

## RED RIVER OF THE NORTH BASIN--Continued

05046000 OTTER TAIL RIVER BELOW ORWELL DAM, NEAR FERGUS FALLS, MN

LOCATION.--Lat 46°12'35", long 96°11'05", in NE $\frac{1}{4}$  sec. 34, T.132 N., R.44 W., Otter Tail County, Hydrologic Unit 09020103, on left bank 0.7 mi downstream from Orwell Dam on County Highway 15, 6.1 mi downstream from Dayton Hollow Dam, 8 mi southwest of Fergus Falls, and 11.1 mi downstream from Pelican River.

DRAINAGE AREA.--1,740 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1930 to current year. Prior to October 1952, published as "Otter Tail River below Pelican River, near Fergus Falls". Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 785: 1934(M). WSP 1208: 1947(M). WSP 1308: 1931(M).

GAGE.--Water-stage recorder. Datum of gage is 1,029.65 ft above sea level ((NGVD of 1912, levels by U.S. Army Corps of Engineers). Oct. 11, 1930 to Nov. 17, 1933, at same site at datum 2.00 ft higher; Nov. 18, 1933 to Mar. 21, 1953, at site 6.1 mi upstream at datum 40.30 ft higher.

REMARKS.--Records good. Flow regulated at Orwell Lake (station 05045950) beginning Mar. 21, 1953, and by power plant upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	428	399	425	518	415	407	526	699	738	500	629	531
2	446	400	425	518	390	446	513	687	733	467	589	530
3	400	398	425	518	392	446	513	676	713	468	562	578
4	370	397	425	492	397	425	513	678	672	473	562	606
5	370	397	423	477	422	390	513	675	654	476	562	609
6	370	397	442	479	440	377	512	647	632	477	562	623
7	368	376	457	477	440	396	513	641	608	481	565	635
8	369	340	458	478	440	411	492	719	585	621	567	634
9	367	340	458	477	440	413	477	786	585	723	567	629
10	370	340	475	477	440	411	480	831	588	832	567	627
11	412	340	489	477	460	432	601	857	589	1070	564	614
12	456	341	489	477	495	446	651	858	588	1070	546	543
13	477	342	489	477	511	446	561	858	587	1060	534	504
14	476	340	489	505	488	485	565	878	584	1050	513	503
15	472	344	489	523	476	513	663	813	584	886	496	502
16	465	348	489	521	475	513	717	766	583	765	496	473
17	446	349	489	518	473	512	718	840	580	725	499	452
18	419	349	490	500	471	511	717	858	578	694	502	449
19	411	349	516	479	471	512	717	855	548	693	503	428
20	404	374	516	477	474	509	717	811	512	693	594	411
21	404	397	470	477	474	483	713	761	525	699	668	415
22	404	397	453	461	472	454	679	747	545	695	660	415
23	404	397	456	452	471	440	658	749	548	658	577	411
24	405	397	456	452	475	440	662	747	552	635	523	396
25	405	397	457	468	473	440	637	747	568	589	422	383
26	404	397	453	477	472	440	623	748	584	618	179	344
27	404	397	421	477	423	462	624	746	560	675	202	314
28	404	411	420	477	375	477	628	742	545	675	216	340
29	404	431	452	477	---	522	713	739	545	675	272	343
30	403	425	453	463	---	549	729	741	545	671	478	334
31	397	---	490	452	---	546	---	741	---	649	528	---
TOTAL	12734	11306	14339	14998	12645	14254	18345	23641	17758	21463	15704	14576
MEAN	411	377	463	484	452	460	612	763	592	692	507	486
MAX	477	431	516	523	511	549	729	878	738	1070	668	635
MIN	367	340	420	452	375	377	477	641	512	467	179	314
AC-FT	25260	22430	28440	29750	25080	28270	36390	46890	35220	42570	31150	28910
CFSM	0.24	0.22	0.27	0.28	0.26	0.26	0.35	0.44	0.34	0.40	0.29	0.28
IN.	0.27	0.24	0.31	0.32	0.27	0.30	0.39	0.51	0.38	0.46	0.34	0.31

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	256	268	260	253	256	341	509	612	597	453	308	259
MAX	973	831	740	737	742	785	1199	1427	1442	1246	1080	1026
(WY)	1994	1986	1999	1999	1999	1999	1997	1986	2001	1953	1985	1993
MIN	9.15	8.42	8.10	15.1	10.8	23.5	39.5	14.1	14.2	12.8	11.5	7.99
(WY)	1977	1977	1977	1937	1935	1937	1934	1977	1934	1936	1934	1934

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1931 - 2002

ANNUAL TOTAL		281121		191763								
ANNUAL MEAN		770		525						365		
HIGHEST ANNUAL MEAN										846		1999
LOWEST ANNUAL MEAN										20.4		1934
HIGHEST DAILY MEAN				1580	May 29		1070	Jul 11,12	1670		Jun 20	1953
LOWEST DAILY MEAN				119	Aug 15		179	Aug 26		1.6a	Feb 7	1937
ANNUAL SEVEN-DAY MINIMUM				340	Nov 8		327	Aug 24		5.9	Sep 15	1934
MAXIMUM PEAK FLOW							1080	Jul 12		2040	May 29	2001
MAXIMUM PEAK STAGE							4.04	Jul 12		5.60	Jun 17	1953
INSTANTANEOUS LOW FLOW							154b	Aug 25		0.70a	Aug 5	1970
ANNUAL RUNOFF (AC-FT)			557600				380400			264200		
ANNUAL RUNOFF (CFSM)			0.44				0.30			0.21		
ANNUAL RUNOFF (INCHES)			6.01				4.10			2.85		
10 PERCENT EXCEEDS			1310				718			790		
50 PERCENT EXCEEDS			667				489			295		
90 PERCENT EXCEEDS			397				394			37		

a Due in part to regulation.  
 b Due to regulation.

