

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 mi².

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 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	143	138	111	149	173	260	462	333	917	444	355	174
2	136	138	90	149	130	260	379	336	910	420	354	206
3	134	138	88	154	102	260	336	333	905	421	394	227
4	136	138	86	154	100	260	336	335	807	421	442	228
5	136	138	85	154	99	260	359	372	747	420	458	237
6	136	136	84	151	117	260	403	390	747	555	435	236
7	136	133	84	123	128	260	447	388	747	584	420	340
8	136	133	85	106	128	260	401	388	747	648	420	439
9	137	133	86	106	131	260	371	384	744	653	420	455
10	138	133	87	106	133	292	365	359	714	626	420	454
11	138	133	87	107	133	310	360	343	695	624	420	460
12	136	133	86	124	133	306	360	351	695	580	440	459
13	136	119	86	138	167	306	360	353	692	553	457	501
14	113	106	86	138	190	307	361	389	693	552	455	478
15	100	106	86	137	190	306	409	414	667	531	453	458
16	118	106	87	135	190	268	435	419	658	520	438	492
17	147	81	86	138	190	243	433	420	662	522	417	564
18	147	79	102	138	190	283	432	424	657	522	404	587
19	145	94	111	137	190	329	429	460	652	496	388	580
20	144	98	110	114	175	345	428	480	651	486	373	630
21	127	98	111	101	165	344	431	480	650	486	356	743
22	110	98	112	101	165	366	421	484	618	472	355	817
23	110	100	113	100	165	380	419	488	597	460	451	817
24	110	247	111	101	165	336	416	490	597	454	485	817
25	113	202	113	100	196	323	418	486	572	449	157	813
26	112	174	114	101	242	336	419	534	556	382	156	806
27	112	143	114	102	260	337	414	592	556	318	216	759
28	114	143	114	102	260	342	406	605	553	333	220	675
29	113	139	134	135	260	450	408	601	519	354	220	641
30	127	138	149	180	---	564	380	602	486	356	193	596
31	138	---	149	175	---	552	---	782	---	355	171	---
TOTAL	3,978	3,895	3,147	3,956	4,867	9,965	11,998	13,815	20,411	14,997	11,343	15,689
MEAN	128	130	102	128	168	321	400	446	680	484	366	523
MAX	147	247	149	180	260	564	462	782	917	653	485	817
MIN	100	79	84	100	99	243	336	333	486	318	156	174
AC-FT	7,890	7,730	6,240	7,850	9,650	19,770	23,800	27,400	40,490	29,750	22,500	31,120
CFSM	0.07	0.07	0.06	0.07	0.10	0.18	0.23	0.26	0.39	0.28	0.21	0.30
IN.	0.09	0.08	0.07	0.08	0.10	0.21	0.26	0.30	0.44	0.32	0.24	0.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2004, BY WATER YEAR (WY)

MEAN	256	267	260	253	256	341	507	610	598	458	310	260
MAX	973	831	740	737	742	785	1,199	1,427	1,442	1,246	1,080	1,026
(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)

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SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1931 - 2004	
ANNUAL TOTAL	132,121		118,061			
ANNUAL MEAN	362		323		365	
HIGHEST ANNUAL MEAN					846	1999
LOWEST ANNUAL MEAN					20.4	1934
HIGHEST DAILY MEAN	961	Jul 1	a917	Jun 1	1,670	Jun 20, 1953
LOWEST DAILY MEAN	75	Sep 23	a79	Nov 18	a1.6	Feb 7, 1937
ANNUAL SEVEN-DAY MINIMUM	77	Sep 20	85	Dec 4	5.9	Sep 15, 1934
MAXIMUM PEAK FLOW			924	May 31	2,040	May 29, 2001
MAXIMUM PEAK STAGE			3.77	May 31	5.60	Jun 17, 1953
INSTANTANEOUS LOW FLOW			a57	Nov 17	a0.70	Aug 5, 1970
ANNUAL RUNOFF (AC-FT)	262,100		234,200		264,400	
ANNUAL RUNOFF (CFSM)	0.208		0.185		0.210	
ANNUAL RUNOFF (INCHES)	2.82		2.52		2.85	
10 PERCENT EXCEEDS	691		620		786	
50 PERCENT EXCEEDS	345		314		300	
90 PERCENT EXCEEDS	100		105		39	

a Due in part to regulation.

