

STREAMS TRIBUTARY TO LAKE SUPERIOR

04024098 DEER CREEK NEAR HOLYOKE, MN

LOCATION.--Lat 46°31'30", long 92° 23'20", in NE¼SE¼ sec. 29, T.47 N., R.16 W., Carlton County, Hydrologic Unit 04010301, on left bank 179 ft west of State Highway No. 23, 0.9 mi upstream from mouth and 4.0 mi north of Holyoke.

DRAINAGE AREA.--7.77 mi².

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 786.14 ft above mean sea level.

REMARKS.--Records good, except those for estimated daily discharges, which are fair to poor.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
JUL	AUG	SEP							
1	3.6	5.3	1.4	e2.0	2.9	e2.8	e45	5.7	2.4
3.4	2.0	2.7							
2	2.0	4.4	1.2	e1.9	2.9	e2.7	79	4.8	2.3
4.1	2.0	2.2							
3	1.8	3.8	1.2	e1.9	2.8	2.7	99	4.1	2.2
4.8	2.1	1.9							
4	1.8	3.8	1.5	e2.2	3.1	e2.7	101	4.0	4.3
14	2.1	1.8							
5	1.8	3.8	1.5	e2.7	2.8	e2.7	97	3.7	11
5.4	2.0	2.0							
	6	1.8	8.1	1.4	e2.4	2.9	2.7	e115	3.5
5.6	4.2	1.9	2.2						
	7	1.7	12	1.4	e2.6	2.8	e2.7	e40	3.5
3.1	3.4	2.0	2.0						
	8	1.8	7.0	1.4	e2.2	e3.5	e2.7	e30	4.5
4.2	4.2	1.8	2.0						
	9	2.2	e4.0	1.4	2.0	2.6	e2.7	e22	4.0
3.0	3.9	1.8	2.3						
	10	1.7	e3.0	1.4	1.9	2.6	e2.7	e21	4.1
2.4	3.3	1.9	2.2						
	11	1.7	e1.7	1.2	e2.1	2.7	e2.7	e20	3.4
2.6	3.1	1.8	2.1						
	12	3.9	.58	1.2	e2.4	e2.9	e2.7	e23	3.2
2.2	3.2	1.8	2.1						
	13	3.6	.81	1.1	e2.1	e2.7	e2.7	e32	3.1

1.9	4.3	e1.8	2.1							
	14	2.2	1.5	.99	1.8	2.5	e2.8	e47	3.2	
1.8	4.9	e1.8	2.1							
	15	2.2	1.9	1.0	e2.0	e2.7	e2.8	61	4.6	
2.8	3.1	e1.9	2.2							
	16	2.0	56	1.2	e1.9	e2.8	e2.8	42	4.0	
2.8	3.2	e2.0	2.4							
	17	10	118	1.3	e3.3	e2.9	e2.8	33	3.3	
2.3	2.5	e2.3	2.7							
	18	5.9	e17	1.3	e3.2	e2.9	e2.9	44	4.4	
2.5	2.1	e1.9	2.1							
	19	3.5	e8.0	1.4	e3.1	e2.9	e2.9	43	10	
2.3	2.0	e1.9	2.3							
	20	2.7	e3.0	e1.6	e3.0	e2.9	e3.0	39	8.2	
2.2	1.9	e3.2	2.2							
	21	2.3	e2.0	e1.8	e3.0	e2.9	e3.2	30	6.0	
2.2	1.8	e6.0	2.0							
	22	2.2	e1.6	e1.9	e3.0	e2.9	e3.4	23	3.5	
2.6	1.9	e3.5	2.0							
	23	10	1.5	e2.0	e3.0	e2.9	e3.6	20	3.7	
2.6	1.9	e2.7	2.0							
	24	9.2	1.4	e1.8	e3.0	e2.9	e3.8	16	4.6	
4.7	1.8	e2.1	2.0							
	25	7.0	1.2	e2.1	3.0	e2.8	e4.2	13	4.6	
8.9	33	e1.9	1.9							
	26	7.4	e1.6	e2.3	3.0	e2.8	e5.5	11	4.3	
4.5	7.5	e1.9	1.9							
	27	17	e1.7	e2.0	3.0	e2.8	e10	12	2.9	
3.9	3.7	e1.9	2.0							
	28	6.3	e1.6	e2.1	3.0	e2.8	e12	11	2.7	
3.6	2.6	1.9	2.2							
	29	17	1.6	e2.0	3.0	---	e17	9.6	2.6	
3.7	2.2	1.9	2.2							
	30	36	1.6	e2.0	3.2	---	e27	8.3	2.5	
3.7	2.1	1.9	2.1							
	31	8.1	---	e1.9	3.2	---	e26	---	2.6	---
	2.1	2.0	---							
	TOTAL	180.4	279.49	47.99	80.1	79.6	170.9	1186.9	129.3	
104.3	141.6	67.7	63.9							
	MEAN	5.82	9.32	1.55	2.58	2.84	5.51	39.6	4.17	
3.48	4.57	2.18	2.13							
	MAX	36	118	2.3	3.3	3.5	27	115	10	
11	33	6.0	2.7							
	MIN	1.7	.58	.99	1.8	2.5	2.7	8.3	2.5	
1.8	1.8	1.8	1.8							
	AC-FT	358	554	95	159	158	339	2350	256	
207	281	134	127							
	CFSM	.75	1.20	.20	.33	.37	.71	5.09	.54	
.45	.59	.28	.27							
	IN.	.86	1.34	.23	.38	.38	.82	5.68	.62	
.50	.68	.32	.31							

- e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 1997, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
JUL	AUG	SEP							
MEAN	6.76	4.66	2.40	1.90	2.31	8.51	24.3	10.5	7.68
6.69	4.68	7.68							
MAX	21.8	12.2	3.86	2.92	5.87	21.5	90.8	24.3	31.4
22.3	36.9	30.4							
(WY)	1983	1983	1983	1992	1981	1995	1986	1991	1993
1991	1986	1986							
MIN	1.69	1.59	1.31	.97	1.06	2.34	4.11	2.15	1.39
1.50	.89	1.24							
(WY)	1988	1977	1977	1979	1979	1986	1977	1980	1995
1988	1982	1993							

SUMMARY STATISTICS FOR 1996 CALENDAR YEAR FOR 1997 WATER YEAR WATER YEARS 1976 - 1997

ANNUAL TOTAL	2605.78	2532.18	
ANNUAL MEAN	7.12	6.94	7.36
HIGHEST ANNUAL MEAN			
19.3	1986		
LOWEST ANNUAL MEAN			
3.65	1980		
HIGHEST DAILY MEAN	139	Apr 19	118
Sep 6 1990			Nov 17
LOWEST DAILY MEAN	.58	Nov 12	.58
Jul 2 1976			Nov 12
ANNUAL SEVEN-DAY MINIMUM	1.1	Dec 11	1.1
Aug 10 1982			Dec 11
INSTANTANEOUS PEAK FLOW			332
Sep 3 1985			Nov 16
INSTANTANEOUS PEAK STAGE			16.23
Sep 3 1985			Nov 16
INSTANTANEOUS LOW FLOW			.10
Nov 13 1996			Nov 13
ANNUAL RUNOFF (AC-FT)	5170	5020	5330
ANNUAL RUNOFF (CFSM)	.92	.89	.95
ANNUAL RUNOFF (INCHES)	12.48	12.12	12.87
10 PERCENT EXCEEDS	13	12	14
50 PERCENT EXCEEDS	2.2	2.7	2.6
90 PERCENT EXCEEDS	1.5	1.8	1.5

a From rating curve extended above 1000 ft³/s on basis of flow-thru-culvert computations.

b From floodmark.