Water-Data Report 2012

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

Upper Red Basin
Otter Tail Subbasin

LOCATION.--Lat 46°12′35″, long 96°11′05″ referenced to North American Datum of 1927, in NE ¼ NE ¼ sec.34, T.132 N., R.44 W., Otter Tail County, MN, 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^2.

SURFACE-WATER RECORDS

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 plants upstream.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	661	469	504	493	446	486	627	915	1,070	952	649	318
2	656	480	500	490	427	526	629	939	1,070	899	578	318
3	637	480	500	486	453	550	680	980	1,070	843	533	315
4	622	504	500	447	467	550	706	1,000	1,040	e810	534	287
5	622	518	475	363	467	550	700	1,010	1,020	e810	532	232
6	546	518	460	324	492	550	699	1,010	992	e800	526	196
7	586	516	460	324	506	550	699	1,010	976	e790	527	217
8	609	512	460	324	506	550	699	1,020	977	e790	529	228
9	608	494	456	444	506	550	699	1,020	980	e780	501	228
10	609	463	453	525	458	550	699	1,020	982	e770	470	228
11	609	448	453	525	433	550	669	1,020	981	755	454	228
12	612	447	453	525	433	550	646	1,020	978	743	460	223
13	609	447	453	525	433	573	616	1,020	972	743	457	220
14	576	447	453	521	433	622	595	1,020	971	736	457	220
15	545	429	453	516	433	667	605	1,020	972	728	476	220
16	547	420	453	512	433	685	733	991	975	699	482	226
17	548	414	453	450	433	685	944	976	972	678	481	228
18	566	397	453	414	433	682	1,030	981	970	678	469	234
19	576	388	453	414	433	679	1,050	981	971	615	414	228
20	576	388	453	400	433	641	1,040	976	970	629	e400	206
21	576	388	453	388	457	618	1,040	973	970	651	e390	190
22	544	388	453	388	473	615	1,030	950	880	646	382	190
23	518	388	453	389	473	615	1,000	934	988	573	341	190
24	473	388	453	395	502	621	982	934	988	527	286	190
25	447	388	453	421	518	622	982	934	1,040	500	263	156
26	464	388	453	469	518	624	979	934	1,070	474	266	114
27	480	388	457	493	518	633	935	939	1,040	520	268	114
28	463	413	480	493	500	629	910	941	989	546	265	114
29	453	427	493	493	486	629	910	980	964	553	296	114
30	453	475	493	491	---	628	910	1,010	962	614	312	114
31	453	---	493	486	---	629	---	1,040	---	657	317	---
Total	17,244	13,210	14,432	13,928	13,503	18,609	24,443	30,498	29,800	21,509	13,315	6,286
Mean	556	440	466	449	466	600	815	984	993	694	430	210
Max	661	518	504	525	518	685	1,050	1,040	1,070	952	649	318
Min	447	388	453	324	427	486	595	915	880	474	263	114
Ac-ft	34,200	26,200	28,630	27,630	26,780	36,910	48,480	60,490	59,110	42,660	26,410	12,470
Cfsm	0.32	0.25	0.27	0.26	0.27	0.34	0.47	0.57	0.57	0.40	0.25	0.12
In.	0.37	0.28	0.31	0.30	0.29	0.40	0.52	0.65	0.64	0.46	0.28	0.13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	295	311	300	295	294	388	568	677	662	499	343	292
Max	1,639	1,810	1,485	1,372	1,207	1,259	1,807	1,935	1,749	1,415	1,148	1,499
(WY)	(2011)	(2011)	(2011)	(2011)	(2011)	(2011)	(2009)	(2011)	(2011)	(2011)	(2011)	(2010)
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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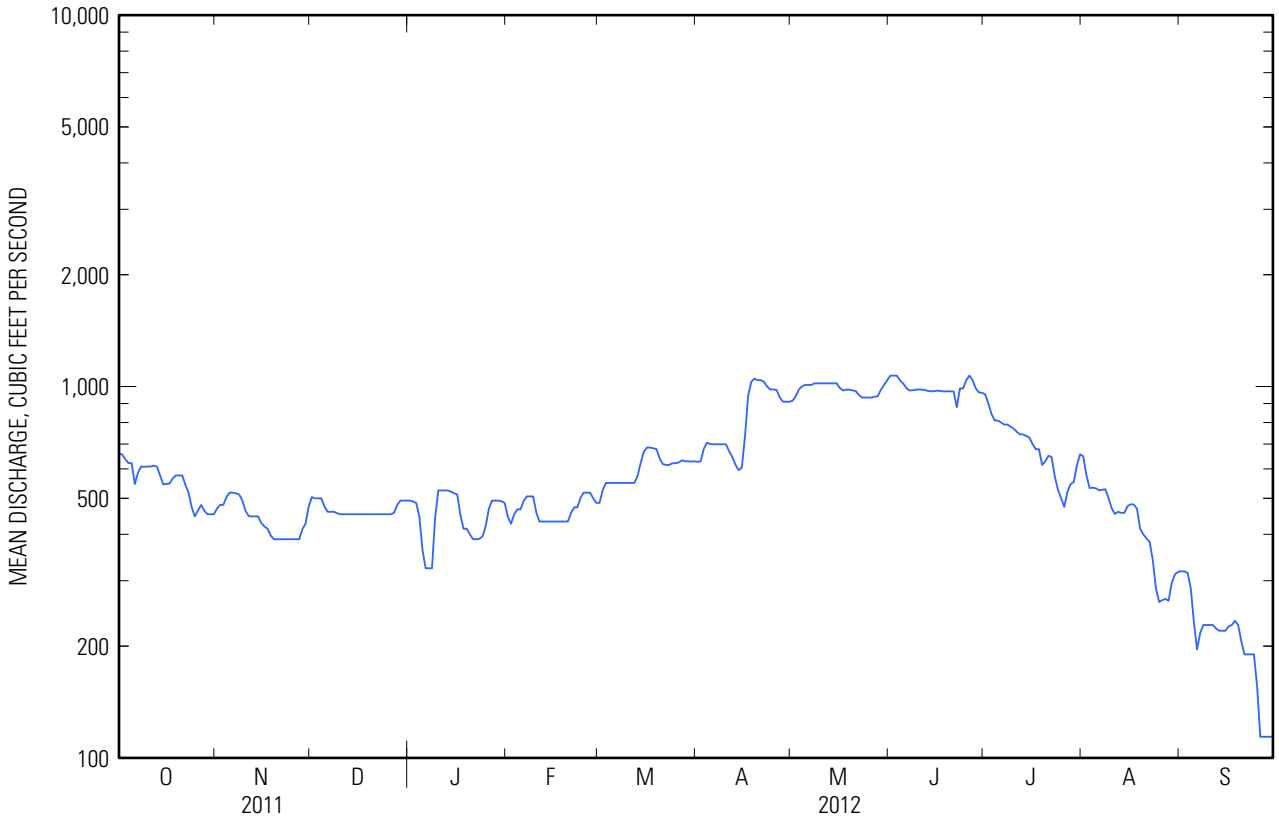
SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1931 - 2012	
Annual total	424,476		216,777			
Annual mean	1,163		592		411	
Highest annual mean					1,454	2011
Lowest annual mean					20.4	1934
Highest daily mean	1,990	May 3	[a]1,070	Jun 1	[b]2,010	May 15, 2009
Lowest daily mean	388	Nov 19	[c]114	Sep 26	[d]1.6	Feb 7, 1937
Annual seven-day minimum	388	Nov 19	131	Sep 24	5.9	Sep 15, 1934
Maximum peak flow			[b]1,080	Jun 25	[f]2,040	May 29, 2001
Maximum peak stage			[b]3.88	Jun 25	5.60	Jun 17, 1953
Instantaneous low flow			[g]114	Sep 25	[g]0.70	Aug 5, 1970
Annual runoff (ac-ft)	841,900		430,000		297,500	
Annual runoff (cfsm)	0.668		0.340		0.236	
Annual runoff (inches)	9.08		4.63		3.21	
10 percent exceeds	1,890		981		873	
50 percent exceeds	1,240		523		339	
90 percent exceeds	453		318		45	

[a] Affected by regulation, also occurred June 2-3, and 26.
[b] Affected by regulation.
[c] Due in part to regulation, also occurred Sept 27-30.
[d] Due in part to regulation.
[f] Gage height 5.46 ft.
[g] Due to regulation.