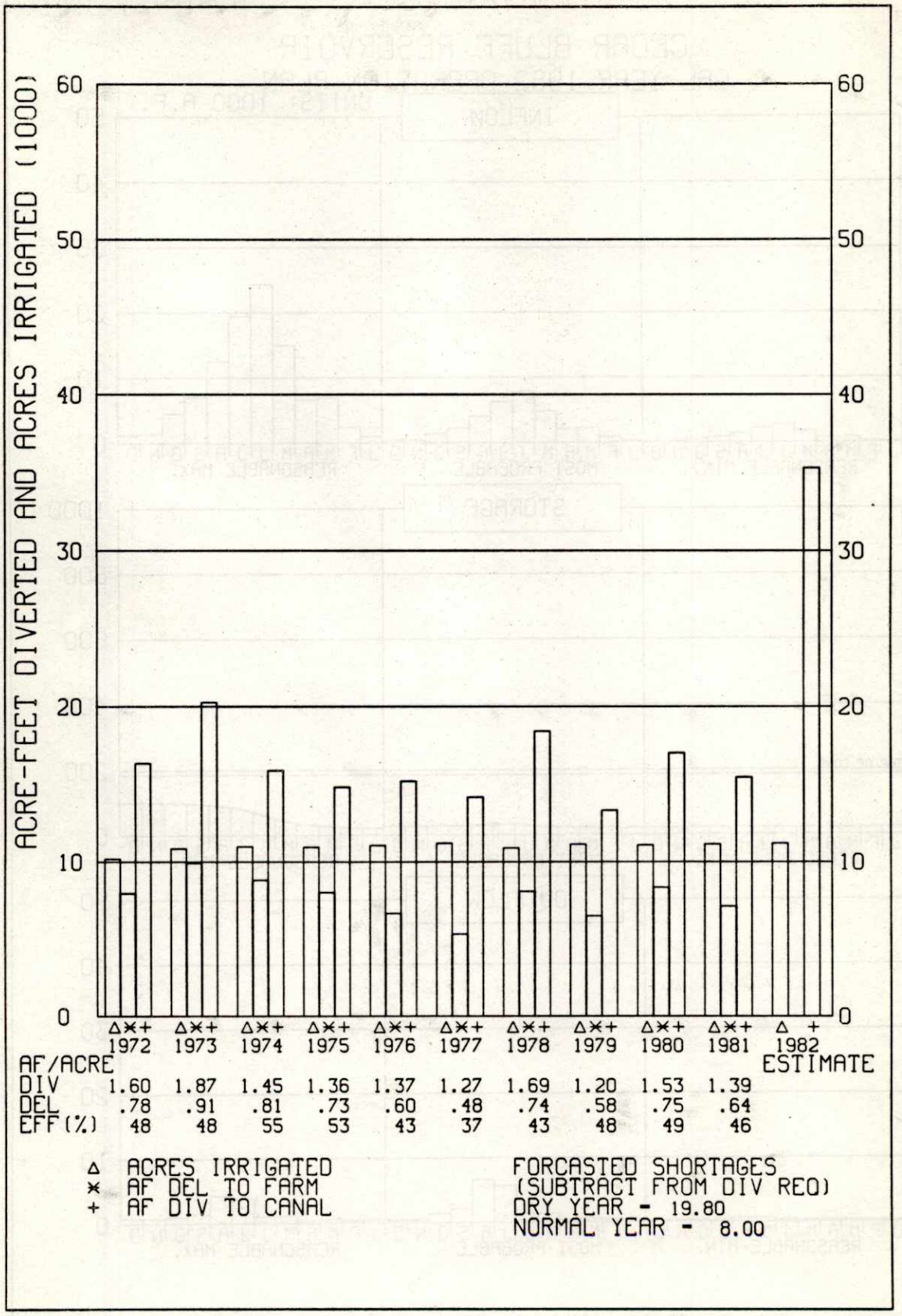
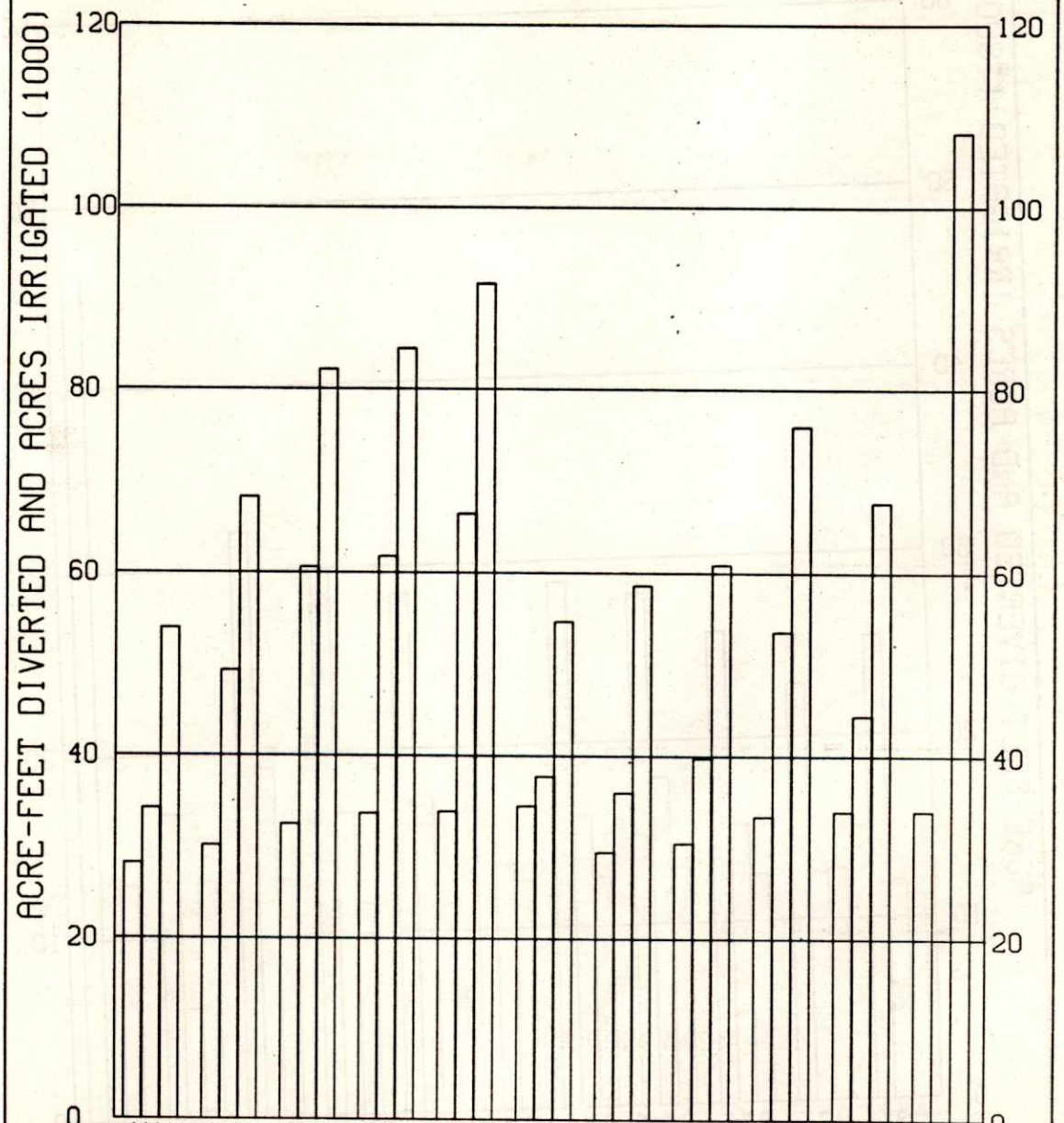


EXHIBIT 17

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
AINSWORTH IRRIGATION DISTRICT



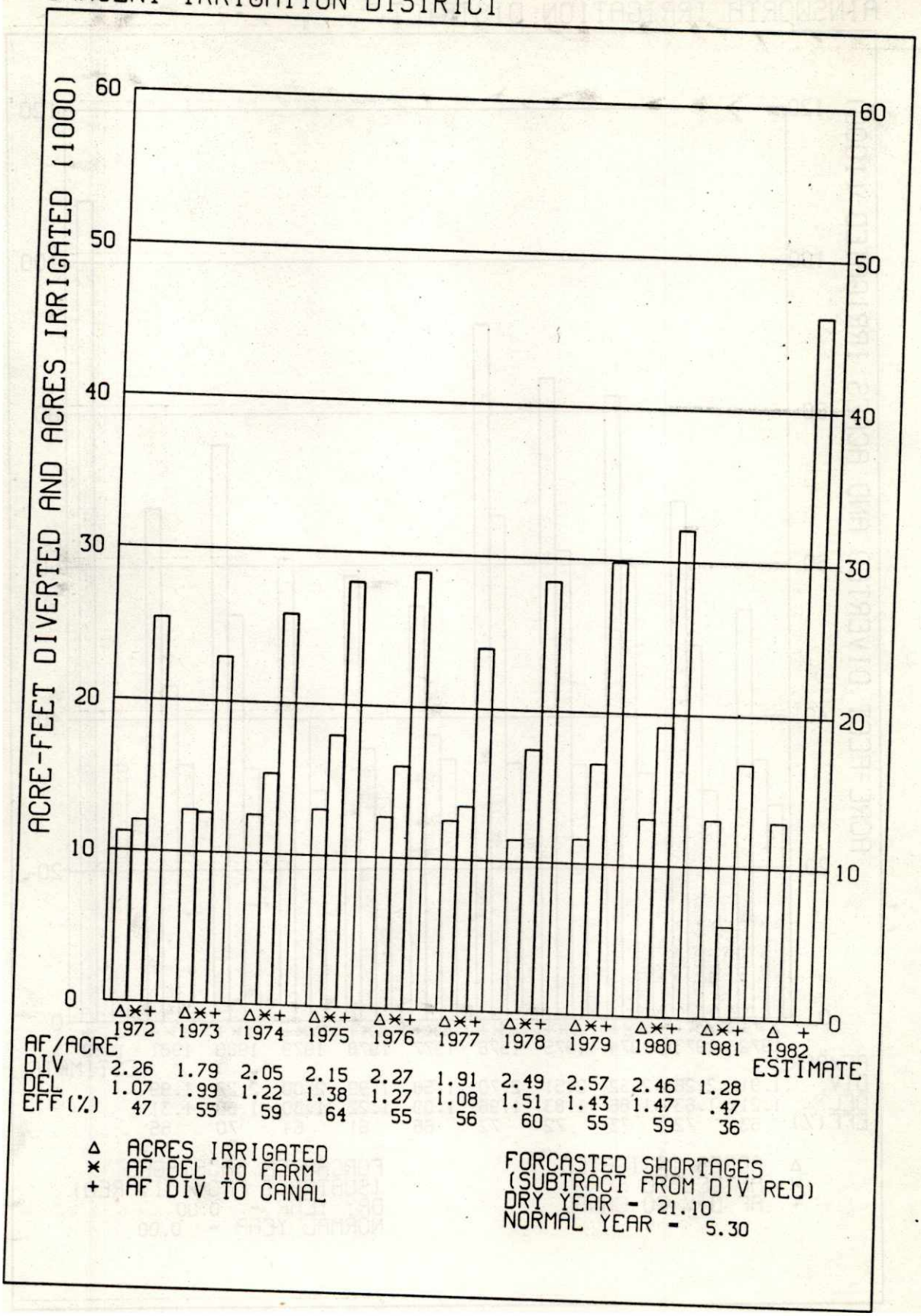
AF/ACRE	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
DIV	1.91	2.26	2.52	2.51	2.70	1.58	1.99	2.00	2.27	1.99
DEL	1.21	1.63	1.86	1.83	1.96	1.09	1.22	1.30	1.60	1.31
EFF (%)	63	72	73	72	72	68	61	64	70	65

Δ ACRES IRRIGATED
✱ AF DEL TO FARM
\+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR - 0.00
NORMAL YEAR - 0.00

EXHIBIT 18

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
SARGENT IRRIGATION DISTRICT



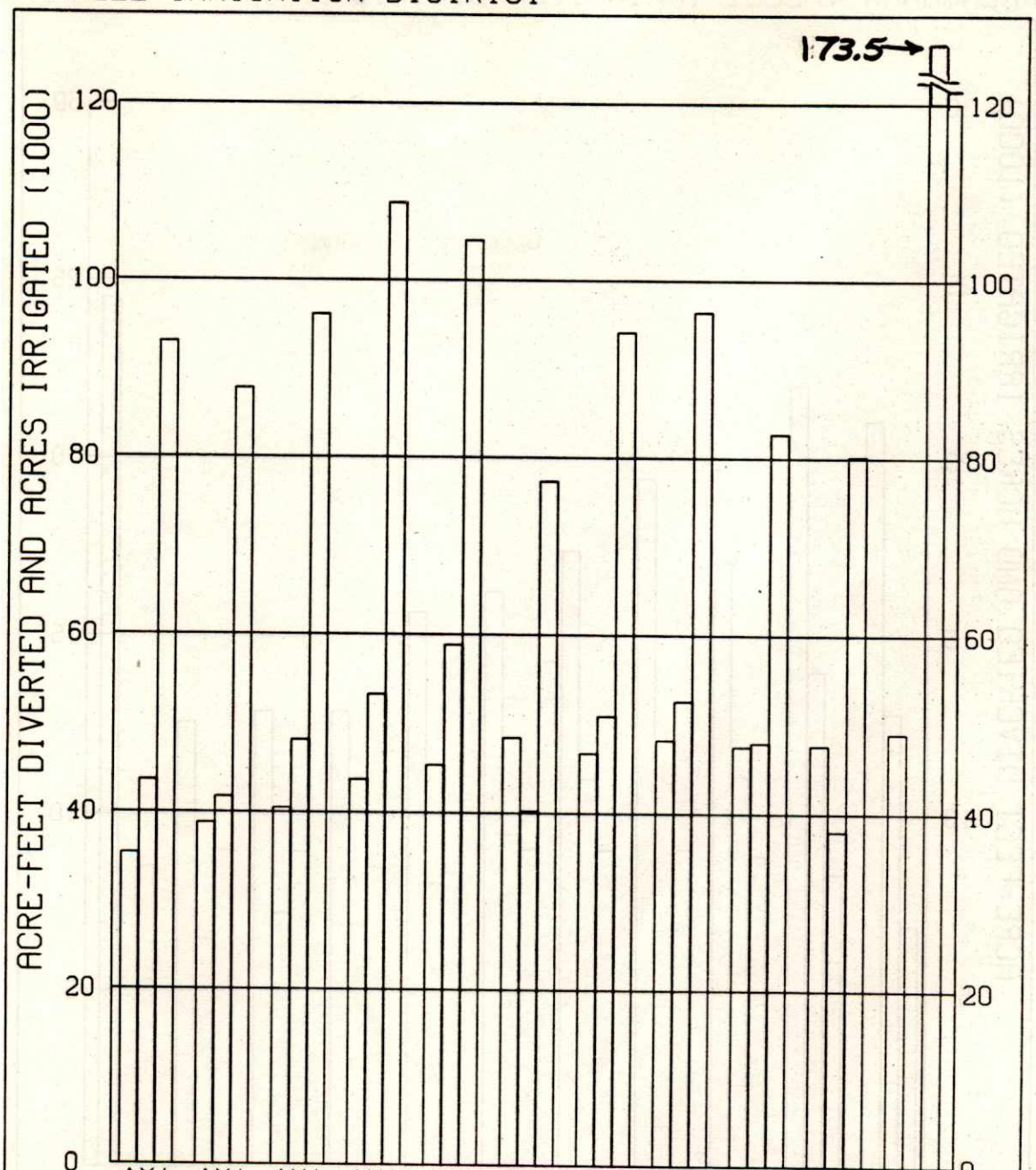
AF/ACRE	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
DIV	2.26	1.79	2.05	2.15	2.27	1.91	2.49	2.57	2.46	1.28
DEL	1.07	.99	1.22	1.38	1.27	1.08	1.51	1.43	1.47	.47
EFF(%)	47	55	59	64	55	56	60	55	59	36

Δ ACRES IRRIGATED
✱ AF DEL TO FARM
\+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR - 21.10
NORMAL YEAR - 5.30

EXHIBIT 19

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED FARWELL IRRIGATION DISTRICT



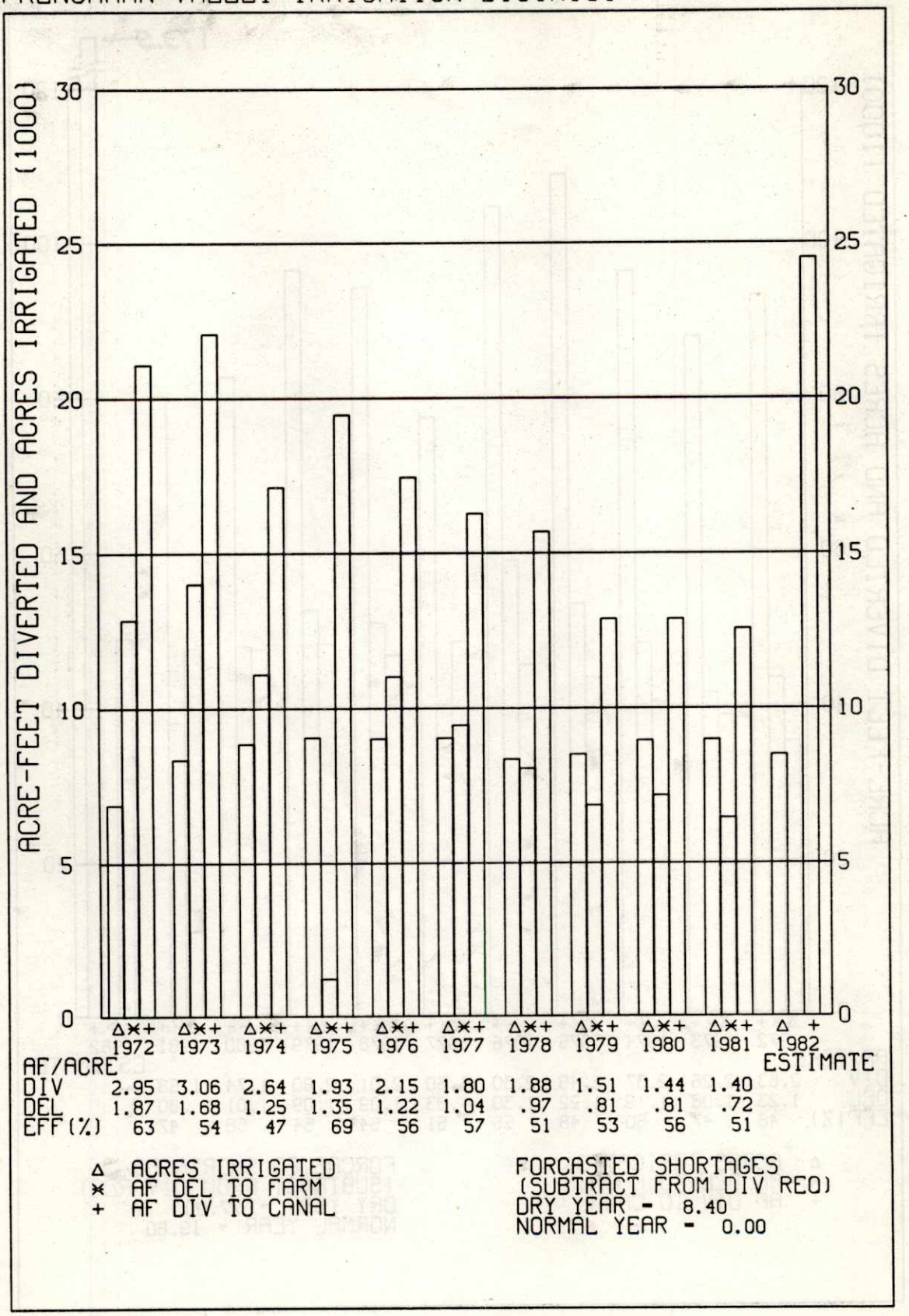
AF/ACRE	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
DIV	2.63	2.26	2.37	2.49	2.30	1.60	2.01	2.00	1.74	1.68
DEL	1.23	1.08	1.19	1.22	1.30	.83	1.09	1.09	1.01	.80
EFF (%)	46	47	50	48	56	51	54	54	58	47

Δ ACRES IRRIGATED
✱ AF DEL TO FARM
\+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR - 77.90
NORMAL YEAR - 19.60

EXHIBIT 20

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
FRENCHMAN VALLEY IRRIGATION DISTRICT



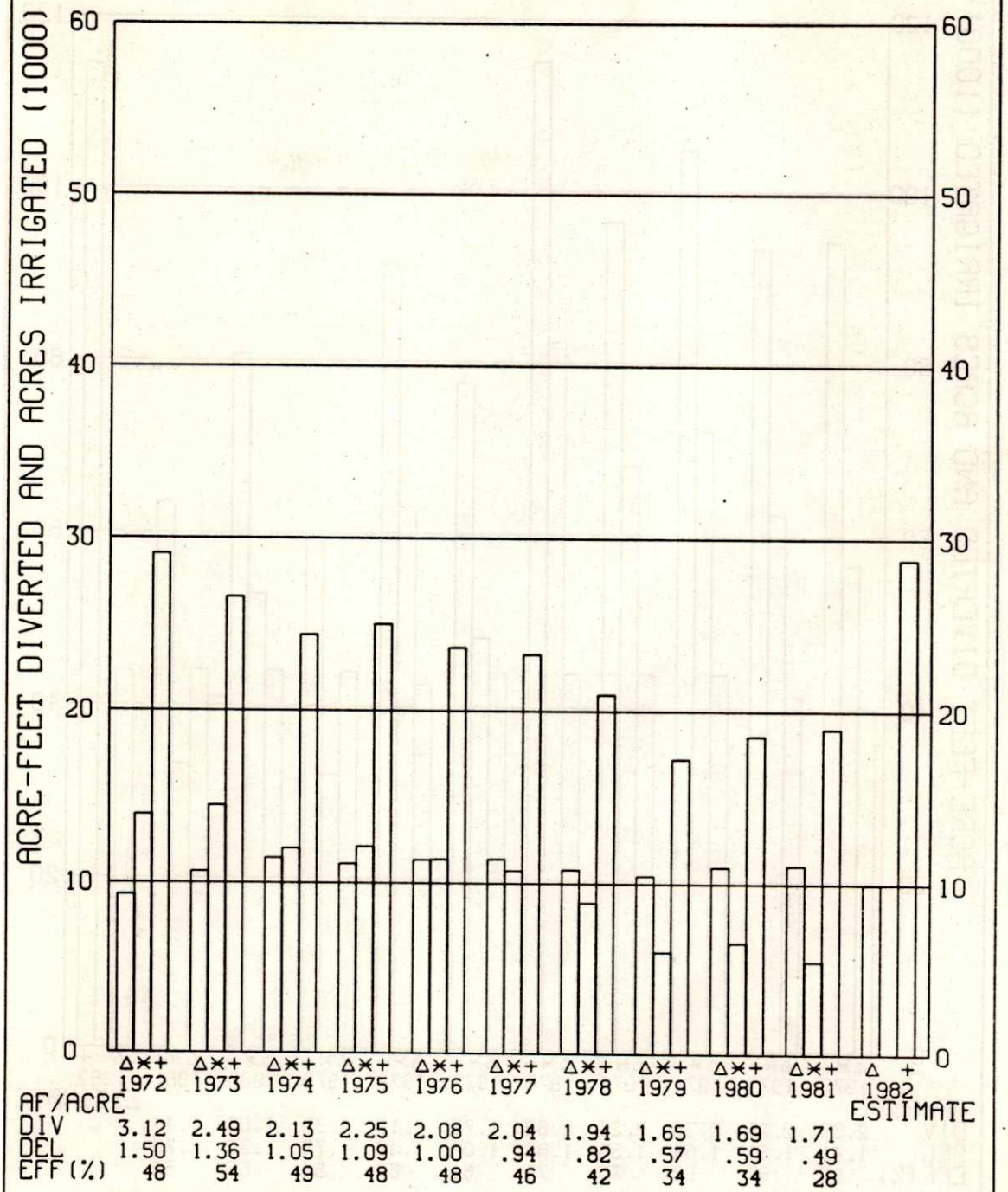
AF/ACRE	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
DIV	2.95	3.06	2.64	1.93	2.15	1.80	1.88	1.51	1.44	1.40
DEL	1.87	1.68	1.25	1.35	1.22	1.04	.97	.81	.81	.72
EFF (%)	63	54	47	69	56	57	51	53	56	51

Δ ACRES IRRIGATED
* AF DEL TO FARM
+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR - 8.40
NORMAL YEAR - 0.00

EXHIBIT 21

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
H AND RW IRRIGATION DISTRICT



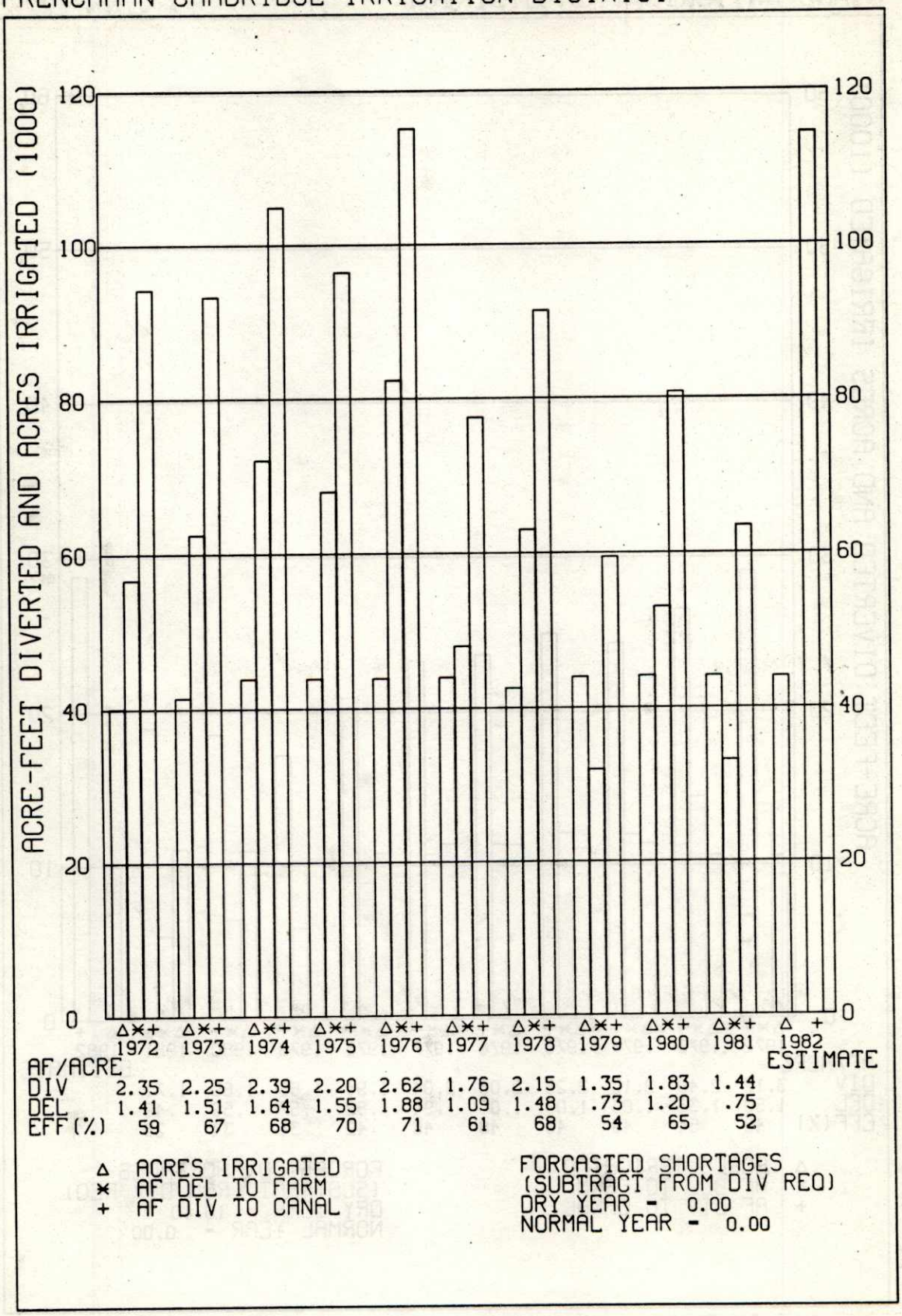
AF/ACRE	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
DIV	3.12	2.49	2.13	2.25	2.08	2.04	1.94	1.65	1.69	1.71
DEL	1.50	1.36	1.05	1.09	1.00	.94	.82	.57	.59	.49
EFF (%)	48	54	49	48	48	46	42	34	34	28

Δ ACRES IRRIGATED
✱ AF DEL TO FARM
\+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR - 10.10
NORMAL YEAR - 0.00

EXHIBIT 22

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
FRENCHMAN CAMBRIDGE IRRIGATION DISTRICT



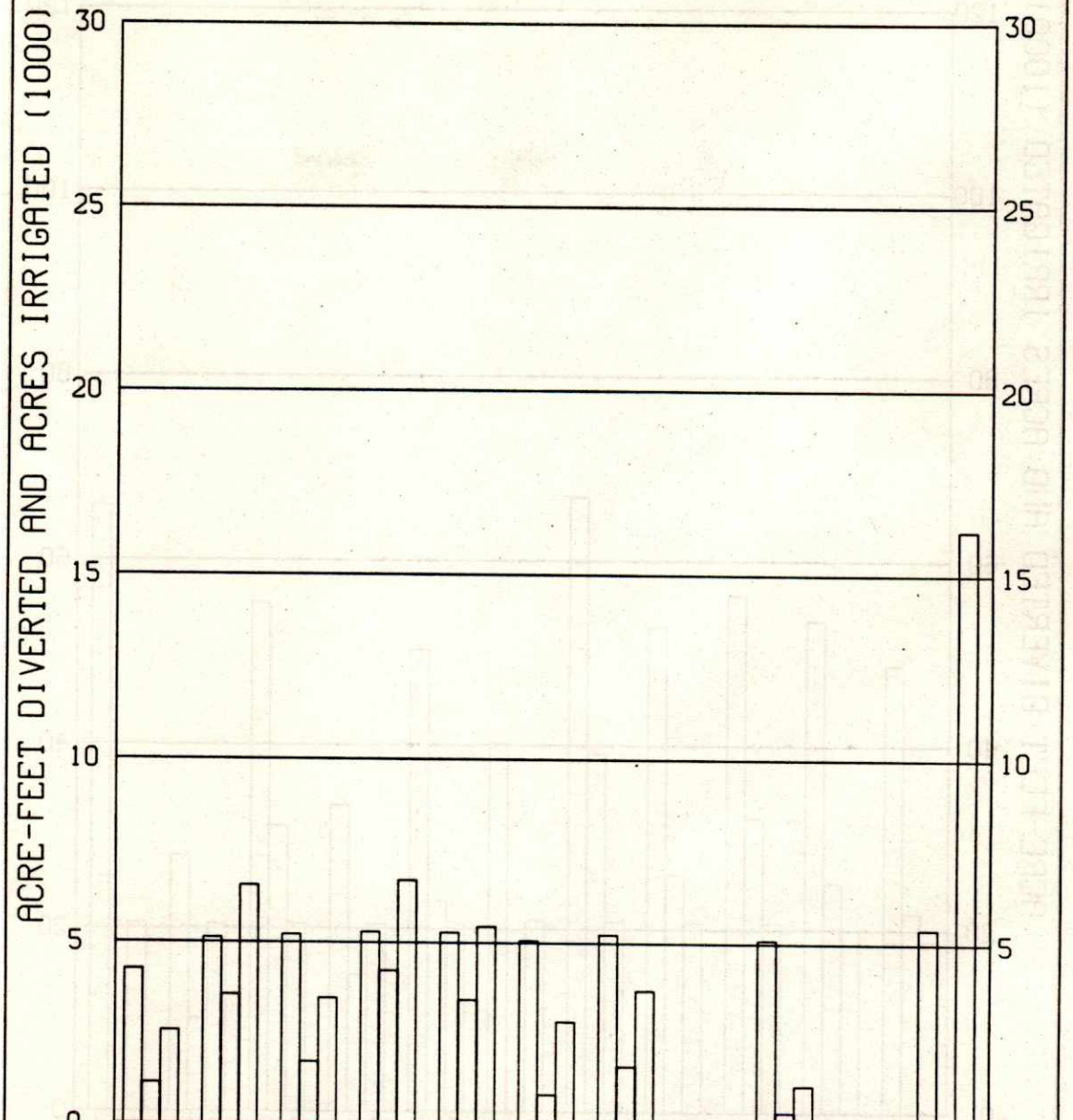
AF/ACRE	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
DIV	2.35	2.25	2.39	2.20	2.62	1.76	2.15	1.35	1.83	1.44
DEL	1.41	1.51	1.64	1.55	1.88	1.09	1.48	.73	1.20	.75
EFF(%)	59	67	68	70	71	61	68	54	65	52

Δ ACRES IRRIGATED
✱ AF DEL TO FARM
\+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR - 0.00
NORMAL YEAR - 0.00

EXHIBIT 23

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
ALMENA IRRIGATION DISTRICT



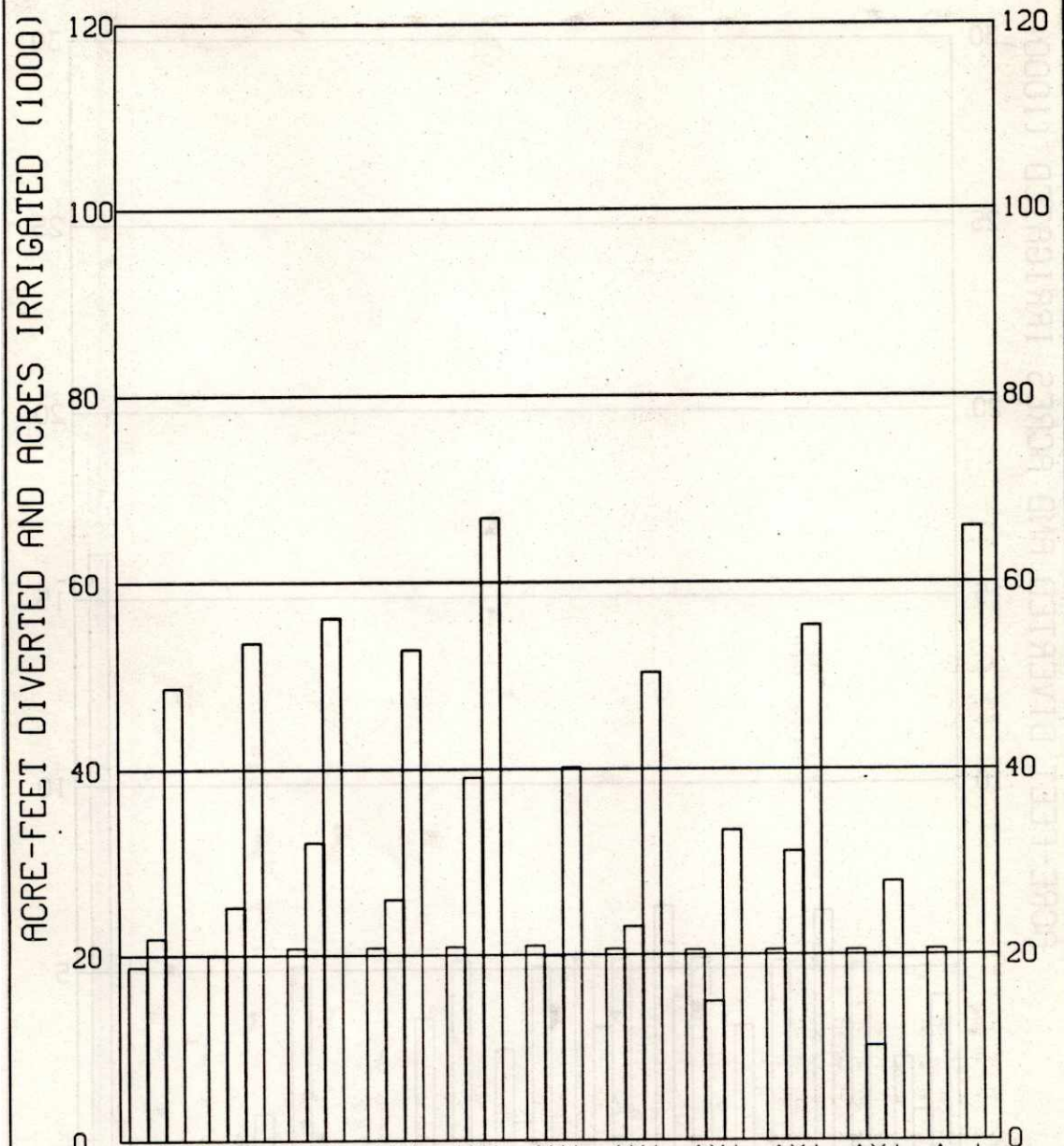
AF/ACRE	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982 ESTIMATE
DIV	.61	1.28	.67	1.27	1.03	.56	.71	0.00	.22	0.00	
DEL	.27	.70	.33	.80	.65	.17	.31	0.00	.08	0.00	
EFF (%)	44	54	49	62	63	30	43	0	36	0	

Δ ACRES IRRIGATED
✱ AF DEL TO FARM
\+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR - 19.20
NORMAL YEAR - 5.30

EXHIBIT 24

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED BOSTWICK IRRIGATION DISTRICT IN NEBRASKA



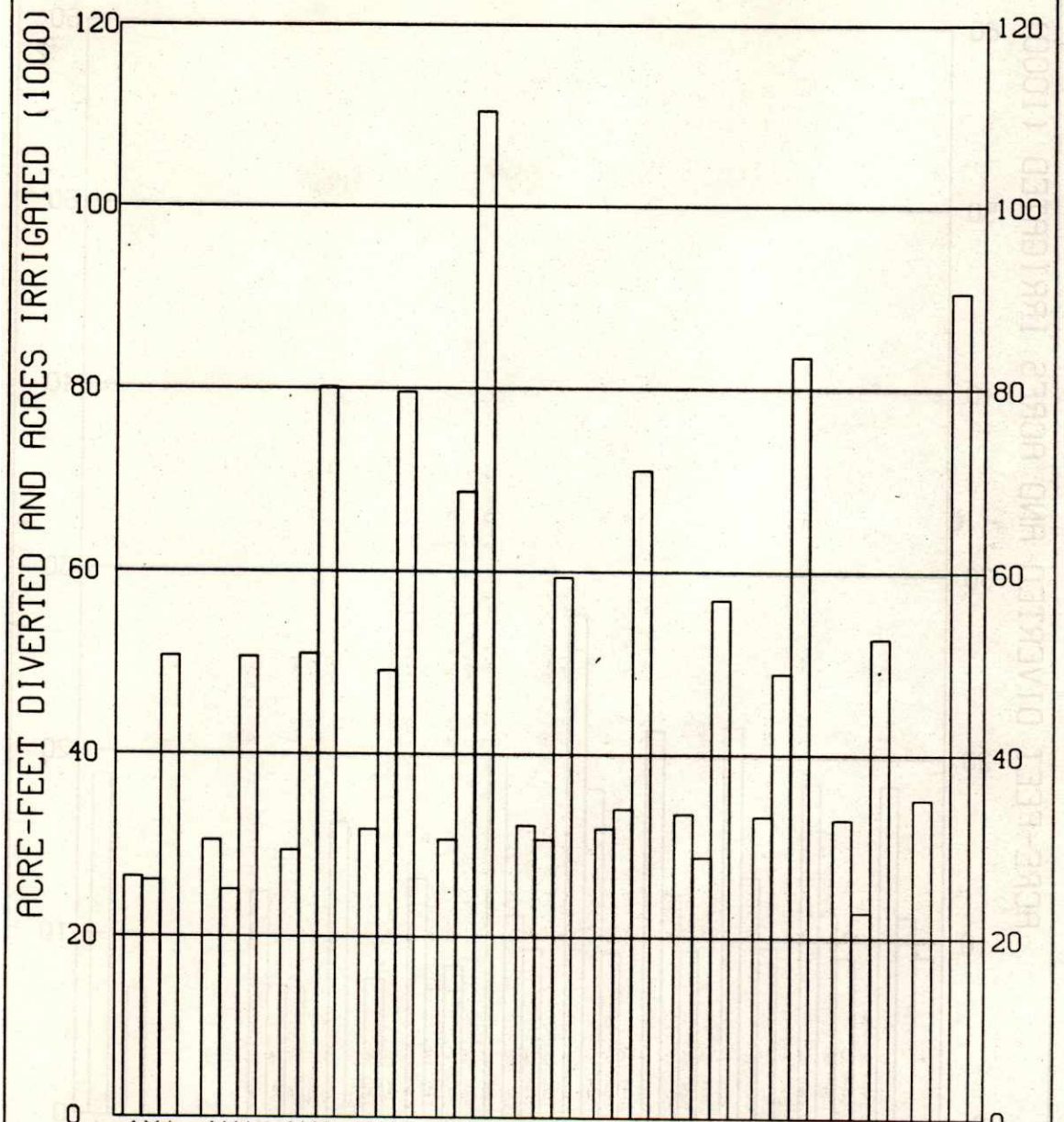
AF/ACRE	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
DIV	2.60	2.69	2.71	2.54	3.20	1.92	2.44	1.63	2.70	1.36
DEL	1.16	1.26	1.55	1.25	1.87	.95	1.12	.97	1.52	.50
EFF (%)	44	46	57	49	58	49	45	59	56	36

Δ ACRES IRRIGATED
✱ AF DEL TO FARM
\+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR - 0.00
NORMAL YEAR - 0.00

EXHIBIT 25

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
KANSAS-BOSTWICK IRRIGATION DISTRICT



AF/ACRE	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
DIV	1.91	1.66	2.72	2.50	3.58	1.84	2.23	1.70	2.51	1.60
DEL	.98	.82	1.73	1.55	2.23	.95	1.07	.86	1.47	.69
EFF (%)	51	49	63	61	62	51	47	50	58	43

Δ ACRES IRRIGATED
✱ AF DEL TO FARM
\+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR - 0.00
NORMAL YEAR - 0.00

EXHIBIT 26

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
KIRWIN IRRIGATION DISTRICT

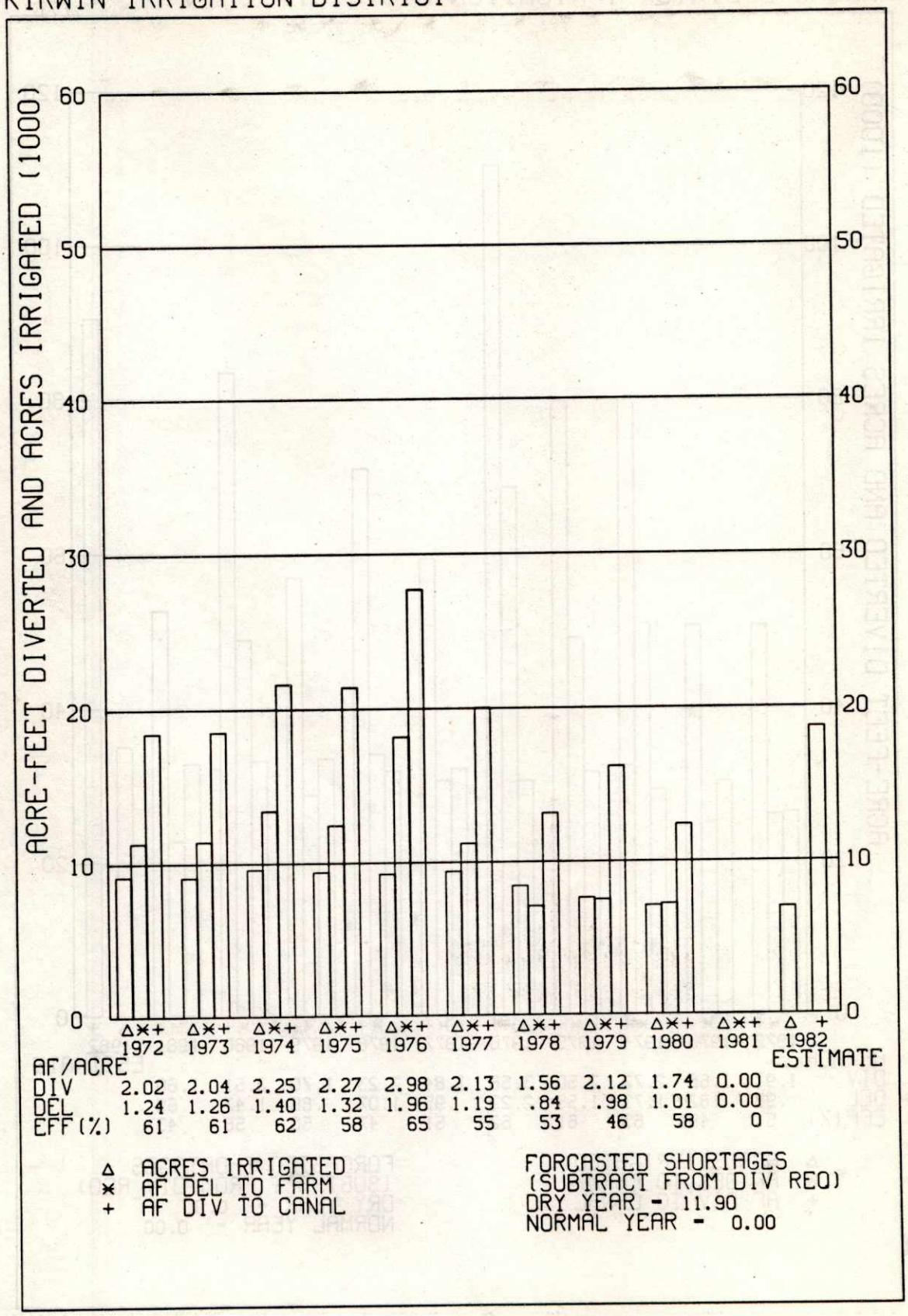
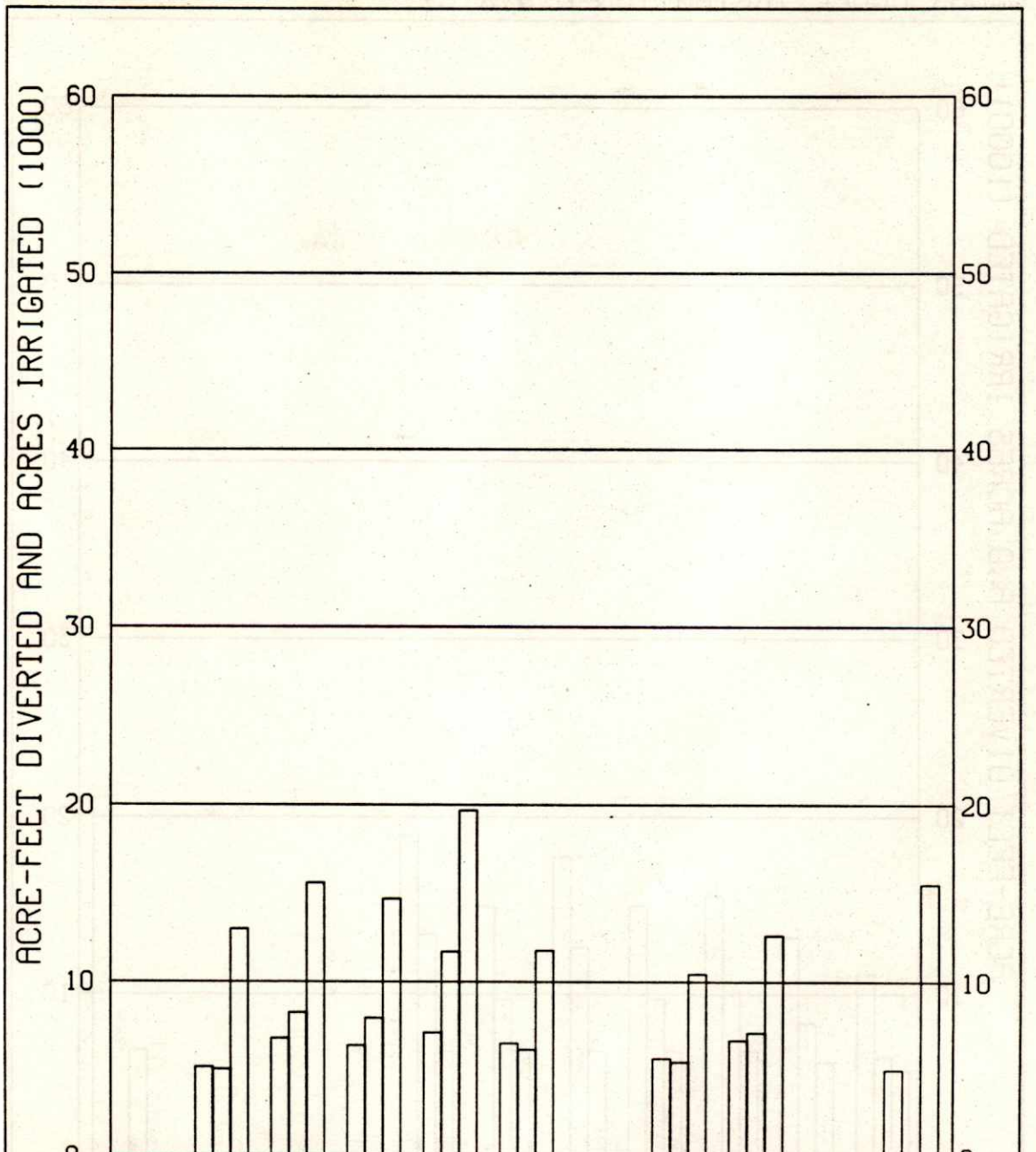


EXHIBIT 27

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
WEBSTER IRRIGATION DISTRICT



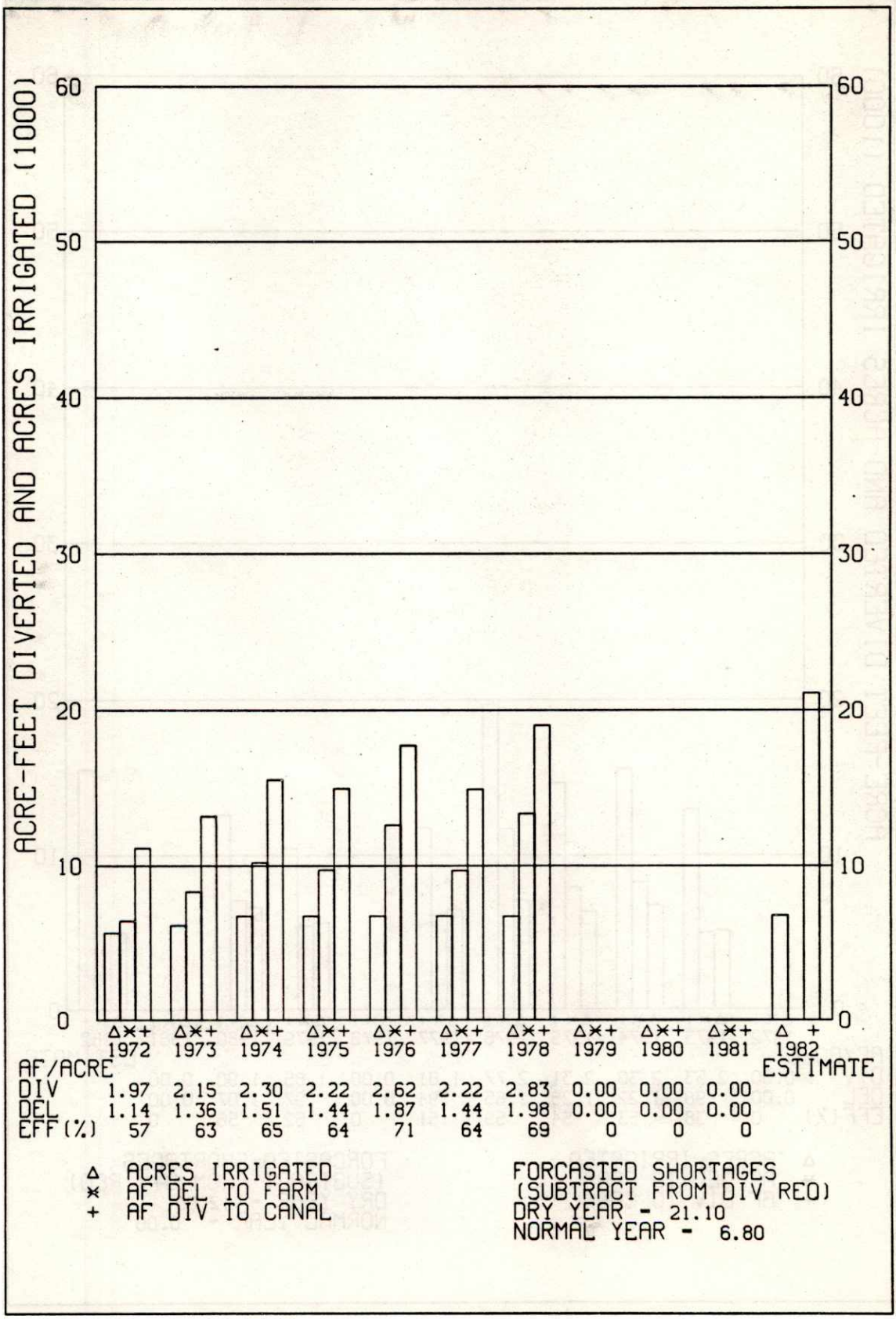
AF/ACRE	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
DIV	0.00	2.53	2.30	2.31	2.77	1.81	0.00	1.85	1.90	0.00
DEL	0.00	.98	1.22	1.25	1.65	.94	0.00	.97	1.07	0.00
EFF (%)	0	38	53	54	59	51	0	52	56	0

Δ ACRES IRRIGATED
✱ AF DEL TO FARM
\+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR - 12.00
NORMAL YEAR - 0.00

EXHIBIT 28

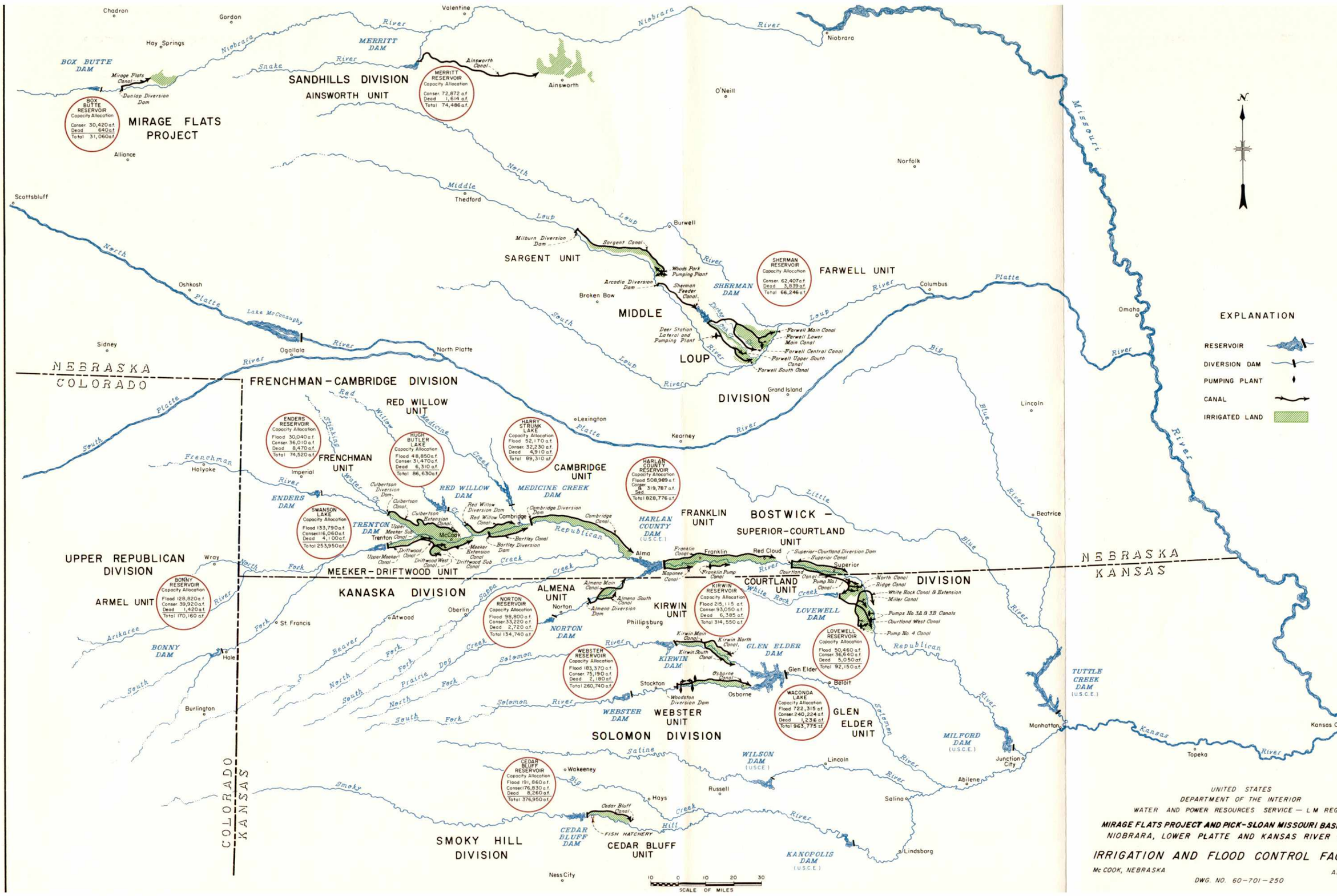
CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
CEDAR BLUFF IRRIGATION DISTRICT



AF/ACRE	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982 ESTIMATE
DIV	1.97	2.15	2.30	2.22	2.62	2.22	2.83	0.00	0.00	0.00	
DEL	1.14	1.36	1.51	1.44	1.87	1.44	1.98	0.00	0.00	0.00	
EFF (%)	57	63	65	64	71	64	69	0	0	0	

Δ ACRES IRRIGATED
✱ AF DEL TO FARM
\+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR - 21.10
NORMAL YEAR - 6.80



UNITED STATES
DEPARTMENT OF THE INTERIOR
WATER AND POWER RESOURCES SERVICE — L M REGION

MIRAGE FLATS PROJECT AND PICK-SLOAN MISSOURI BASIN PROGRAM
NIOBRARA, LOWER PLATTE AND KANSAS RIVER BASINS

IRRIGATION AND FLOOD CONTROL FACILITIES

Mc COOK, NEBRASKA — APRIL 1, 1980

DWG. NO. 60-701-250