YELLOWSTONE RIVER

COMPACT COMMISSION

FORTY-THIRD ANNUAL REPORT

1994

YELLOWSTONE RIVER COMPACT COMMISSION
821 EAST INTERSTATE AVENUE
BISMARCK, NORTH DAKOTA 58501

Honorable Jim Geringer
Governor of the State of Wyoming
Cheyenne, Wyoming 82001

Honorable Marc Racicot
Governor of the State of Montana
Helena, Montana 59620

Honorable Edward T. Schafer
Governor of the State of North Dakota
Bismarck, North Dakota 58501

Dear Sirs:

Pursuant to Article III of the Yellowstone River Compact (Compact), the Commission submits the following forty-third annual report of activities for the period ending September 30, 1994.

Members of the Yellowstone River Compact Commission convened their forty-third Annual Meeting on December 13, 1994 at 1:15 p.m. in Billings, Montana. In attendance were Mr. William F. Horak, Chairman and Federal Representative; Mr. Gordon W. Fassett, Wyoming State Engineer; and Mr. Gary Fritz, Administrator, Water Resources Division, Montana Department of Natural Resources and Conservation. Also in attendance were Ms. Faye Bergan, Montana Reserved Water Rights Compact Commission; Mr. Orrin Ferris, HKM Associates; Ms. Sue Lowry, Wyoming State Engineer's Office; Mr. Joe A. Moreland, U.S. Geological Survey; Mr. Dave Nicolarson, Little Horn Energy; and Mr. Mike Whitaker, Superintendent, Wyoming Water Division III.

Mr. Moreland presented information on budgets for current and future water years. He reported that the stream-gaging program for the Yellowstone River Compact Commission cost $45,200 in water year 1994. Budget estimates approved at the last meeting set costs for the 1995 program at $47,500. He noted that the cost for operation of gaging stations for 1995 would actually be $46,900 and asked if Wyoming and Montana would be agreeable to reduce their contributions for 1995 to $11,725. Mr. Fritz and Mr. Fassett agreed to the reduced amount. Mr. Moreland noted that costs for water year 1996 would be $64,300 which includes a one-time charge of $15,000 to relocate the Tongue River gage to a more suitable site if Montana and Wyoming were still agreeable to the plan. Both State Representatives indicated that funds would be available. Mr. Moreland estimated that gaging station operation costs for water year 1997 would be $51,600 and costs for 1998 would be about $54,200.

Mr. Moreland reported that 1994 runoff was 71 percent of average for the Clarks Fork Yellowstone River, 73 percent of average for the Bighorn River, 85 percent of average for the Tongue River, and 99 percent of average for the Powder River. He noted that flows in all tributaries were below average during July, August, and September. All reservoirs in the basin had less water in storage at the end of the 1994 water year than at the end of the previous year.

Mr. Fritz distributed a copy of proposed "Rules for the Resolution of Disputes over the Administration of the Yellowstone River Compact" and asked if other members of the Commission wanted to continue developing a resolution process.

Mr. Horak noted that the Commission began developing a conflict resolution process as a means of resolving disagreements that may arise between Wyoming and Montana during the conduct of Commission business, whether or not the sitting Federal Representative would be willing to ultimately cast a tie-breaking vote. Although the U.S. Geological Survey has a new Director and Chief Hydrologist, there has been no change in the Federal Representative's voting status. He stated the current leadership would welcome the Commission's sincere efforts to minimize the need for tie-breaking votes. He encouraged the Commission to continue the process.

Mr. Fassett stated that he wanted to proceed with development of a conflict resolution process. He noted that elevating issues to the point of conflict would be counterproductive. A conflict resolution process that helped resolve issues before they became intractable would benefit all parties. Mr. Fassett stated that he was prepared to offer suggestions but his comments would only be preliminary until he had input from legal counsel.

Mr. Fritz suggested adding... "The states agree that the issues pursued under this dispute resolution process shall be both substantive and require timely resolution"... to Section II to eliminate the possibility of frivilous issues being brought before the Commission. Mr. Fassett agreed that neither State wanted to waste resources on non-issues.

Mr. Horak asked what forum would be used to conduct the activities outlined in the proposed Rule. If the activities were conducted during regular Commission meetings, would the Federal Representative be expected to chair the discussions? He noted that the USGS would not be comfortable with the Federal Representative serving as chairman of the negotiating process but might agree to serve as facilitator. Mr. Fassett noted that the activity was a two-state process which did not involve the Federal Representative as chairman or facilitator. He noted that the USGS could be asked to name a facilitator if the States could not agree but otherwise would not have a role in the facilitated process.

Mr. Horak stated that the Commission seemed to view the proposed Rule for conflict resolution as a potentially effective means of settling disagreements between Wyoming and Montana so that a vote of the Commission need not be called. He noted, however, that the USGS was expected to pay for one-half of the cost of the facilitation phase of resolving conflicts between the two States. He agreed that the USGS had an obligation to help support the cost of hiring someone to vote on an unresolved issue but that the negotiation process really was a State reponsibility.

Mr. Fassett noted that the USGS has an obligation to share in the cost of administering the Compact. Mr. Horak stated that the Compact requires all parties to bear the costs of their participation in the Commission activities. He agreed that the Rule needed to address extraordinary costs associated with hiring a facilitator. He suggested that the USGS should expect to bear the costs of providing a non-USGS employee to substitute for the Federal Representative for the purpose of enabling a 3-party vote by the Commission.

Mr. Horak asked about the status of Montana's Clarks Fork Temporary Preliminary Decree. Mr. Fritz stated that the deadline for filing objections to the Decree passed in June of 1993. The Montana Water Court will issue a list of objections and will invite objectors to provide a notification of intent to appear. Mr. Fassett noted that claims for diversions in Wyoming should have been dismissed and asked if any were still included.

Mr. Fritz stated that he did not know if any inappropriate claims were still included. He said that he would prefer not to raise the issue as a Montana State employee and would rather have the Commission bring the matter to the Court's attention. He felt that Mr. Horak should send a letter to the Montana Water Court explaining the Commission's Rule on interstate ditches. He offered to have Mr. Arrington draft a letter to Judge Loble for the Commission chairman's signature.

Mr. Fassett reported on the Clarks Fork Wild and Scenic Water Right Quantification topic. He noted that the designation was made in 1990 and that the U.S. Forest Service had to file for water rights to protect the Wild and Scenic features. A hearing was held in Cody and most attendees were supportive of the water rights claim. Wyoming plans to reserve the water as an instream right that varies in quantity with rate of flow. About 80-85 percent of natural flow as measured at the downstream point of the designated reach would be reserved with a 1990 priority date. Small stock and domestic uses were protected because the Forest Service right is subordinate to those uses. Mr. Fassett noted that much of the concern over the issue had been eliminated by moving the boundary of the designated reach upstream from a potential reservoir site that could be used to protect existing uses.

Mr. Fassett reported on the status of Wind River Indian Reservation issues. He noted that the last legal challenge had been settled in July 1993 and that there are no legal actions pending. The State and Tribes are discussing issues related to implementing the court decision. The parties are meeting monthly and hope to avoid further legal action. The Department of the Interior has formed an implementation team and has joined with the State and Tribes to work on solutions. Bureau of Reclamation is conducting studies and the Wyoming Water Development Commission is drilling wells. Tribes are not interested in developing new water for agriculture but are interested in other water uses. Mr. Horak asked if there were issues related to outside marketing of water. Mr. Fassett stated that potential markets exist off the Reservation. All rights have been adjudicated but Walton rights issues are still before the Supreme Court. Wyoming State Court ruled against some types of Walton right claims and the claimants have appealed to the Supreme Court. Most of the claims are private and the objectors are private, tribal, or Federal.

Mr. Nicolarson was invited to report on the Little Horn Energy Project. He reported that a utility is interested in the peaking power that would be made available from the facility. He noted that an Environmental Impact Statement has to be completed within two years of filing for the FERC license. Mr. Nicolarson stated that the project would use 15,000 acre-feet of water in a 10-hour period but would only consume about 1,700 acre-feet per year as evaporation. Ms. Lowry noted that U.S. Fish and Wildlife Service is an intervenor in the FERC water rights application. Mr. Fassett stated that Little Horn Energy has competing water claims and suggested that the Little Horn project might wish to resize and refile water claims with a new priority date.

Ms. Bergan reported on the status of negotiations between the Montana Reserved Water Rights Compact Commission and the National Park Service on reserved water rights for the Bighorn Canyon National Recreation Area and the Little Bighorn Battlefield. Final agreements have been negotiated for both areas and are ready for legislative approval. About 85 acre-feet per year has been reserved for use for administrative purposes on the Battlefield. Priority date for administrative uses is 1886. An instream flow reservation of 51 cubic feet per second has a priority date of 1946. The agreement also reserves maintenance flows for a 15-day period. The Bighorn National Recreation Area has a reservation of 251 acre-feet per year for administrative uses. Instream flows were reserved for tributary streams that arise in the Recreation Area. All National Park Service reservations are subordinate to existing rights. Mr. Fassett asked if the reserved rights come from Montana's allocation from the Yellowstone River Compact? He wondered if the reserved rights would burden Wyoming water users. Ms. Bergan stated that she was not sure if the negotiated settlement specifically refers to Wyoming water rights but the consumptive uses were very small and probably would not affect Wyoming water users.

Ms. Bergan reported that agreement had also been reached on reserved water rights and protection of geothermal features in Yellowstone National Park. She noted that the Old Faithful Protection Act was not passed by Congress but that Montana and the National Park Service have an agreement to administer the Yellowstone Water Rights Compact. The National Park Service has agreed to provide funds to Montana to administer the Compact. Ms. Lowry asked if the Congressional approval of the Compact means that the agreement is considered a Federal law? The Compact states that additional storage in the Little Bighorn is not allowed. She asked if that meant that Wyoming can not develop additional storage in Wyoming? Ms. Bergan responded that the Compact is only between Montana and the National Park Service. Wyoming is not bound by the agreement.

Ms. Bergan reported that the Reserved Water Rights Compact Commission is beginning to negotiate reserved water rights for the Crow Reservation. The negotiators are working on rules to be used in the process and dealing with media issues. Land ownership surveys are being conducted. There are unresolved issues about treatment of fee lands. Montana and the Crow Tribe have agreed to exchange technical information and legal issues are being identified. Montana feels that the negotiation will be a long process. Mr. Fassett commented that Wyoming is nervous about the process. While Wyoming is supportive of Montana's efforts to negotiate a settlement with the Crow Reservation, it recognizes that the agreement could impact Wyoming water users. Wyoming does not want to disrupt the negotiations but does have a responsibility to protect Wyoming water users from ricochetting issues. Ms. Bergan stated that Wyoming will be kept informed.

Mr. Fritz provided an update on the Tongue River Dam Rehabilitation Project. He reported that the Compact with the Northern Cheyenne Reservation was approved by Congress. The loan agreement with the Tribe has also been approved by all parties. An MOU between Montana, Department of the Interior, and Northern Cheyenne Reservation has been signed. Hiring preference issues were resolved. The Bureau of Reclamation has an obligation to fund environmental mitigation. A Draft EIS will be completed in mid-April with a final version completed in spring of 1996. Montana is writing qualification statements for final design and construction bids. The project will not be completed before December of 1997 which is the completion date in the Compact. Funding arrangements will have to be extended past 1997.

Mr. Fassett reported on the Sheridan and Buffalo water supply projects. He reminded the Commission that both projects have been delayed by controversy over wetlands. The difficulties in resolving issues related to issuance of 404 permits have been very frustrating to Wyoming.

Mr. Horak suggested that the Commission continue working on the rules for conflict resolution and plan to meet when a new draft was ready for review. Mr. Fassett suggested that the next annual meeting be held in Wyoming.

Having no other business to discuss, the Commission adjourned the meeting at 4:25 p.m.

Gordon W. Fassett
Commissioner for Wyoming

Gary Fritz
Commissioner for Montana

William F. Horak
Federal Representative

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GENERAL REPORT

Cost of operation and budget

The work funded by the Yellowstone River Compact Commission, which to date has been primarily concerned with the collection of required hydrologic data, has been financed through cooperative arrangements whereby Montana and Wyoming each bear one-fourth of the cost and the remaining one-half is borne by the United States. The salaries and necessary expenses of the State and U.S. Geological Survey representatives, and the cost to other agencies of collecting hydrologic data, are not considered as expenses of the Commission.

The expense of the Commission during fiscal year 1994 was $45,200, in accordance with the budget adopted for the year.

The budgets for fiscal years 1995, 1996, 1997, and 1998 were tentatively adopted subject to the availability of appropriations.

The budgets for the five fiscal years are summarized as follows:

October 1, 1993, to September 30, 1994 (fiscal year 1994):

Continuation of existing stream-gaging programs	$45,200

October 1, 1994, to September 30, 1995 (fiscal year 1995):

Continuation of existing stream-gaging programs	$46,900

October 1, 1995, to September 30, 1996 (fiscal year 1996):

Estimate of continuation of existing stream-gaging programs and relocation of Tongue River gage	$64,300

October 1, 1996, to September 30, 1997 (fiscal year 1997):

Estimate of continuation of existing stream-gaging programs	$51,600

October 1, 1997, to September 30, 1998 (fiscal year 1998):

Estimate of continuation of existing stream-gaging programs	$54,200

Stream-gaging-station operation

Gaging stations at the measuring sites specified in the Yellowstone River Compact were continued in operation and satisfactory discharge records were collected at each station. Locations of gaging and reservoir stations are shown on a map of the Yellowstone River Basin at the end of the report.

During water year 1994, annual streamflow was less than normal[1] in two of the four tributaries of the Yellowstone River as given in the following table:

Station number	Measurement site	Percent of average
06208500	Clarks Fork Yellowstone River at Edgar, Mont., minus diversions to White Horse Canal	71
06294500	Bighorn River above Tullock Creek, near Bighorn, Mont., minus Little Bighorn River near Hardin, Mont. Adjusted for change in contents in Bighorn Lake	73
06308500	Tongue River at Miles City, Mont.	85
06326500	Powder River near Locate, Mont.	99

Tabulation of streamflow data for water year 1994 and graphical comparisons with average flows for the preceding year and for selected base periods are given in the section "Summary of discharge for Compact stream-gaging stations."

Diversions

No diversions were regulated by the Commission during the year. The Commissioners considered the need to develop procedures to administer water in accordance with the provisions of the Compact.

Storage in reservoirs

Reservoirs completed after January 1, 1950

Bighorn Lake, a Bureau of Reclamation project on the Bighorn River, and the largest storage project in the basin, contained 1,039,000 acre-feet at the beginning of the year and 775,100 acre-feet at the end of the year. Contents ranged from 747,400 acre-feet on September 13, 1994, to 1,066,000 acre-feet on October 14, 1993. Boysen Reservoir, located on the Wind River and operated by the Bureau of Reclamation, began the year with 677,200 acre-feet in storage and ended the year with 444,200 acre-feet. Storage figures are listed as usable acre-feet. Monthend and yearend contents and a description of these reservoirs are given in the section "Monthly summary of contents for Compact reservoirs completed after January 1, 1950." The Commission is cognizant of other reservoirs in the Yellowstone River basin and considers their aggregate effect to be insufficient to warrant the collection of storage data at this time.

Reservoirs existing on January 1, 1950

As a matter of record and general information, monthend contents are given later in the report for reservoirs in existence upstream from the points of measurement on January 1, 1950. These data are pertinent to allocation under Article V, Section C, Item 3 of the Compact.

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[1] The "normal" range is 80 to 120 percent of average.

SUMMARY OF DISCHARGE FOR COMPACT STREAM-GAGING STATIONS

06208500 Clarks Fork Yellowstone River at Edgar, Mont.

LOCATION.--Lat 45°27'58", long 108°50'35", in SE1/4SE1/4SE1/4 sec. 23, T.4 S., R.23 E., Carbon County, Hydrologic Unit 10070006, on right bank 400 ft downstream from county bridge, 0.5 mi east of Edgar, 6 mi upstream from Rock Creek, and at river mile 22.1.
DRAINAGE AREA.--2,032 mi^2.
PERIOD OF RECORD.--July 1921 to September 1969, October 1986 to current year.
REVISED RECORDS.--WSP 1509: 1924, 1932(M). WSP 1729: Drainage area.
GAGE.--Water-stage recorder. Elevation of gage is 3,460 ft above sea level, from topographic map. Prior to Aug. 31, 1953, nonrecording gage at same site and datum.
REMARKS.--Records good except those for the estimated daily discharges, which are poor. Diversions for irrigation of about 41,500 acres, of which about 840 acres lie downstream from the station. In addition, about 6,300 acres of land upstream from the station are irrigated by diversions from the adjoining Rock Creek basin. Figures of discharge given herein have been adjusted to exclude the flow of White Horse Canal diversion.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	421	562	e430	e370	e320	e500	280	940	3050	649	237	135
2	423	574	e430	e370	e320	e640	295	973	3620	579	204	131
3	443	564	e420	394	e320	595	332	880	3410	542	216	136
4	459	590	e400	382	e310	503	392	857	2850	529	236	139
5	433	580	e400	378	e300	440	408	874	2700	522	320	131
6	424	532	e320	e340	e280	391	369	1080	2540	560	333	131
7	457	510	e250	e250	e230	361	336	1580	2500	852	310	122
8	584	521	e320	e250	e170	342	334	2110	2210	857	283	112
9	657	549	e370	e300	e190	322	319	2840	1870	766	264	103
10	700	539	e400	e350	e230	332	310	3260	1490	681	230	107
11	805	532	e410	e350	e280	335	306	3500	1240	610	212	109
12	937	528	437	e350	e280	324	302	4020	1250	474	194	116
13	871	514	418	e350	e350	324	293	4710	1480	393	164	120
14	795	535	e390	e330	e370	318	337	4960	2270	355	187	128
15	773	504	e350	e320	e350	315	366	4120	3080	346	202	186
16	762	488	e340	e290	e350	320	354	3420	2550	341	194	227
17	755	499	e330	e230	e380	320	347	3220	1960	333	172	233
18	744	500	e340	e250	e400	334	510	2960	1580	307	149	226
19	714	470	e350	e300	e400	334	748	2540	1500	252	143	222
20	696	445	e350	e350	e380	316	1120	2880	1480	207	146	218
21	687	435	e350	e410	e350	309	1450	2950	1510	184	149	261
22	667	e400	e350	e450	e350	284	1740	2480	1610	169	143	296
23	663	e300	e340	e450	e330	311	1850	2240	1800	154	134	304
24	651	e240	e330	e420	e280	299	1860	2220	1670	147	132	348
25	635	e200	e320	e400	e220	287	1950	2590	1470	158	130	347
26	626	e220	e320	e400	e230	286	1770	2890	1340	207	125	343
27	623	e250	e310	e400	e300	285	1420	3250	1270	285	118	333
28	642	e300	e300	e380	e410	284	1200	3650	1100	295	120	312
29	625	e350	e290	e350	---	289	1070	3480	883	244	122	293
30	577	e400	e320	e350	---	284	948	3020	757	225	124	287
31	518	---	e370	e340	---	275	---	2900	---	221	132	---
TOTAL	19767	13631	11055	10854	8680	10859	23316	83394	58040	12444	5825	6156
MEAN	638	454	357	350	310	350	777	2690	1935	401	188	205
MAX	937	590	437	450	410	640	1950	4960	3620	857	333	348
MIN	421	200	250	230	170	275	280	857	757	147	118	103
AC-FT	39210	27040	21930	21530	17220	21540	46250	165400	115100	24680	11550	12210

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 1994, BY WATER YEAR (WY)*

MEAN	529	499	404	347	347	363	562	2113	3997	2004	613	483
MAX	1010	777	583	471	584	554	1398	5578	6843	4771	1541	1395
(WY)	1942	1928	1951	1951	1963	1943	1943	1928	1927	1943	1951	1941
MIN	298	310	217	200	180	220	123	757	1768	290	49.5	156
(WY)	1956	1936	1937	1922	1922	1924	1961	1968	1987	1988	1988	1988

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1921 - 1994*	
ANNUAL TOTAL	345670		264021			
ANNUAL MEAN	947		723		1023	
HIGHEST ANNUAL MEAN					1558	1943
LOWEST ANNUAL MEAN					668	1988
HIGHEST DAILY MEAN	5330	May 22	4960	May 14	10600	Jun 2 1936
LOWEST DAILY MEAN	178	Sep 10	103	Sep 9	37	May 11 1961
ANNUAL SEVEN-DAY MINIMUM	226	Sep 7	113	Sep 7	43	Apr 18 1961
INSTANTANEOUS PEAK FLOW			5280	May 14	a10900	Jun 2 1936
INSTANTANEOUS PEAK STAGE			6.62	May 14	8.66	Jun 6 1991
INSTANTANEOUS LOW FLOW			97	Sep 9	36	Apr 22 1961
ANNUAL RUNOFF (AC-FT)	685600		523700		741100	
10 PERCENT EXCEEDS	2570		1950		2810	
50 PERCENT EXCEEDS	450		361		470	
90 PERCENT EXCEEDS	316		185		273	

*--During period of operation (water years 1921-69, 1987 to current year).
a--Gage height, 8.62 ft.
e--Estimated

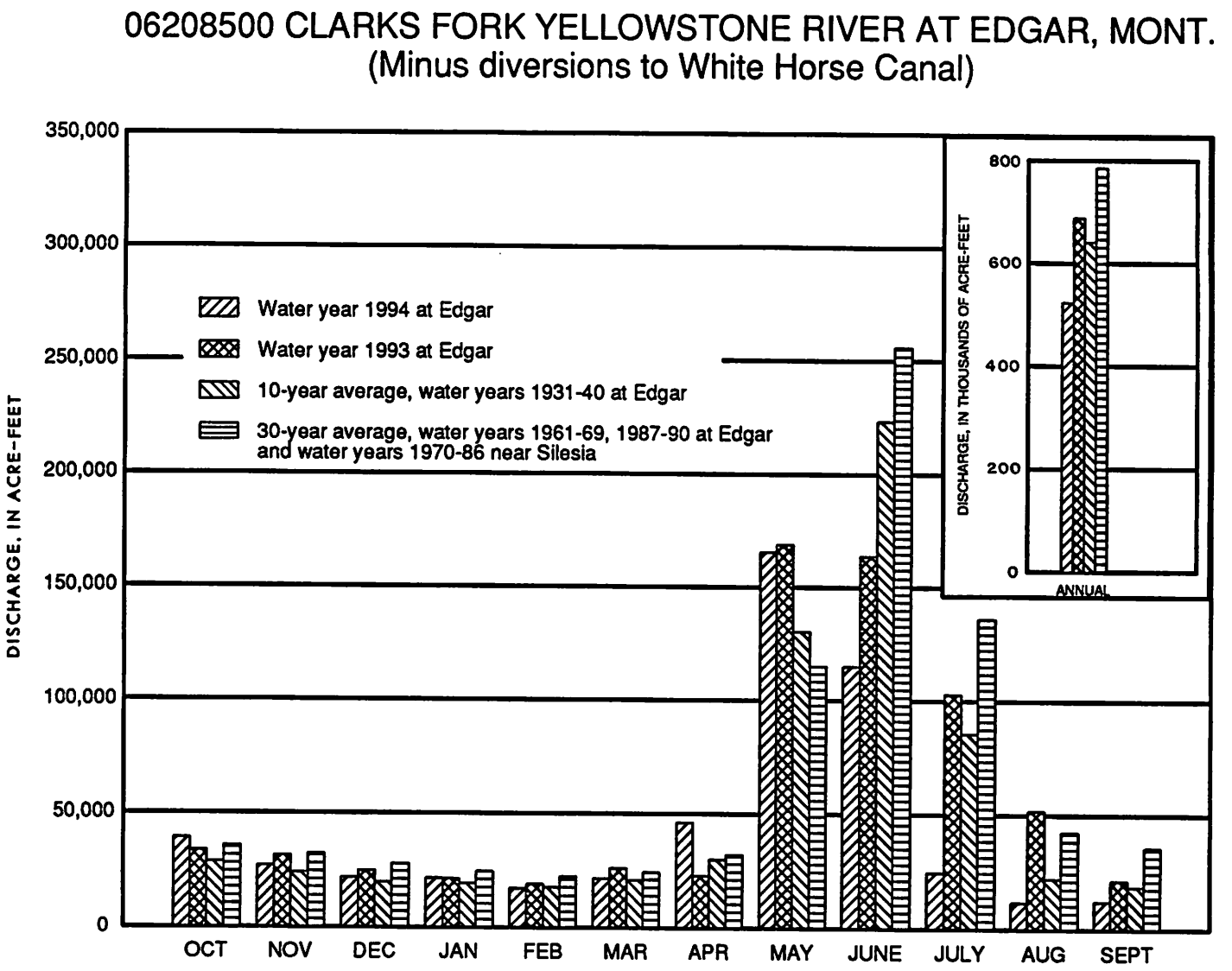

Figure 1.--Comparison of discharge of the Clarks Fork Yellowstone River during water year 1994 with discharge during water year 1993 and with 10-year and 30-year average discharges.

06294000 Little Bighorn River near Hardin, Mont.

LOCATION.--Lat 45°44'09", long 107°33'24", in SE1/4NE1/4NE1/4 sec.19, T.1 S., R.34 E., Big Horn County, Hydrologic Unit 10080016, on left bank 50 ft downstream from bridge on Sarpy Road, 0.2 mi upstream of terminal wasteway of Agency Canal, 0.6 mi upstream from mouth, and 2.3 mi east of Hardin.
DRAINAGE AREA.--1,294 mi^2.
PERIOD OF RECORD.--June 1953 to current year.
REVISED RECORDS.--WDR MT-86-1: 1978.
GAGE.--Water-stage recorder. Datum of gage is 2,882.29 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Oct. 7, 1953, nonrecording gage at site 0.4 mi downstream. Oct. 7, 1953, to May 6, 1963, water-stage recorder at site 0.3 mi downstream. May 6, 1963, to Nov. 6, 1963, nonrecording gage at site 0.4 mi downstream. All at different datums. Nov. 7, 1963, to Aug. 15, 1976, water-stage recorder at site 35 ft downstream at present datum. Aug. 15, 1976, to Sept. 30, 1979, water-stage recorders were located on each bank downstream of Sarpy Road bridge and were used depending on control conditions.
REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow partly regulated by Willow Creek Reservoir (capacity 23,000 acre-ft). Diversions for irrigation of 20,980 acres upstream from station. Figures of discharge given herein include flow of terminal wasteway of Agency Canal. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	147	146	e200	e170	e130	e190	276	523	497	142	123	103
2	141	157	e190	e160	e140	e250	378	555	469	143	119	118
3	145	162	e180	e150	e150	e400	391	512	451	136	102	141
4	134	158	e170	e140	e150	e800	396	450	417	137	104	147
5	125	162	e160	e130	e150	e1000	363	414	386	135	106	137
6	125	168	e160	e120	e150	e950	349	399	353	132	89	145
7	134	151	e170	e110	e140	e800	346	430	304	142	79	139
8	151	151	e170	e120	e120	e700	373	479	309	203	68	136
9	167	160	e170	e120	e75	e500	362	539	333	312	59	137
10	169	154	e180	e130	e90	370	333	606	374	269	52	135
11	161	149	e180	e140	e110	361	308	675	352	206	57	127
12	164	152	e170	e140	e120	412	281	763	341	169	58	116
13	170	153	e160	e150	e130	497	260	873	275	150	57	114
14	174	154	e160	e140	e150	495	249	1070	262	136	54	109
15	163	157	e150	e130	e160	618	248	1230	273	136	54	102
16	164	149	e150	e130	e170	605	265	1100	286	131	54	90
17	158	145	e150	e120	e170	477	261	1030	281	128	56	95
18	154	158	e150	e110	e170	431	245	1120	273	125	60	98
19	151	145	e150	e100	e160	374	242	1170	262	120	66	92
20	149	163	e150	e80	e140	315	266	1150	255	120	69	85
21	151	156	e160	e100	e130	276	297	1220	245	115	76	87
22	151	135	e160	e120	e120	242	349	1200	250	106	96	93
23	151	e110	e160	e150	e110	232	416	1000	222	103	81	98
24	150	e90	e160	e170	e100	226	490	903	215	99	73	105
25	147	e70	e150	e160	e80	213	550	806	196	95	76	100
26	145	e90	e150	e150	e100	200	622	744	174	89	86	93
27	154	e120	e150	e150	e140	204	640	689	163	93	79	92
28	153	e150	e150	e140	e150	206	585	645	159	100	76	96
29	157	e180	e160	e140	---	202	547	611	155	101	67	100
30	169	e200	e170	e130	---	216	514	587	145	109	72	99
31	158	---	e180	e130	---	221	---	549	---	117	83	---
TOTAL	4732	4395	5070	4130	3705	12983	11202	24042	8677	4299	2351	3329
MEAN	153	146	164	133	132	419	373	776	289	139	75.8	111
MAX	174	200	200	170	170	1000	640	1230	497	312	123	147
MIN	125	70	150	80	75	190	242	399	145	89	52	85
AC-FT	9390	8720	10060	8190	7350	25750	22220	47690	17210	8530	4660	6600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1994, BY WATER YEAR (WY)

MEAN	155	156	137	145	214	336	331	633	844	279	122	133
MAX	276	248	223	366	610	987	748	2852	1981	1333	382	267
(WY)	1979	1979	1979	1975	1971	1972	1965	1978	1968	1975	1975	1978
MIN	67.6	84.6	68.7	71.6	70.3	92.7	54.8	71.9	117	8.50	2.46	19.1
(WY)	1957	1986	1962	1988	1989	1961	1961	1961	1961	1961	1961	1960

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1954 - 1994	
ANNUAL TOTAL	90013		88915			
ANNUAL MEAN	247		244		290	
HIGHEST ANNUAL MEAN					676	1975
LOWEST ANNUAL MEAN					70.4	1961
HIGHEST DAILY MEAN	1140	Jun 10	1230	May 15	15800	May 20 1978
LOWEST DAILY MEAN	70	Jan 1	52	Aug 10	.30	Aug 5 1961
ANNUAL SEVEN-DAY MINIMUM	80	Jan 8	55	Aug 10	.40	Aug 3 1961
INSTANTANEOUS PEAK FLOW			1290	May 21	b22600	May 19 1978
INSTANTANEOUS PEAK STAGE			a6.97	Mar 3	c11.78	Mar 20 1960
INSTANTANEOUS LOW FLOW			52	Aug 10	d.20	Aug 7 1961
ANNUAL RUNOFF (AC-FT)	178500		176400		210200	
10 PERCENT EXCEEDS	496		529		635	
50 PERCENT EXCEEDS	180		154		167	
90 PERCENT EXCEEDS	108		91		78	

a--Backwater from ice.
b--Gage height, 11.20 ft.
c--Site and datum then in use, backwater from ice.
d--Result of discharge measurement.
e--Estimated.

06294500 Bighorn River above Tullock Creek, near Bighorn, Mont.

LOCATION.--Lat 46°07'29", long 107°28'06", in SE1/4SE1/4NE1/4 sec.3, T.4 N., R.34 E., Treasure County, Hydrologic Unit 10080015, on right bank, 1.9 mi upstream from Tullock Creek, 3.0 mi upstream from mouth, 3.6 mi southwest of Bighorn, and 4.5 mi southeast of Custer.
DRAINAGE AREA.--22,414 mi^2. Draingage area at site used Oct. 7, 1955, to Sept. 30, 1981, 22,885 mi^2.
PERIOD OF RECORD.--October 1981 to current year. Previously published as "06294700 Bighorn River at Bighorn, MT" 1956-81, and as "near Custer" 1945-55. Flows are equivalent at all sites.
GAGE.--Water-stage recorder. Elevation of gage is 2,700 ft above sea level, from topographic map. May 11, 1945 to Dec. 6, 1945, nonrecording gage, and Dec. 7, 1945, to Oct. 6, 1955, water-stage recorder 1.7 mi upstream at different datum. Oct. 7, 1955, to Sept. 30, 1981, at site 2.3 mi downstream at different datum.
REMARKS.--Records good. Flow regulated by Bighorn Lake beginning November 1965 (usable capacity, 1,356,000 acre-ft). Major regulation prior to November 1965 by 14 reservoirs in Wyoming and 1 in Montana with combined usable capacity of about 1,400,000 acre-ft. Diversion for irrigation of about 445,200 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3280	5560	3780	3770	3470	e4000	2670	3470	3330	1920	1910	1870
2	3340	6300	3560	3810	3370	4580	2800	3460	5060	1930	1860	1950
3	3300	6570	3590	3820	3230	5570	2800	3400	6050	1950	1700	1990
4	3260	6180	3620	3800	e3100	5190	2880	3270	5370	1990	1710	2010
5	3310	5830	3660	3820	e3100	5080	2820	3180	4560	2020	1700	1990
6	3310	5420	3600	3780	e2600	4660	2820	3140	3790	2030	1690	1980
7	3350	5060	3630	e3800	e2300	4260	2890	3130	3080	2240	1680	1990
8	3610	4680	3650	e3800	e2500	3700	2930	3180	3000	2360	1680	1950
9	3680	4350	3700	3740	e2700	3330	2860	3200	3180	2420	1610	1940
10	4250	4060	3700	3770	e3000	3140	2760	3270	3180	2440	1620	1920
11	4320	3860	3730	3800	e3000	3100	2710	3340	3150	2360	1690	1920
12	4410	3860	3750	3810	e3000	3100	2630	3380	3200	2240	1720	1900
13	4690	3870	3740	3750	e3000	3170	2560	3570	3180	2260	1730	1860
14	4960	3930	3730	3570	e3100	3190	2520	3800	3170	2210	1800	1800
15	4920	3910	3760	3530	e3200	3240	2490	4030	3160	2110	1820	1890
16	4950	3960	3780	3570	e3200	3290	2500	3990	3160	2130	1790	1790
17	4970	3940	3780	e3500	e3300	3180	2480	3820	2960	2150	1750	1720
18	5000	3980	3790	e3500	e3100	3080	2450	3860	2950	2140	1710	1710
19	5010	4000	3810	e3500	e2900	3030	2410	3900	2890	2100	1710	1710
20	5040	4010	3800	e3500	e2800	2930	2440	3990	2830	2080	1730	1660
21	5080	4100	3840	e3500	e2800	2880	2500	4280	2790	2090	1750	1680
22	5120	4080	3850	e3500	e3000	2840	2560	4350	2840	2090	1780	1670
23	5170	4020	3890	3540	e3200	2890	2670	4190	2830	2070	1750	1630
24	5210	4150	3830	3530	e2700	2770	3270	4000	2830	2080	1670	1610
25	5240	4150	3700	3540	e2500	2720	3380	3760	2770	2090	1670	1600
26	5240	4030	3720	3530	e2700	2610	3530	3600	2520	2260	1790	1560
27	5340	4060	3720	3530	e2900	2600	3630	3540	2300	1790	1790	1520
28	5400	4110	3730	3510	e3000	2620	3630	3470	2230	1780	1810	1490
29	5430	4150	3710	3500	---	2630	3640	3410	2180	1820	1820	1480
30	5490	4070	3710	3480	---	2640	3520	3410	2050	1860	1800	1720
31	5540	---	3740	3470	---	2640	---	3270	---	1910	1840	---
TOTAL	141220	134250	115600	112570	82770	104660	85750	111660	96590	64920	54080	53510
MEAN	4555	4475	3729	3631	2956	3376	2858	3602	3220	2094	1745	1784
MAX	5540	6570	3890	3820	3470	5570	3640	4350	6050	2440	1910	2010
MIN	3260	3860	3560	3470	2300	2600	2410	3130	2050	1780	1610	1480
AC-FT	280100	266300	229300	223300	164200	207600	170100	221500	191600	128800	107300	106100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1994, BY WATER YEAR (WY)

MEAN	3252	3384	3203	3055	3196	3727	3459	4365	6984	5258	2745	2782
MAX	5546	5599	4907	5478	5314	6580	7203	9102	15180	19090	6567	4952
(WY)	1972	1974	1968	1968	1971	1972	1972	1947	1948	1967	1978	1973
MIN	1391	1223	1280	1382	1843	908	1063	1304	1050	707	868	1009
(WY)	1990	1978	1961	1961	1966	1966	1966	1966	1966	1960	1961	1966

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1946 - 1994	
ANNUAL TOTAL	1318430		1157580			
ANNUAL MEAN	3612		3171		3785	
HIGHEST ANNUAL MEAN					5501	1947
LOWEST ANNUAL MEAN					1623	1961
HIGHEST DAILY MEAN	10000	Jul 5	6570	Nov 3	50000	May 20 1978
LOWEST DAILY MEAN	1700	Feb 18	1480	Sep 29	400	Apr 4 1967
ANNUAL SEVEN-DAY MINIMUM	1830	Feb 16	1560	Sep 23	528	May 6 1961
INSTANTANEOUS PEAK FLOW			a6800	Nov 3	c59200	May 20 1978
INSTANTANEOUS PEAK STAGE			b7.56	Feb 28	b14.21	Apr 2 1965
INSTANTANEOUS LOW FLOW					d275	Nov 15 1959
ANNUAL RUNOFF (AC-FT)	2615000		2296000		2742000	
10 PERCENT EXCEEDS	5590		4470		6180	
50 PERCENT EXCEEDS	3200		3190		3200	
90 PERCENT EXCEEDS	2260		1790		1800	

SUMMARY STATISTICS	WATER YEARS 1946 - 1961*		WATER YEARS 1967 - 1994**	
ANNUAL MEAN	3358		3874	
HIGHEST ANNUAL MEAN	5501	1947	5415	1975
LOWEST ANNUAL MEAN	1623	1961	1999	1989
HIGHEST DAILY MEAN	25700	Jun 23 1947	50000	May 20 1978
LOWST DAILY MEAN	462	May 12 1961	400	Apr 4 1967
ANNUAL SEVEN-DAY MINIMUM	528	May 6 1961	843	Nov 18 1977
INSTANTANEOUS PEAK FLOW	f26200	Jun 24 1947	59200	May 20 1978
INSTANTANEOUS PEAK STAGE	b10.65	Mar 20 1947	14.15	May 20 1978
INSTANTANEOUS LOW FLOW	d275	Nov 15 1959		
ANNUAL RUNOFF (AC-FT)	2578000		2806000	
10 PERCENT EXCEEDS	6200		6060	
50 PERCENT EXCEEDS	2810		3460	
90 PERCENT EXCEEDS	1500		2010	

*--Prior to construction of Yellowtail Dam.
**--After completion of Yellowtail Dam.
a--Gage height, 4.01 ft.
b--Backwater from ice.
c--Gage height, 14.15 ft.
d--About, result of freezeup.
e--Estimated.
f--Gage height, 8.79 ft.

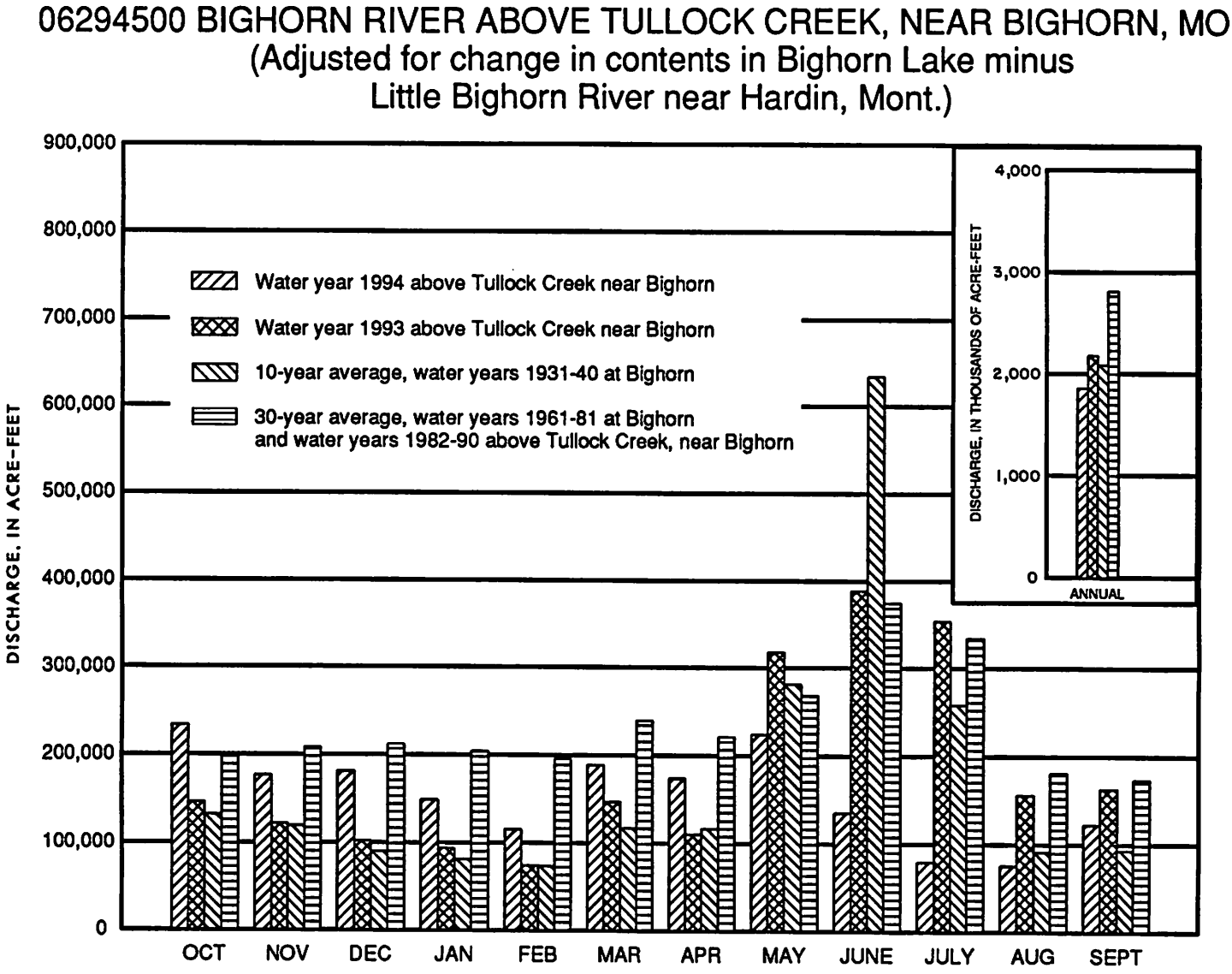

Figure 2.--Comparison of discharge of the Bighorn River during water year 1994 with discharge during water year 1993 and with 10-year and 30-year average discharges.

06308500 Tongue River at Miles City, Mont.

LOCATION.--Lat 46°20'44", long 105°48'10", in NE1/4NE1/4SE1/4 sec.23, T.7 N., R.47 E., Custer County, Hydrologic Unit 10090102, on right bank 4 mi south of Miles City and at river mile 8.1.
DRAINAGE AREA.--5,379 mi².
PERIOD OF RECORD.--April 1938 to April 1942, April 1946 to current year. Published as "near Miles City" April 1938 to April 1942. Not equivalent to records published as "near Miles City" May 1929 to October 1932. Monthly discharge only for some periods, published in WSP 1309.
REVISED RECORDS.--WSP 1729: Drainage area.
GAGE.--Water-stage recorder. Datum of gage is 2,375.76 ft above sea level (levels by U.S. Army Corps of Engineers). April 1938 to April 1942, nonrecording gage at site 8 mi upstream at different datum. April 1946 to Sept. 30, 1963, at datum 1.00 ft higher.
REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulation by Tongue River Reservoir (station 06307000), and many small reservoirs in Wyoming (combined capacity about 15,000 acre-ft). Diversions for irrigation of about 100,800 acres upstream from station. U. S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	248	321	e210	e210	e180	e250	528	1240	483	84	17	15
2	252	322	e220	e200	e160	e600	500	1160	498	61	19	15
3	256	325	e220	e230	e150	e6000	481	1100	505	41	19	15
4	256	324	e220	e200	e140	e8500	466	1080	367	52	14	14
5	257	323	e200	e170	e160	e7400	463	1070	262	57	11	12
6	256	276	e190	e150	e170	6070	464	1070	264	82	14	11
7	257	254	e180	e130	e150	3670	457	1060	242	118	13	14
8	287	269	e190	e150	e110	1930	443	1060	239	171	12	21
9	318	256	e230	e170	e120	1210	438	955	240	181	11	19
10	303	251	e260	e160	e130	981	431	950	234	158	10	19
11	296	250	e240	e170	e140	904	427	1030	230	121	12	14
12	281	251	e250	e220	e150	784	423	1140	230	65	20	13
13	276	250	e220	e200	e160	725	419	1140	224	47	15	11
14	274	248	e200	e170	e170	693	415	1100	228	47	25	11
15	274	245	e180	e150	e180	589	410	537	229	52	37	29
16	274	250	e190	e140	e190	524	409	464	229	53	41	32
17	274	245	e170	e130	e210	489	405	428	230	49	50	22
18	272	245	e180	e140	e200	460	399	412	223	33	43	29
19	272	241	e190	e150	e180	437	387	398	220	31	26	24
20	274	233	e180	e160	e150	422	394	378	216	24	23	22
21	274	243	e190	e180	e150	448	535	376	205	38	23	23
22	274	e220	e170	e200	e140	476	559	385	180	30	29	54
23	274	e150	e200	e210	e150	499	576	406	184	20	36	69
24	274	e100	e220	e200	e140	501	583	403	193	36	32	66
25	273	e110	e250	e190	e120	493	647	423	182	86	29	49
26	269	e130	e200	e170	e150	487	764	466	162	60	18	54
27	268	e150	e170	e160	e180	487	777	435	114	56	15	54
28	276	e230	e180	e170	e220	488	966	470	95	54	15	54
29	327	e210	e190	e190	---	498	832	489	93	50	16	54
30	324	e220	e200	e160	---	498	1160	485	88	39	15	54
31	326	---	e230	e170	---	562	---	487	---	20	15	---
TOTAL	8616	7142	6320	5400	4450	48075	16158	22597	7089	2016	675	893
MEAN	278	238	204	174	159	1551	539	729	236	65.0	21.8	29.8
MAX	327	325	260	230	220	8500	1160	1240	505	181	50	69
MIN	248	100	170	130	110	250	387	376	88	20	10	11
AC-FT	17090	14170	12540	10710	8830	95360	32050	44820	14060	4000	1340	1770

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1994, BY WATER YEAR (WY)*

MEAN	245	260	197	197	277	559	453	719	1292	475	183	201
MAX	694	585	423	502	1794	1783	1693	2983	3825	2207	700	599
(WY)	1972	1942	1950	1975	1971	1971	1965	1978	1978	1975	1975	1968
MIN	10.3	60.9	68.0	78.6	102	79.8	12.5	29.2	48.6	12.6	6.08	2.40
(WY)	1961	1989	1990	1961	1961	1961	1961	1961	1960	1960	1949	1938

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1938 - 1994*	
ANNUAL TOTAL	177180.7		129431			
ANNUAL MEAN	485		355		418	
HIGHEST ANNUAL MEAN					986	1978
LOWEST ANNUAL MEAN					57.2	1961
HIGHEST DAILY MEAN	6140	Jul 4	8500	Mar 4	9290	Jun 15 1962
LOWEST DAILY MEAN	3.7	May 15	10	Aug 10	.00	Jul 9 1940
ANNUAL SEVEN-DAY MINIMUM	80	May 10	12	Aug 5	.00	Jul 9 1940
INSTANTANEOUS PEAK FLOW			9100	Mar 4	a13300	Jun 15 1962
INSTANTANEOUS PEAK STAGE			12.10	Mar 4	b13.27	Mar 19 1960
INSTANTANEOUS LOW FLOW					c.00	Jul 9 1940
ANNUAL RUNOFF (AC-FT)	351400		256700		302900	
10 PERCENT EXCEEDS	1250		568		970	
50 PERCENT EXCEEDS	273		210		230	
90 PERCENT EXCEEDS	167		22		70	

*--During period of operation (April 1938 to April 1942, April 1946 to current year).
a--Gage height, 12.33 ft, from rating curve extended above 8,2003/s on basis of float measurement.
b--Ice jam.
c--Also occurred on several other days in 1940.
e--Estimated.

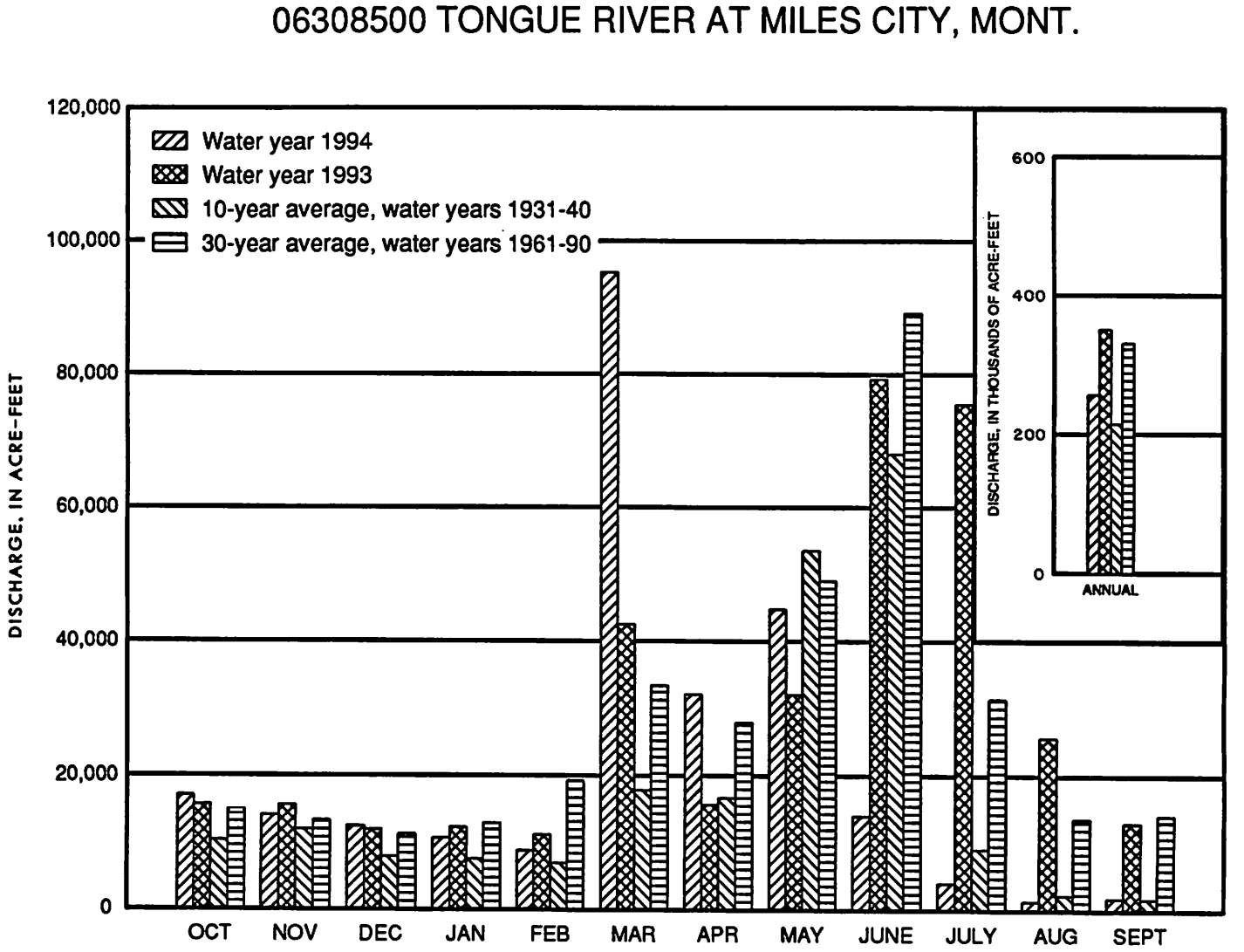

Figure 3.--Comparison of discharge of the Tongue River during water year 1994 with discharge during water year 1993 and with 10-year and 30-year average discharges.

LOCATION.--Lat 46°25'48", long 105°18'34", in SW1/4SW1/4SE1/4 sec. 23, T.8 N., R.51 E., Custer County, Hydrologic Unit 10090209, on left bank at downstream side of bridge on U.S. Highway 12, 0.1 mi west of Locate, and 25 mi east of Miles City, and at river mile 29.4.
DRAINAGE AREA.--13,189 mi^2.
PERIOD OF RECORD.--March 1938 to current year.
REVISED RECORDS.--WSP 926: 1939. WSP 1309: 1938-39 (M). WSP 1729: Drainage area.
GAGE.--Water-stage recorder. Datum of gage is 2,384.79 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to July 11, 1947, nonrecording gage at bridge 1.5 mi upstream, and July 11, 1947, to Sept. 30, 1965, water-stage recorder at site near upstream bridge at different datum. Oct. 1, 1965, to Oct. 4, 1966, nonrecording gage, and Oct. 5, 1966, to Mar. 21, 1978, water-stage recorder at present site and datum. Mar. 22, 1978, to Apr. 23, 1981, water-stage recorder 1.5 mi upstream at different datum, Apr. 24 to Aug. 20, 1981, water-stage recorder at present site and datum, and Aug. 21, 1981, to Sept. 30, 1981, water-stage recorder 1.5 mi upstream at different datum. Oct. 1, 1981 to Apr. 5, 1994, water-stage recorder at site 1.5 miles downstream at different datum. Apr. 7, 1994 to present, water-stage recorders located on each bank and used depending on control conditions.
REMARKS.--Records fair except those for estimated daily discharges, which are poor. Some regulation by three reservoirs in Wyoming with combined usable capacity of 36,800 acre-ft. Diversions for irrigation of about 101,800 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	223	340	e260	e250	e190	e2500	677	1530	243	73	38	40
2	231	320	e260	e240	e190	e4000	624	1370	213	79	38	39
3	242	324	e260	e230	e180	e7000	589	1330	189	60	32	38
4	232	309	e260	e220	e170	e13000	607	1220	172	49	30	39
5	239	e320	e250	e180	e190	e18000	591	1200	168	52	26	37
6	252	e330	e240	e150	e170	e15000	577	1040	139	60	25	36
7	247	e330	e240	e190	e150	8200	567	986	123	94	31	34
8	220	e340	e260	e200	e130	4460	560	931	121	79	32	34
9	e190	e340	e280	e220	e140	2910	567	913	130	67	30	34
10	e150	e340	e300	e210	e160	2150	560	978	122	57	32	35
11	282	e340	e290	e220	e160	2060	537	1030	130	184	31	34
12	273	e330	e280	e220	e180	2060	524	1110	149	1060	32	32
13	291	e330	e270	e220	e190	2000	515	1120	153	732	29	32
14	313	e330	e260	e190	e200	1950	491	1120	140	528	39	34
15	331	e330	e250	e180	e200	1660	473	1110	131	403	46	458
16	346	e340	e240	e170	e210	1410	461	1210	133	321	44	963
17	378	e340	e230	e160	e220	1290	447	1480	136	270	48	267
18	442	e340	e230	e170	e210	1110	475	1300	126	219	44	123
19	423	e340	e240	e180	e200	1140	476	1290	126	180	38	78
20	412	e340	e240	e190	e190	1040	470	1270	122	141	34	72
21	405	e340	e240	e210	e200	990	444	1380	119	117	33	72
22	406	e230	e230	e220	e210	911	482	983	125	101	33	69
23	394	e170	e240	e220	e230	841	573	887	143	83	55	64
24	378	e140	e260	e210	e270	791	724	811	133	67	57	71
25	382	e170	e270	e200	e400	767	920	749	116	58	52	74
26	376	e210	e260	e190	e600	739	1210	629	106	51	51	71
27	360	e240	e250	e190	e1000	732	1520	522	95	66	49	69
28	349	e250	e250	e200	e1500	701	1860	428	95	49	45	66
29	e350	e260	e250	e200	---	710	1730	356	88	45	44	63
30	354	e260	e250	e190	---	697	1590	309	79	41	42	64
31	e340	---	e250	e190	---	759	---	273	---	38	41	---
TOTAL	9811	8923	7890	6210	8040	101578	21841	30865	4065	5424	1201	3142
MEAN	316	297	255	200	287	3277	728	996	135	175	38.7	105
MAX	442	340	300	250	1500	18000	1860	1530	243	1060	57	963
MIN	150	140	230	150	130	697	444	273	79	38	25	32
AC-FT	19460	17700	15650	12320	15950	201500	43320	61220	8060	10760	2380	6230

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1994, BY WATER YEAR (WY)

MEAN	236	207	147	138	427	1290	751	1141	1647	578	211	172
MAX	921	427	417	476	3850	4627	3062	5970	8045	2015	1096	898
(WY)	1941	1987	1942	1981	1943	1972	1965	1978	1944	1993	1941	1941
MIN	1.77	12.5	12.5	4.53	2.82	80.2	109	142	123	14.4	1.30	.19
(WY)	1961	1961	1961	1950	1950	1950	1961	1961	1966	1988	1988	1960

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1939 - 1994	
ANNUAL TOTAL	285529		208990			
ANNUAL MEAN	782		573		579	
HIGHEST ANNUAL MEAN					1622	1944
LOWEST ANNUAL MEAN					79.4	1961
HIGHEST DAILY MEAN	9460	Jul 4	18000	Mar 5	26000	Feb 19 1943
LOWEST DAILY MEAN	40	Feb 17	25	Aug 6	.00	Jan 16 1950
ANNUAL SEVEN-DAY MINIMUM	48	Jan 1	29	Aug 3	.00	Jan 16 1950
INSTANTANEOUS PEAK FLOW			20400	Mar 5	31000	Feb 19 1943
INSTANTANEOUS PEAK STAGE			10.61	Mar 5	a12.20	Mar 16 1978
INSTANTANEOUS LOW FLOW			24	Aug 6	b.00	
ANNUAL RUNOFF (AC-FT)	566300		414500		419200	
10 PERCENT EXCEEDS	1810		1120		1340	
50 PERCENT EXCEEDS	378		240		230	
90 PERCENT EXCEEDS	86		43		40	

a--Backwater from ice.
b--On many days in 1950, 1960-61, and 1988.
e--Estimated.

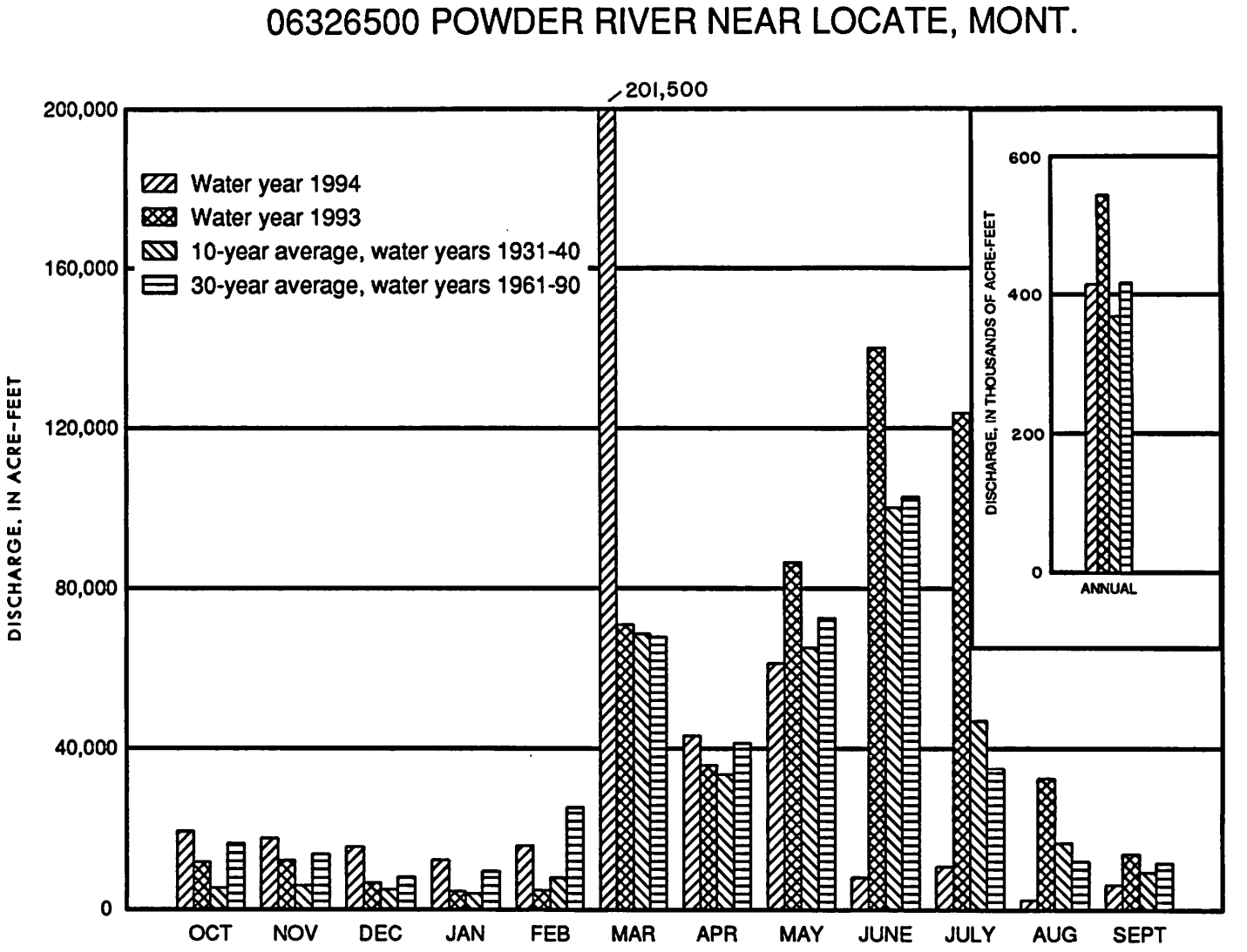

Figure 4.--Comparison of discharge of the Powder River during water year 1994 with discharge during water year 1993 and with 10-year and 30-year average discharges.

MONTHLY SUMMARY OF CONTENTS FOR COMPACT RESERVOIRS COMPLETED AFTER JANUARY 1, 1950

06258900 Boysen Reservoir, Wyo.

LOCATION.--Lat 43°25'00", long 108°10'37", in NW1/4 NW1/4 sec. 16, T.5 N., R.6 E., Fremont County, Hydrologic Unit 10080005, at dam on Wind River and 13 mi north of Shoshoni, Wyoming.

DRAINAGE AREA.--7,700 mi^2.

PERIOD OF RECORD.--October 1951 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is feet above sea level (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by rock-fill dam completed in October 1951. Storage began Oct. 11, 1951. Usable capacity, 742,100 acre-ft between elevation 4,657.00 ft, invert of penstock pipe, and 4,725.00 ft, top of spillway gate. Dead storage, 59,880 acre-ft below elevation 4,657.00 ft. Prior to Jan. 1, 1966, usable capacity was 757,800 acre-ft and dead storage was 62,000 acre-ft at same elevations. Crest of dam is at elevation 4,758.00 ft. Figures given herein represent usable contents. Water used for irrigation, flood control, and power development.

COOPERATION.--Elevations and capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 862,500 acre-ft, July 6, 7, 1967, elevation, 4,730.83 ft; minimum daily contents since normal use of water started, 191,900 acre-ft, Mar. 18, 19, 1956, elevation, 4,684.18 ft, capacity table then in use.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 676,100 acre-ft, Oct. 1, elevation, 4,721.52 ft; minimum daily contents, 444,200 acre-ft, Sept. 30, elevation, 4,707.21 ft.

Month	Water-surface elevation, in feet	Usable contents, in acre-feet	Change in usable contents, in acre-feet
September 30, 1993.	4,721.58	677,200	---
October 31.	4,720.06	649,600	-27,600
November 30	4,718.94	629,600	-20,000
December 31	4,717.51	604,800	-24,800
January 31, 1994.	4,716.23	583,100	-21,700
February 28	4,715.88	577,200	-5,900
March 31.	4,715.49	570,800	-6,400
April 30.	4,715.68	573,900	+3,100
May 31.	4,716.43	586,400	+12,500
June 30	4,714.81	559,600	-26,800
July 31	4,711.52	507,800	-51,800
August 31	4,708.63	464,700	-43,100
September 30, 1994.	4,707.21	444,200	-20,500
1994 water year			-233,000

06260300 Anchor Reservoir, Wyo.

LOCATION.--Lat 43°39'50", long 108°49'27", in sec. 26, T.43 N., R.100 W., Hot Springs County, Hydrologic Unit 10080007, at dam on South Fork Owl Creek, 2 mi downstream from Middle Fork, 3 mi southeast of Anchor, and 32 mi west of Thermopolis.

DRAINAGE AREA.--131 mi^2.

PERIOD OF RECORD.--November 1960 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is feet above sea level (Bureau of Reclamation benchmark).

REMARKS.--Reservoir is formed by concrete arch dam completed in 1960. Usable capacity, 17,160 acre-ft between elevation 6,343.75 ft, invert of river outlet, and 6,441.00 ft, spillway crest, including 68 acre-ft below elevation 6,343.75 ft. Prior to Oct. 1, 1971, usable capacity was 17,280 acre-ft, including 149 acre-ft below the invert. Figures given herein represent usable contents. Water is used for irrigation of land in Owl Creek basin.

COOPERATION.--Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 9,250 acre-ft, July 4, 1967, elevation, 6,418.52 ft; no usable storage on many days some years.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 821 acre-ft, May 12, elevation, 6,368.50 ft; minimum daily contents, 34 acre-ft, Sept. 1-7, 22-30, elevation, 6,340.00 ft.

Month	Water-surface elevation, in feet	Usable contents, in acre-feet	Change in usable contents, in acre-feet
September 30, 1993.	6,343.50	64	---
October 31.	6,342.00	51	-13
November 30	6,344.00	68	+17
December 31	6,343.00	59	-9
January 31, 1994.	6,343.00	59	0
February 28	6,356.30	292	+233
March 31.	6,355.00	254	-38
April 30.	6,365.60	659	+405
May 31.	6,347.70	116	-543
June 30	6,344.20	70	-46
July 31	6,344.00	68	-2
August 31	6,344.00	68	0
September 30, 1994.	6,340.00	34	-34
1994 water year			-30

06286400 Bighorn Lake near St. Xavier, Mont.

LOCATION.--Lat 45°18'27", long 107°57'26", in SW1/4 SE1/4 sec. 18, T.6 S., R.31 E., Big Horn County, Hydrologic Unit 10080010, in block 13 of Yellowtail Dam on Bighorn River, 1.3 mi upstream from Grapevine Creek, 15.5 mi southeast of St. Xavier, and at river mile 86.6.

DRAINAGE AREA.--19,626 mi^2.

PERIOD OF RECORD.--November 1965 to current year (monthend contents only). Prior to October 1969, published as "Yellowtail Reservoir."

GAGE.--Water-stage recorder in powerhouse control room. Datum of gage is feet above sea level (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by thin concrete-arch dam; construction began in 1961; completed in 1967. Storage began Nov. 3, 1965. Usable capacity, 1,356,000 acre-ft between elevation 3,296.50 ft, river outlet invert, and 3,657.00 ft, top of flood control. Elevation of spill-way crest, 3,593.00 ft. Normal maximum operating level, 1,097,000 acre-ft, elevation, 3,640.00 ft. Minimum operating level, 483,400 acre-ft, elevation 3,547.00 ft. Dead storage, 16,010 acre-ft below elevation 3,296.50 ft. Figures given herein represent usable contents. Water is used for power production, flood control, irrigation, and recreation.

COOPERATION.--Elevations and capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 1,346,000 acre-ft, July 6, 1967, elevation, 3,656.43 ft; minimum daily contents since first filling, 641,900 acre-ft, Apr. 14, 1989, elevation, 3,583.30 ft.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 1,066,000 acre-ft, Oct. 14, elevation, 3,640.93 ft; minimum daily contents, 747,400 acre-ft, Sept. 13, elevation, 3,603.35 ft.

Month	Water-surface elevation, in feet	Usable contents, in acre-feet	Change in usable contents, in acre-feet
September 30, 1993	3,638.82	1,039,000	---
October 31	3,635.65	1,002,000	-37,000
November 30	3,627.60	921,100	-80,900
December 31	3,623.22	883,200	-37,900
January 31, 1994	3,614.52	817,300	-65,900
February 28	3,608.19	775,900	-41,400
March 31	3,609.38	783,300	+7,400
April 30	3,613.37	809,400	+26,100
May 31	3,620.26	859,600	+50,200
June 30	3,615.00	820,700	-38,900
July 31	3,608.77	779,500	-41,200
August 31	3,604.14	751,900	-27,600
September 30, 1994	3,608.06	775,100	+23,200
1994 water year			-263,900

MONTHLY SUMMARY OF CONTENTS FOR COMPACT RESERVOIRS EXISTING ON JANUARY 1, 1950

The extent, if any, of the use of reservoirs in this section which may be subject to Compact allocations was not determined. As a matter of hydrologic interest the monthend contents in acre-feet of four reservoirs are given. The first three reservoirs are in the Bighorn River basin, Wyoming, and data on contents were furnished by the Bureau of Reclamation. The Tongue River Reservoir in Montana is operated under the supervision of the Water Resources Division of the Montana Department of Natural Resources and Conservation, which furnished the water level data.

	Contents, in acre-feet			
Month	06224500 a/Bull Lake	b/Pilot Butte Reservoir	06281500 c/Buffalo Bill Reservoir	06307000 d/Tongue River Reservoir
September 30, 1993. . .	94,740	14,750	417,900	24,440
October 31.	89,570	27,410	406,400	21,320
November 30	88,730	27,810	393,000	21,300
December 31	87,850	27,680	384,300	20,450
January 31, 1994. . . .	86,690	27,490	374,600	19,200
February 28	85,450	27,370	364,300	14,260
March 31.	84,530	27,280	360,000	30,220
April 30.	85,520	27,600	357,000	28,730
May 31.	105,100	18,310	412,400	45,680
June 30	107,800	19,810	429,100	43,740
July 31	75,910	10,260	358,400	32,000
August 31	53,380	10,370	271,900	18,940
September 30, 1994. . .	42,940	7,760	209,100	14,490
Change in contents during water year. .	-51,800	-6,990	-208,800	-9,950

a/ Usable contents, from revised capacity table effective October 1, 1965. Dead storage is 722 acre-ft.

b/ Usable contents. Dead storage is 5,360 acre-ft.

c/ Usable contents, from revised capacity table based on survey of 1959. Usable contents prior to October 1960 based on survey of 1941. Dead storage is negligible.

d/ Usable contents. Dead storage is 1,400 acre-ft. Contents based upon sedimentation surveys of October 1948.

RULES AND REGULATIONS FOR ADMINISTRATION OF THE YELLOWSTONE RIVER COMPACT

A compact, known as the Yellowstone River Compact, between the States of Wyoming, Montana, and North Dakota, having become effective on October 30, 1951, upon approval of the Congress of the United States, which apportions the waters of certain interstate tributaries of the Yellowstone River which are available after the appropriative rights existing in the States of Wyoming and Montana on January 1, 1950 are supplied, and after appropriative rights to the use of necessary supplemental water are also supplied as specified in the Compact, is administered under the following rules and regulations subject to the provisions for amendment revision or abrogation as provided herein.

Article I. Collection of Water Records

A. It shall be the joint and equal responsibility of the members of the States of Wyoming and Montana to collect, cause to be collected, or otherwise furnish records of tributary streamflow at the points of measurement specified in Article V (B) of the Compact, or as near thereto as is physically or economically feasible or justified.

1. Clarks Fork

   The gaging station known as Clarks Fork near Silesia, Montana and located in NW1/4 SE1/4 sec. 1, T. 4 S., R. 23 E., shall be the point of measurement for the Clarks Fork.

2. Bighorn River (exclusive of Little Bighorn River)

   The gaging station known as the Bighorn River above Tullock Creek, near Bighorn, Montana, and located in SE1/4 SE1/4 NE1/4 sec. 3, T. 4 N., R. 34 E., shall temporarily be the designated point of measurement on that stream. The flow of the Little Bighorn River as measured at the gaging station near Hardin, Montana, and located in SE1/4 NE1/4 NE1/4 sec. 19, T. 1 S., R. 34 E., shall be considered the point of measurement for that stream, except that if or when satisfactory records are not available, the records for the nearest upstream station with practical corrections for intervening inflow or diversion shall be used.

3. Tongue River

   The gaging station known as the Tongue River at Miles City, Montana, and located in NE1/4 NE1/4 SE1/4 sec. 23, T. 7 N., R. 47 E., shall temporarily be the point of measurement for that stream.

4. Powder River

The gaging station known as the Powder River near Locate, Montana, and located in NW1/4 SW1/4 sec. 14, T. 8 N., R. 51 E., shall temporarily be the designated point of measurement for that stream.

B. Records of total annual diversion in acre-feet above the points of measurement designated in the Compact for irrigation, municipal, and industrial uses developed after January 1, 1950, shall be furnished by the members of the Commission for their respective States, at such time as the Commission deems necessary for interstate administration as provided by the terms of the Compact. Providing that if it be acceptable to the Commission, reasonable estimates thereof may be substituted.

C. Annual records of the net change in storage in all reservoirs, not excluded under Article V (E) of the Compact, above the point of measurement specified in the Compact and completed after January 1, 1950, and the annual net change in reservoirs existing prior to January 1, 1950, which is used for irrigation, municipal, and industrial purposes developed after January 1, 1950, shall be the primary responsibility of the member of the Commission in whose State such works are located; providing such data are not furnished by Federal agencies under the provisions of Article III (D) of the Compact, or collected by the Commission.

Article II. Office and Officers

A. The office of the Commission shall be located at the office of the Chairman of the Commission.

B. The Chairman of the Commission shall be the Federal representative as provided in the Compact.

C. The Secretary of the Commission shall be as provided for in Article III of these rules.

D. The credentials of each member of the Commission shall be placed on file in the office of the Commission.

Article III. Secretary

A. The Commission, subject to the approval of the Director of the United States Geological Survey, shall enter into cooperative agreements with the U.S. Geological Survey for such engineering and clerical services as may reasonably be necessary for the administration of the Compact. Said agreements shall provide that the Geological Survey shall:

1. Maintain and operate gaging stations at or near the points of measurement specified in Article V (A) of the Compact.

2. Assemble factual information on stream flow, diversion, and reservoir storage for the preparation of an annual report to the Governors of the signatory States.

3. Make such investigations and reports as may be requested by the Commission in aid of its administration of the Compact.

B. The Geological Survey shall act as Secretary to the Commission.

Article IV. Budget

A. At the annual meeting of each even-numbered year or prior thereto, the Commission shall adopt a budget for operation during the ensuing biennium beginning July first. Such budget shall set forth the total cost of construction, maintenance and operation of gaging stations, the cost of engineering and clerical aid, and other necessary expenses excepting the salaries and personal expenses of the Commissioners. On odd-numbered years revisions of the budget shall be considered.

B. It shall be the obligation of the Commissioners of the States of Montana and Wyoming to endeavor to secure from the Legislature of their respective States sufficient funds with which to meet the obligations of this Compact, except insofar as provided by the Federal government.

Article V. Meetings

An annual meeting of the Commission shall be held each November at some mutually agreeable point in the Yellowstone River Basin for consideration of the annual report for the water year ending the preceding September 30th, and for the transaction of such other business consistent with its authority; provided that by unanimous consent of the Commission the date and place of the annual meeting may be changed. Other meetings as may be deemed necessary shall be held at a time and place set by mutual agreement, for the transaction of any business consistent with its authority.

No action of the Commission shall be effective until approval by the Commissioners for the States of Wyoming and Montana.

Article VI. Amendments, Revisions and Abrogations.

The Rules and Regulations of the Commission may be amended or revised by a unanimous vote at any meeting of the Commission.

Gary Fritz
Commissioner for Montana

George L. Christopulos
Commissioner for Wyoming

ATTESTED:

L. Grady Moore
Federal Representative

Adopted November 17, 1953
Amended December 16, 1986

RULES FOR ADJUDICATING WATER RIGHTS ON INTERSTATE DITCHES

Article I. Purpose

The purpose of this rule is to determine and adjudicate, in accordance with the laws of Montana and Wyoming, those pre-Compact (January 1, 1950) water rights diverting from the Powder, Tongue, Bighorn and Clarks Fork Rivers and their tributaries where the point of diversion is in one State and the place of use is in the other State which have not yet been adjudicated.

Article II. Authority

In accordance with the Yellowstone River Compact, the State of Montana and the State of Wyoming, being moved by consideration of interstate comity, desire to remove all causes of present and future controversy between the States and between persons in one State and persons in another State with respect to these interstate ditches. Article III (E) of the Compact provides the Yellowstone River Compact Commission with the authority "...to formulate rules and regulations and to perform any act which they may find necessary to carry out the provisions of this Compact...."

Article III. Definitions

The terms defined in the Yellowstone River Compact apply as well as the following definitions:

1. "Acre-feet" means the volume of water that would cover 1 acre of land to a depth of 1 foot.

2. "Cfs" means a flow of water equivalent to a volume of 1 cubic foot that passes a point in 1 second of time and is equal to 40 miners inches in Montana.

3. "Interstate Ditches" shall include ditches and canals which convey waters of the Bighorn, Tongue, Powder, and Clarks Fork Rivers and their tributaries across the Wyoming-Montana State line where the water is diverted in one State and the place of use is in the other State.

4. "Department of Natural Resources and Conservation," hereafter called the "Department," means the administrative agency and Department of the Executive Branch of the Government of Montana created under Title II, Chapter 15, MCA which has the responsibility for water administration in that State.

5. "Water Court" means a Montana District Court presided over by a water judge, as provided for in Title III, Chapter 7, MCA.

6. "State Engineer" shall be the current holder of the position created by the Wyoming Constitution as Chief Water Administration Official for the State of Wyoming.

7. "Board of Control," hereinafter called the "Board," is defined as the constitutionally created water management agency in Wyoming composed of the four Water Division Superintendents and the State Engineer.

8. "Superintendent" is the member of the Board who is the water administration official for the Water Division where the interstate ditch is located. (The two Water Divisions in the Yellowstone River drainage are Water Division Numbers Two and Three.)

9. "Date of Priority" shall mean the earliest date of actual beneficial use of water, unless evidence and circumstances pertaining to a particular claim establish an earlier date.

10. "Point of Diversion" is defined to be the legal land description by legal subdivision, section, township, and range of the location of the diversion structure for an interstate ditch from a natural stream channel.

11. "Place of Use" is defined to be the legal land description (legal subdivision, section, township, and range) of the lands irrigated by an interstate ditch.

12. "Person" is defined as an individual, a partnership, a corporation, a municipality or any other legal entity, public or private.

13. "Claimant" is defined as any person claiming the use of water from an interstate ditch as herein defined.

Article IV. Procedures

The procedures for determining and adjudicating water rights associated with interstate ditches shall be categorized as follows: (A) Where the point of diversion is in Wyoming and place of use in Montana, and (B) Where the point of diversion is in Montana and place of use in Wyoming.

A. Wyoming Procedure

1. The Yellowstone River Compact Commission will provide a claim form to be completed by the claimant that will describe the location and point of diversion and land being irrigated, the priority date claimed, method of irrigation and such other information required to describe the claim. (A sample form for this purpose is attached.)

2. The Yellowstone River Compact Commission will send the claim form to water users on the interstate ditches.

3. Water users will complete the claim form and file it with the Yellowstone Compact Commission, which, when found to be correct and complete, will be forwarded to the Board for verification.

4. Upon receipt of the form, the Board shall forward it to the appropriate Superintendent, who, in cooperation with the Department, will validate the information including the use that has been made of the water, the number of acres and location of lands being irrigated, the priority date, and all other relevant information. The Superintendent and the Department will utilize aerial photography and other information to have prepared a reproducible map showing the location of the ditch system, lands irrigated, point of diversion, etc., of the claim.

5. After the validation procedure, the Superintendent will hold a hearing, after appropriate notice and advertisement, at which time the claimant shall describe, in detail, the use that has been made of the water and the lands that are being irrigated, establish a priority date, etc. Costs incurred in advertising shall be paid by the claimant. If a single hearing is held to consider several claims, the costs of advertising shall be shared equally among the claimants. Anyone who opposes the claim shall appear and state the reasons, if any, for opposition to the claim. If there is no opposition to the claim, cost incurred in holding the hearing shall be paid by the claimant. If protestants do appear and oppose the claim, hearing costs will be paid 50 percent by the claimant and 50 percent by the protestant, or if there is more than one protestant, the remaining 50 percent shall be shared equally among the protestants.

6. At the conclusion of the hearing, the Superintendent shall forward the record to the Yellowstone River Compact Commission with his findings and recommendations. The Yellowstone River Compact Commission will make the

determination of the amount of the right, the location, and the priority date, and then send the record to the Board.

7. The Board shall review the record and integrate it into its water rights system. Upon entry of the record by the Board, the information shall be forwarded to the Department and the Chairman of the Yellowstone River Compact Commission.

8. Upon the entry of the right into the Board's records, it will have the following attributes:

   a. The right will be a Wyoming water right with a priority date as established by this procedure.

   b. The amount of the right will be determined as provided by Wyoming law.

B. Montana Procedure

1. The Yellowstone River Compact Commission will provide a claim form to be completed by the claimant that will describe the location and point of diversion and land being irrigated, the priority date claimed, method of irrigation and such other information required to describe the claim.

2. The Commission will send the claim form to water users on the interstate ditches.

3. Water users will complete the claim form and file it with the Yellowstone River Compact Commission, which, when found to be correct and complete, will be forwarded to the Department for verification.

4. Upon receipt of the form, the Department, in cooperation with the Wyoming State Engineer's Office, will validate the information, including the use that has been made of the water, the number of acres and location of lands being irrigated, the priority date, and all other relevant information. The appropriate Superintendent and the Department will utilize aerial photographs and other information to have prepared a reproducible map showing the location of the ditch system, land irrigated, point of diversion, etc., of the claim.

5. The Department will then forward the record to the Yellowstone River Compact Commission with its findings and recommendations. Upon approval by the Commission, the record shall be submitted to the Montana Water Court for adjudication. A duplicate record will be forwarded to the Wyoming State Engineer's Office, the Board, and the Chairman of the Yellowstone River Compact Commission upon adjudication.

6. Upon adjudication of the right by the Montana Water Court, it will have the following attributes:

   a) The right will be a Montana water right with a priority date as established by this procedure.

   b) The amount of the right will be determined as provided by Montana law.

Article V. Exclusions

A. These rules recognize the limitation in Article VI of the Yellowstone River Compact regarding Indian water rights.

B. These rules shall not be construed to determine or interpret the rights of the States of Wyoming and Montana to the waters of the Little Bighorn River.

Article VI. Claim Form Submission Period

All claims must be submitted to the Yellowstone River Compact Commission, c/o District Chief, United States Geological Survey, 821 E. Interstate, Bismarck, ND 58501, within 90 calendar days after the claimant has received the claim form from the Commission. The blank claim form will be sent certified mail to the water user and the submission period of 90 calendar days will begin with the next day following receipt of the form, as evidenced by the certified mail receipt card. For good cause shown in writing, an extension of time beyond the 90 days for submittal may be obtained from the Commission.

YELLOWSTONE RIVER COMPACT COMMISSION

WYOMING

GORDON W. FASSETT
STATE ENGINEER
HERSCHLER BUILDING
4TH FLOOR EAST
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UNITED STATES

WILLIAM F. HORAK
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U.S. GEOLOGICAL SURVEY
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MONTANA

GARY FRITZ
ADMINISTRATOR, WATER RESOURCES DIVISION
DEPT. OF NATURAL RESOURCES & CONSERVATION
1520 EAST SIXTH AVENUE
HELENA, MONTANA 59620
(406) 444-6603

YELLOWSTONE RIVER COMPACT COMMISSION

CLAIM FORM FOR INTERSTATE DITCHES

1. Name of ditch or canal: _____

2. Source of water supply: _____

   Tributary of _____

3. Name of claimant: _____

   Address _____

   City _____ State _____ Zip Code _____

   Home Phone No. _____ Business Phone No. _____

4. Person completing form: _____

   Address _____

   City _____ State _____ Zip Code _____

   Home Phone No. _____ Business Phone No. _____

5. Method of irrigation: _____

6. Point of diversion: County _____ State _____

   Headgate located in the ___¼ ___¼, Section ____, T.___R.____

   (a) Description of headgate: (Briefly describe the materials and general features, date constructed or last known work, general condition.) _____

   _____

   _____

(b) Describe water measuring device: _____

_____

_____

(c) If the point of diversion is in Montana:

1. What flow rate has been claimed?

_____ ☐ cubic feet per second

☐ gallons per minute

☐ miner's inches

2. What volume of water has been claimed?

_____ acre-feet

7. Dimensions of ditch at headgate: Width at top (at waterline) _____ feet; width at bottom _____ feet; side slopes (vertical:horizontal) _____:_____; depth of water _____ feet; grade _____ feet per mile.

8. Place of use and acres irrigated: County_____ State _____ Give legal subdivisions of land owned by you on which water is being used (acres claimed): An example field is shown in the first line.

T.	R.	SEC.	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE¼	NW¼	SW¼	SE¼	NE¼	MW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
58N	95W	18			25.1											10.2			35.3

9. Describe any additional uses of water claimed from the ditch: _____

10. Date of first beneficial use of water (priority date) on lands described above for _____ Ditch is _____ (mo/day/yr) and shall be the same for all lands claimed on this form.

11. Has irrigation water been diverted onto all lands shown in the above tabulation each year since completion of works? __ If not, state exceptions and reasons therefore: _____

_____

_____

12. Attach documentary evidence or affidavits showing your ownership or control of the above lands, as well as the historic use of water on these lands. _____

_____

_____

13. What permit or claim numbers have been assigned to known records filed with either the Wyoming State Engineer's Office or the Montana Department (DNRC) for irrigating the above lands? _____

_____

_____

14. Have personnel in the Wyoming State Engineer's Office or the Montana Department (DNRC) been contacted to obtain the information given in No. 13? ( ) Yes ( ) No

15. Describe any flumes or pipelines in the ditch conveyance system: _____

_____

_____

16. Describe ordinary annual period of use: _____ to _____
(mo/day) (mo/day)

_____.

17. Attach copies of aerial photographs, U. S. Geological Survey maps or other such documents showing the ditch and lands irrigated that give evidence to this claim and may be useful to the Commission.

* * * * * * * * * * *

State of _____)
) SS
State of _____)

I, _____, having been duly sworn, depose and say that I, being of legal age and being the claimant of this claim for a water right, and the person whose name is signed to it as the claimant, know the contents of this claim and the matters and things stated there are correct.

_____

_____

Subscribed and sworn before me, this ____day of _____, 19__.

_____
Notary Public

Residing at: _____

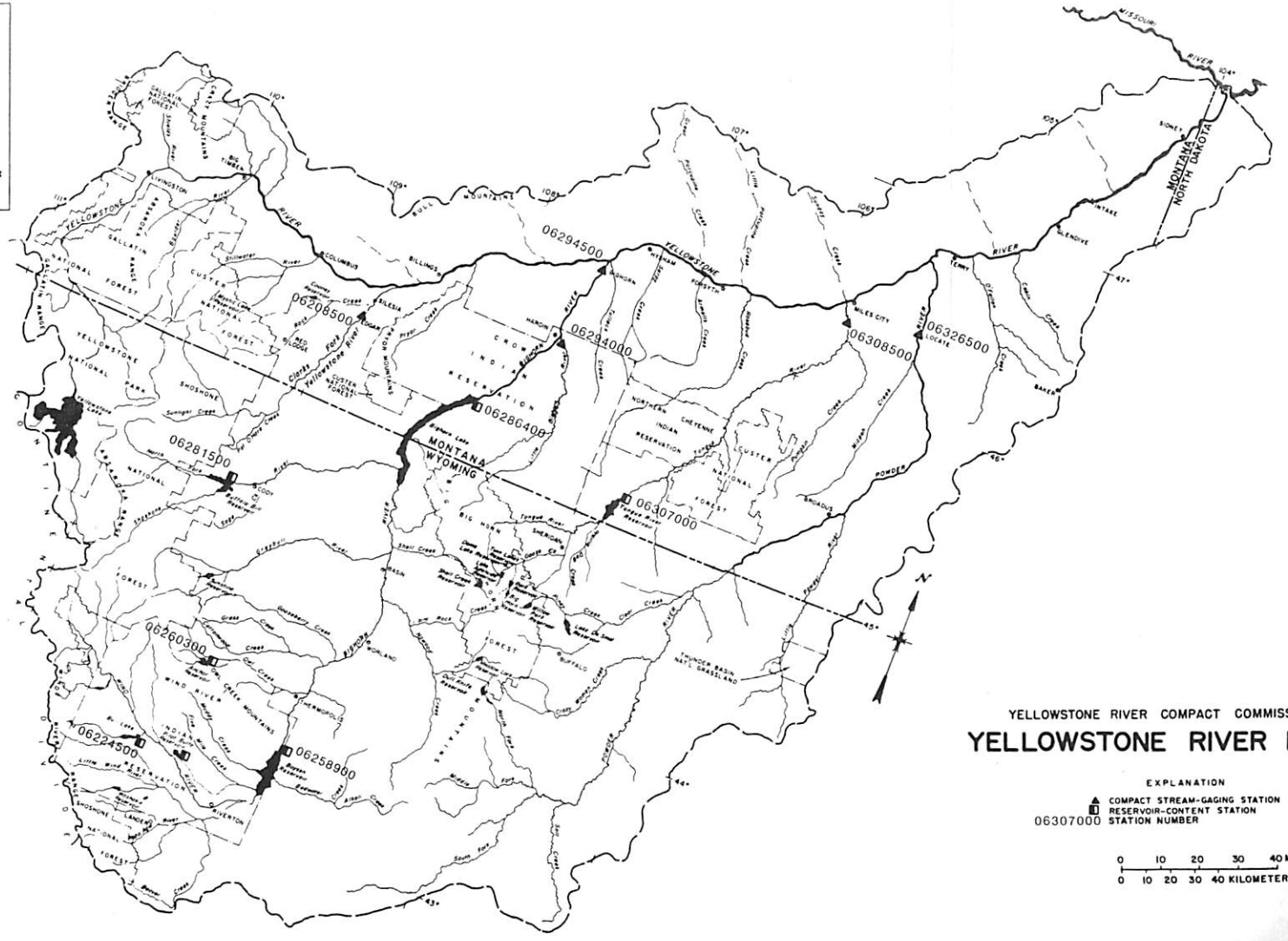
My commission expires: _____

CONVERSION TABLE

Multiply inch-pound units	By	To obtain SI units
	Length	
feet (ft)	0.3048	meters (m)
miles (mi)	1.609	kilometers (km)
	Area	
acres	4,047	square meters (m^2)
	0.4047	*hectares (ha)
	0.4047	square hectometer (hm^2)
	0.004047	square kilometers (km^2)
square miles (mi^2)	2.590	square kilometers (km^2)
	Volume	
cfs-day or second-foot day (ft^3/s-day)	2,447	cubic meters (m^3)
	0.002447	cubic hectometers (hm^3)
cubic feet	0.02832	cubic meters
acre-feet (acre-ft)	1,233	cubic meters (m^3)
	0.001233	cubic hectometers (hm^3)
	0.000001233	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	28.32	liters per second (L/s)
	28.32	cubic decimeters per second (dm^3/s)
	0.02832	cubic meters per second (m^3/s)
acre-feet per year (acre-ft/yr)	1,233	cubic meters per year (m^3/yr)
	0.001233	cubic hectometers per year (hm^3/yr)
	0.000001233	cubic kilometers per year (km^3/yr)

*The unit hectare is approved for use with the International System (SI) for a limited time. See National Bureau of Standards Special Bulletin 330, p. 12, 1977 edition.

LOCATION MAP



YELLOWSTONE RIVER COMPACT COMMISSION

YELLOWSTONE RIVER BASIN

EXPLANATION

▲ COMPACT STREAM-GAGING STATION
▯ RESERVOIR-CONTENT STATION
06307000 STATION NUMBER

0 10 20 30 40 MILES
0 10 20 30 40 KILOMETERS

MAP SHOWING LOCATIONS OF COMPACT STREAM-GAGING AND RESERVOIR-CONTENT STATIONS