



Elm Creek Stream Monitoring

Automatic Event Samples for Water Year 2008

(Selected parameters)

USGS Parameter #			P00095	P00340	P00400	P00530	P00608	P00613	P00625	P00631	P00665	P00666	P00940
DATE & TIME			Sp Cond mS/cm	COD mg/L	pH	TSS mg/L	Ammonia mg/L	Nitrite mg/L	Total N mg/L	Dissolved NO ₂ +NO ₃ mg/L	Total P mg/L	Dissolved P mg/L	Dissolved Chloride mg/L
5-Oct-07	5:32	to	493	40	7.5	< 20	0.044	0.04	1.3	0.6	0.28	0.23	60.4
8-Oct-07	2:33												
18-Oct-07	19:16	to	507	40	7.8	< 10	0.03	0.014	0.99	0.8	0.18	0.16	56.4
20-Oct-07	22:17												
24-Apr-08	18:10	to	611	40	7.6	19	0.029	0.007	1.1	0.25	0.13	0.08	81.6
27-Apr-08	15:04												
12-Jun-08	0:29	to	550	40	7.9	32	0.049	0.038	1.4	0.89	0.31	0.22	64.9
14-Jun-08	21:29												

USGS Parameters

- # P00010 - Temperature, water, degrees Celsius
- # P00020 - Temperature, air, degrees Celsius
- # P00025 - Barometric pressure, millimeters of mercury
- # P00061 - Discharge, instantaneous, cubic feet per second
- # P00095 - Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
- # P00300 - Dissolved oxygen, water, unfiltered, milligrams per liter
- # P00301 - Dissolved oxygen, water, unfiltered, percent of saturation
- # P00340 - Chemical oxygen demand, high level, water, unfiltered, milligrams per liter
- # P00400 - pH, water, unfiltered, field, standard units
- # P00530 - Residue, total nonfilterable, milligrams per liter
- # P00535 - Loss on ignition, from nonfilterable residue, milligrams per liter
- # P00608 - Ammonia, water, filtered, milligrams per liter as nitrogen
- # P00613 - Nitrite, water, filtered, milligrams per liter as nitrogen
- # P00625 - Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen
- # P00631 - Nitrate plus nitrite, water, filtered, milligrams per liter as nitrogen
- # P00665 - Phosphorus, water, unfiltered, milligrams per liter
- # P00666 - Phosphorus, water, filtered, milligrams per liter
- # P00940 - Chloride, water, filtered, milligrams per liter

Elm Creek Near Champlin (USGS Station 05287890)

Manual Water Quality Samples for Water Year 2008

(Selected Parameters)

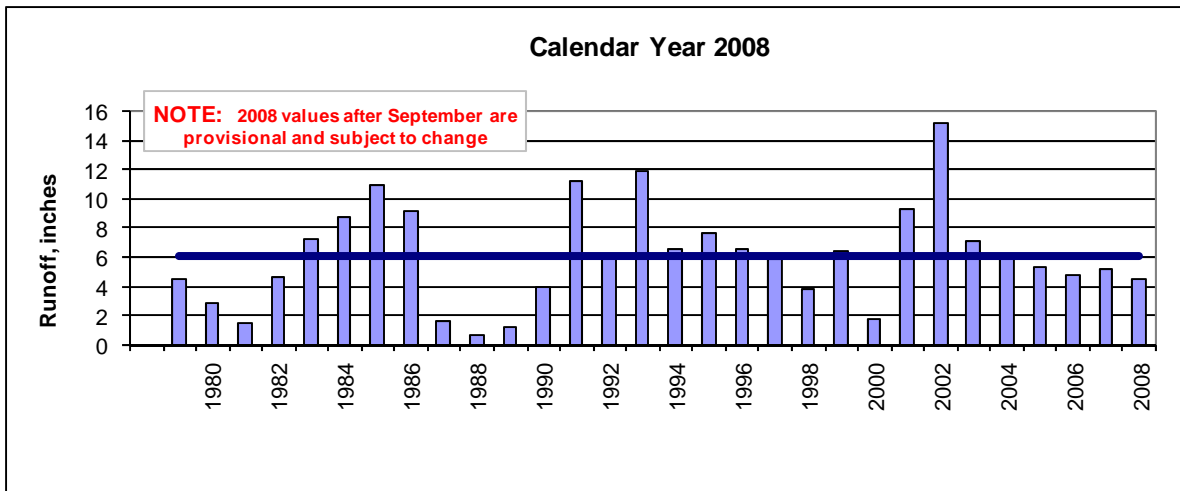
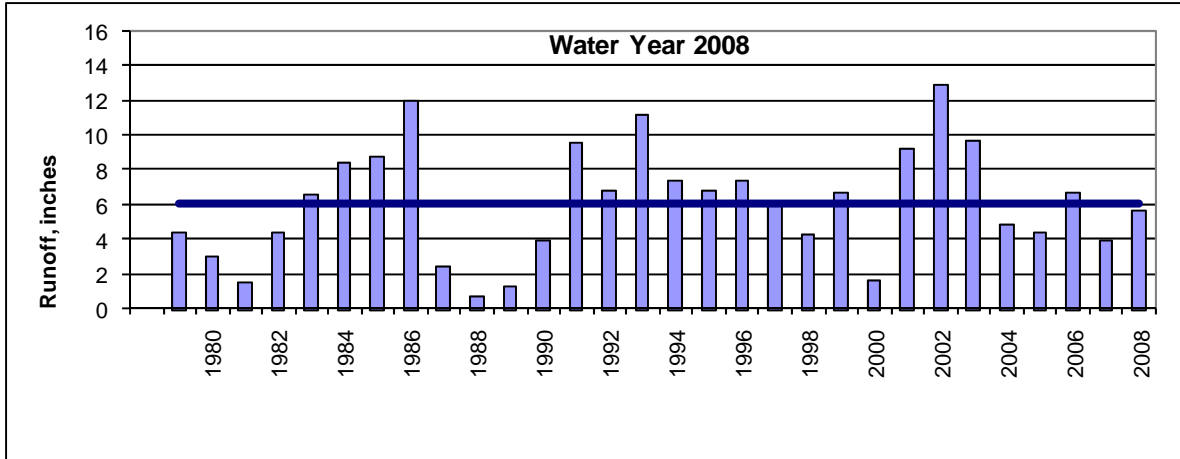
USGS Parameter #		P00010	P00020	P00025	P00061	P00095	P00300	P00301	P00340	P00400
DATE	Sample Start Time	Water Temp. °C	Air Temp. °C	Barom Press mm Hg	Disch Inst cfs	Sp cond mS/cm	DO mg/L	DO % Satur	COD mg/L	pH
15-Oct-07	9:15	10.8	10.0	741	77	521	5.5	50	40	7.1
19-Nov-07	11:30	3.7		737	10	608	10.3	78	50	7.7
11-Dec-07	10:10	0	< 0.0	746	2	725	7.8	53	30	7.4
9-Jan-08	10:40	0	< -5.0	741	3.5	742	10.1	69	30	7.6
6-Feb-08	9:15	0	1.5	738	E 2.0	718	8.4	58	10	7.4
3-Mar-08	11:20	0.3	-1.0	744	1.1	733	10.3	71	10	7.7
1-Apr-08	11:00	0.8	3.5	746	87	620	10.5	74	50	7.4
5-May-08	13:45	12.5	21.0	745	188	619	9.4	88	30	7.7
18-Jun-08	10:20	19.3	20.0	744	148	578	5.2	56	40	7.4
15-Jul-08	12:00	20.5	27.0	743	3.4	618	6.2	70	30	7.5
13-Aug-08	11:30	17.3	25.5	739	1.6	695	7.5	81	< 10	7.9
17-Sep-08	9:50	12.8	17.0	747	3.1	624	7.8	74	20	7.5

USGS Parameter #		P00530	P00535	P00608	P00613	P00625	P00631	P00665	P00666	P00940
DATE	Sample Start Time	TSS mg/L	Volatile Residue mg/L	Ammonia mg/L	Nitrite mg/L	Total Nitrogen mg/L	Dissolved NO ₂ +NO ₃ mg/L	Total P mg/L	Dissolved P mg/L	Dissolved Chloride mg/L
15-Oct-07	9:15	< 10	< 10	0.046	0.017	1.00	0.65	0.15	0.14	62.2
19-Nov-07	11:30	< 10	< 10	0.038	0.003	1.40	0.11	0.12	0.05	52.2
11-Dec-07	10:10	10	< 10							47.7
9-Jan-08	10:40	< 10	< 10	0.416	0.006	1.10	0.36	0.09	E 0.03	56.7
6-Feb-08	9:15	< 10	12	0.369	0.005	0.76	0.22	0.07	E 0.02	28.9
3-Mar-08	11:20	< 10	< 10	0.375	0.004	0.65	0.20	0.05	< 0.04	26.0
1-Apr-08	11:00	20	< 10	0.635	0.049	2.10	1.62	0.27	0.17	83.6
5-May-08	13:45	< 20	< 20	E 0.016	0.003	0.93	0.05	0.08	0.07	81.7
18-Jun-08	10:20	11	< 10	E 0.014	0.003	1.30	0.06	0.26	0.17	66.5
15-Jul-08	12:00	< 10	< 10	0.056	0.020	0.86	0.14	0.22	0.20	52.7
13-Aug-08	11:30	< 10	< 10	0.039	0.003	0.35	0.05	0.10	0.07	17.1
17-Sep-08	9:50	< 10	< 10	0.027	0.005	0.50	0.10	0.10	0.07	54.1

E = Estimated



Elm Creek Watershed Management Commission



U.S. DEPARTMENT OF THE INTERIOR - U.S. GEOLOGICAL SURVEY - WATER RESOURCES
Station No 05287890 Elm Creek Nr Champlin, MN Source Agency USGS State 27 County 053
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

<u>DAY</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
1	37	51	e5.5	e3.2	e1.2	0.84	97	162	26	21	2.3	1.1
2	37	46	e5.3	e3.2	e1.2	0.94	101	166	24	18	1.9	1.1
3	39	42	e5.1	e3.2	e1.2	1.1	105	187	21	16	1.9	1.2
4	37	39	e4.9	e3.2	e1.2	1.1	105	195	19	14	1.9	1.1
5	56	35	e4.7	e3.1	e1.2	1.1	103	192	18	12	1.7	0.97
6	85	32	e4.5	e3.1	e1.2	1.1	104	188	23	10	1.6	0.95
7	97	29	e4.4	e3.1	e1.1	1.1	114	188	25	8.9	1.4	1.1
8	112	26	e4.2	3.0	e1.1	1.0	118	180	26	7.8	1.3	1.0
9	127	23	e4.1	2.9	e1.1	1.0	116	169	24	6.7	1.3	0.88
10	129	21	e4.0	2.7	e1.0	0.97	114	158	23	6.0	1.2	0.79
11	120	19	e4.0	2.6	e1.0	1.0	127	158	24	6.5	1.1	1.0
12	109	17	e3.9	2.6	e1.0	1.1	140	153	67	e6.0	1.1	1.3
13	98	16	e3.8	2.6	e1.0	1.3	146	144	106	5.1	1.1	1.3
14	87	14	e3.8	e2.5	e1.0	e1.5	149	134	122	4.0	1.1	1.8
15	78	13	e3.7	e2.4	e0.98	e1.9	147	122	145	3.6	1.1	2.3
16	71	12	e3.6	e2.3	e0.96	e2.3	146	109	157	3.3	1.3	2.2
17	70	11	e3.6	e2.1	e0.95	e2.6	144	95	150	3.5	1.2	1.9
18	74	10	e3.5	e1.9	e0.91	e3.0	139	83	136	3.4	1.1	1.5
19	93	10	e3.5	e1.7	e0.87	e3.8	130	74	121	4.2	0.91	1.4
20	103	9.4	e3.5	e1.6	e0.85	e5.0	120	66	103	5.2	0.89	1.2
21	105	8.6	e3.4	e1.5	e0.86	e7.0	109	58	88	5.5	0.87	1.1
22	104	7.5	e3.5	e1.5	e0.87	e9.0	107	51	73	4.9	0.88	1.1
23	101	7.5	e3.5	e1.5	0.89	e12	102	45	60	3.6	0.85	1.9
24	96	7.2	e3.4	e1.5	0.91	e17	100	40	50	2.9	0.81	e2.6
25	91	6.9	e3.4	e1.5	0.90	e24	117	37	42	3.5	0.79	e2.5
26	85	6.7	e3.4	e1.5	0.86	e28	142	39	37	4.5	0.71	e2.5
27	78	6.5	e3.3	e1.5	0.83	e37	159	36	33	4.4	0.80	e2.5
28	72	e6.2	e3.3	e1.6	0.83	e48	163	32	31	3.5	2.1	e2.5
29	66	e6.0	e3.3	e1.5	0.82	e60	166	29	27	3.1	3.1	e2.4
30	61	e5.8	e3.2	e1.4	---	88	169	28	24	2.6	2.4	e2.4
31	56	---	e3.2	e1.3	---	97	---	27	---	2.5	1.7	---
Statistics for Water Year October 2007 to September 2008												
Total	2,574	544.3	120.5	69.3	28.79	460.75	3,799	3,345	1,825	206.2	42.41	47.59
Mean	83.0	18.1	3.89	2.24	0.99	14.9	127	108	60.8	6.65	1.37	1.59
Max	129	51	5.5	3.2	1.2	97	169	195	157	21	3.1	2.6
Min	37	5.8	3.2	1.3	0.82	0.84	97	27	18	2.5	0.71	0.79
Ac-ft	5,110	1,080	239	137	57	914	7,540	6,630	3,620	409	84	94
Cfsm	0.97	0.21	0.05	0.03	0.01	0.17	1.47	1.25	0.71	0.08	0.02	0.02
Inches	1.11	0.24	0.05	0.03	0.01	0.20	1.64	1.45	0.79	0.09	0.02	0.02



Elm Creek Watershed Management Commission

Statistics of monthly mean data for 1979 - 2008, by Water Year (WY)												
Mean	34.4	21.6	10.6	5.43	8.76	59.5	105	72.3	52.1	38.1	27.9	27.1
Max	240	67.4	41.3	22.0	99.1	185	414	203	196	157	151	170
(WY)	(1986)	(1994)	(1992)	(1992)	(1984)	(1985)	(2001)	(2002)	(2004)	(1993)	(2002)	(1991)
Min	1.13	1.03	0.92	0.74	0.91	3.86	5.31	3.54	1.34	0.76	1.37	1.08
(WY)	(1990)	(1990)	(1990)	(1991)	(1990)	(2001)	(1987)	(2000)	(1988)	(1988)	(2008)	(1988)

Summary Statistics	Calendar Year 2007		Water Year 2008		Water Years 1979 – 2008	
Annual total	12,037.46		13,062.84			
Annual mean	33.0		35.7		38.7	
Highest annual mean					82.2	2002
Lowest annual mean					4.54	1988
Highest daily mean	214	Apr 4	195	May 4	815	Apr 25, 2001
Lowest daily mean	0.33	Aug 7	0.71	Aug 26	0.31	Jun 30, 1988
Annual seven-day minimum	0.35	Aug 4	0.82	Aug 21	0.35	Jun 26, 1988
Maximum peak flow			205	May 4	875	Apr 25, 2001
Maximum peak stage			7.44	May 4	10.02	Apr 25, 2001
Instantaneous low flow			0.65	Aug 26	0.29	Jul 9, 1989
Annual runoff (ac-ft)	23,880		25,910		28,010	
Annual runoff (cfsm)	0.383		0.415		0.450	
Annual runoff (inches)	5.21		5.65		6.11	
10 percent exceeds	105		121		109	
50 percent exceeds	5.5		4.9		11	
90 percent exceeds	1.3		1.0		1.7	