

Data for Selected Gaging Stations in the Upper Red River of the North Basin in Minnesota, September 2001 through September 2003

Open-File Report 2005-1150

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By William C. Damschen and Rochelle A. Nustad

In cooperation with the Minnesota Pollution Control Agency

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Data for Selected Gaging Stations in the Upper Red River of the North Basin in Minnesota, September 2001 through September 2003

By William C. Damschen and Rochelle A. Nustad

Abstract

Surface-water and water-quality data were collected to use in development of upper Red River of the North Basin Total Maximum Daily Loads (TMDLs). This report presents the data that were collected.

During September 2001 through September 2003, data were collected at 13 selected gaging stations in the upper Red River of the North Basin. Continuous streamflow data were collected at three of the gaging stations. Water-quality samples were collected at all 13 gaging stations; and, simultaneous with sample collection, in-stream specific conductance, pH, water temperature, dissolved oxygen, and turbidity were measured. Samples were analyzed for selected nutrients, selected bacteria, chlorophyll *a*, and suspended sediment.

Continuous in-stream water-quality monitors were installed at two gaging stations to measure specific conductance, pH, water temperature, dissolved oxygen, and turbidity.

Introduction

Water-quality standards and the associated Total Maximum Daily Load (TMDL) program were established by the Clean Water Act, section 303(d). A TMDL is “a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources” (Environmental Protection Agency, 2004). Water bodies that exceed a given water-quality standard are listed as impaired and the Environmental Protection Agency requires that the state complete a TMDL for impaired water bodies. Several tributaries in the upper Red River of the North Basin are listed as impaired on the 303(d) TMDL list (Minnesota Pollution Control Agency, 2004). Some of the impaired reaches of the upper Red River of the North Basin are the Mustinka River for

turbidity impairment from the Grant and Traverse County line to Fivemile Creek and from Unnamed Creek to Lake Traverse; the Rabbit River for biota, ammonia, and turbidity impairment from the Wilkin County line to the Bois de Sioux River; the Otter Tail River for fecal coliform and turbidity impairment from Breckenridge Lake to the Bois de Sioux River and for biota and turbidity impairment from Judicial Ditch No. 2 to Breckenridge Lake; and Whiskey Creek for turbidity impairment from the headwaters to the Red River of the North. Additional information is needed in order to complete a TMDL for these impaired water bodies.

In 2001, the U. S. Geological Survey, in cooperation with the Minnesota Pollution Control Agency began to collect data needed to develop several TMDLs. This report presents the surface-water and water-quality data that were collected to use in the development of the upper Red River of the North Basin TMDLs.

Data Collection

During September 2001 through September 2003, a combination of surface-water and water-quality data were collected at 13 selected gaging stations in the upper Red River of the North Basin (fig. 1; table 1). Instantaneous streamflow was measured coincident with water-quality sample collection at all gaging stations except for the Otter Tail River below Orwell Dam near Fergus Falls, Minn., gaging station (05046000) and the Mustinka River above Wheaton, Minn., gaging station (05049000). Continuous streamflow data were collected at the Otter Tail River below Fergus Falls, Minn., gaging station (05045900); at the Otter Tail River at 11th Street in Breckenridge, Minn., gaging station (05046502); and at the Whiskey Creek at Kent, Minn., gaging station (05051521).

2 Data for Selected Gaging Stations in the Upper Red River of the North Basin in Minnesota

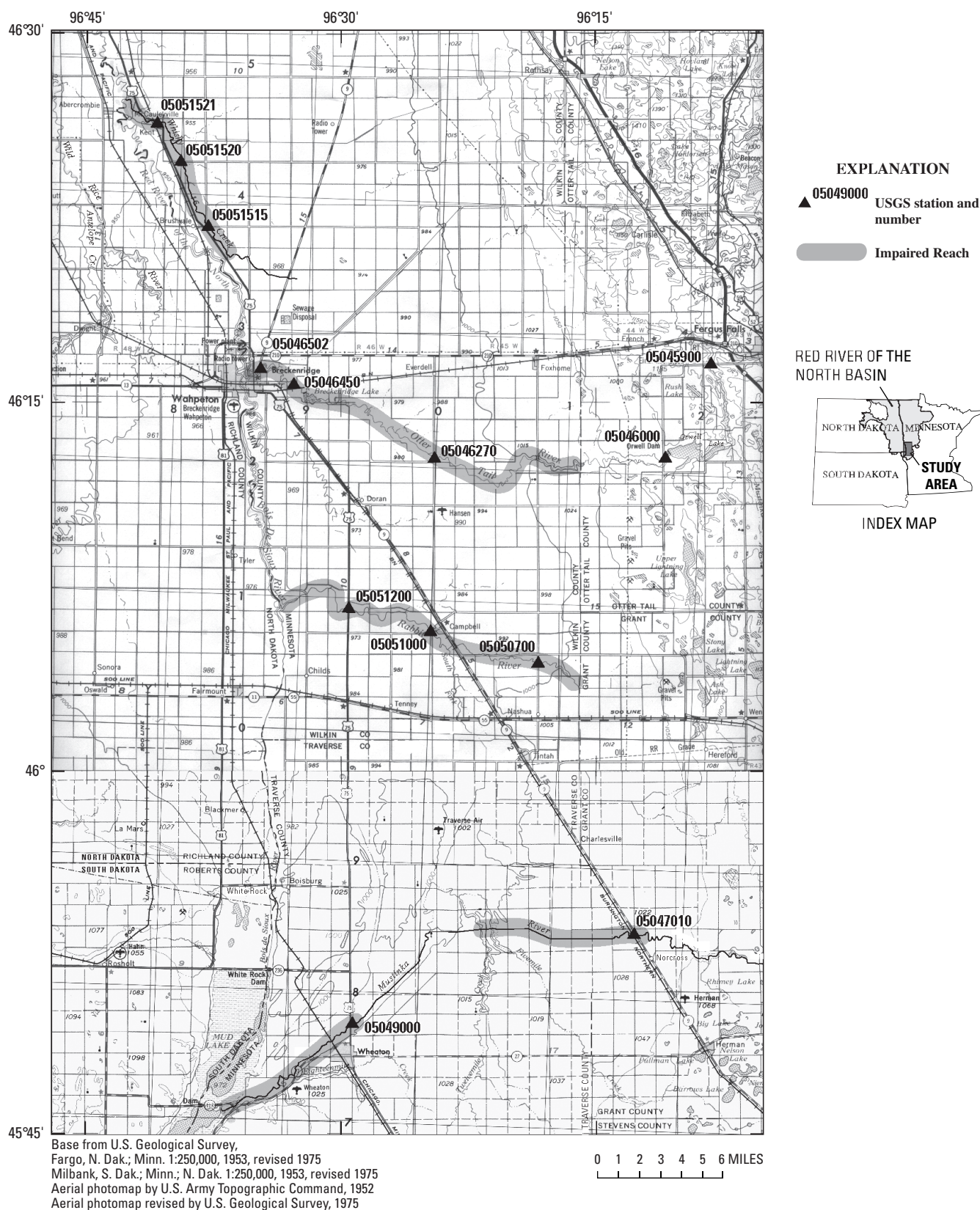


Figure 1. Location of sampling sites and 2004 impaired reaches in the upper Red River of the North Basin, Minnesota.

Table 1. Selected gaging stations in the upper Red River of the North Basin, Minnesota.

Gaging station number	Gaging station name	Type of data collected
05045900	Otter Tail River below Fergus Falls, MN	Surface water and water quality
05046000	Otter Tail River below Orwell Dam near Fergus Falls, MN	Water quality
05046270	Otter Tail River near Everdell, MN	Water quality
05046450	Otter Tail River above Breckenridge, MN	Water quality
05046502	Otter Tail River at 11 th Street in Breckenridge, MN	Surface water and water quality
05047010	Mustinka River below Norcross, MN	Water quality
05049000	Mustinka River above Wheaton, MN	Water quality
05050700	Rabbit River near Nashua, MN	Water quality
05051000	Rabbit River at Campbell, MN	Water quality
05051200	Rabbit River near Campbell, MN	Water quality
05051515	Whiskey Creek below Brushvale, MN	Water quality
05051520	Whiskey Creek near Kent, MN	Water quality
05051521	Whiskey Creek at Kent, MN	Surface water and water quality

Water-quality samples were collected at all 13 gaging stations; and, simultaneous with sample collection, in-stream specific conductance, pH, water temperature, dissolved oxygen, and turbidity were measured. Water-quality samples were collected once a month during October through May and twice a month during June through September. Samples were not collected when streamflow was estimated to be less than 0.01 cubic foot per second. Samples were collected according to U.S. Geological Survey protocols (U.S. Geological Survey, variously dated). Samples were analyzed for selected nutrients, selected bacteria, chlorophyll *a*, and suspended sediment by several different sources (table 2). Supplementary bacteria samples were collected and analyzed according to U.S. Geological Survey protocols by Wilkin County Soil and Water Conservation District personnel.

Continuous in-stream water-quality monitors were installed on December 12, 2001, at the Mustinka River above Wheaton, Minn., gaging station (05049000) and on April 15, 2002, at the Whiskey Creek at Kent, Minn., gaging station (05051521). The monitors measured specific conductance, pH, water temperature, dissolved oxygen, and turbidity. Both monitors were removed in September 2003.

The surface-water and water-quality data that were collected to use in the development of the upper Red River of the North Basin TMDLs are presented in the supplemental table of this report.

Acknowledgements

The collection and analysis of supplementary bacteria data during summer months was made possible through the cooperation of Don Bajumpaa and other staff personnel at the Wilkin County Soil and Water Conservation District.

References

- Minnesota Pollution Control Agency, 2004, Red River of the North Basin, 2004–Impaired Waters List: accessed October 28, 2004, at URL <http://www.pca.state.mn.us/publications/maps/tmdl-rr-conv-04.pdf>
- Environmental Protection Agency, 2004, Introduction to TMDLs: accessed October 28, 2004, at URL <http://www.epa.gov/owow/tmdl/intro.html>
- U.S. Geological Survey, variously dated, National field manual for the collection of water-quality data: U.S. Geological Survey Techniques of Water-Resources Investigations, book 9, chaps. A1-A9, various pagination.

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Table 2. Constituents for which samples were analyzed and analysis source.

[USGS, U.S. Geological Survey; SWCD, Soil and Water Conservation District]

Parameter code	Constituent	Analysis source
00608	Nitrogen, ammonia, dissolved (milligrams per liter as N)	Minnesota Department of Health
00610	Nitrogen, ammonia, total (milligrams per liter as N)	Minnesota Department of Health
00613	Nitrogen, nitrite, dissolved (milligrams per liter as N)	Minnesota Department of Health
00625	Nitrogen, ammonia plus organic, total (milligrams per liter as N)	Minnesota Department of Health
00631	Nitrogen, nitrite plus nitrate, dissolved (milligrams per liter as N)	Minnesota Department of Health
00665	Phosphorus, total (milligrams per liter as P)	Minnesota Department of Health
00671	Phosphorus, orthophosphate, dissolved (milligrams per liter as P)	Minnesota Department of Health
31625	Fecal coliform, 0.7 micrometer-membrane filter (colonies per 100 milliliters)	USGS and Wilkin County SWCD
31633	Escherichia coli, m-TEC MF method (colonies per 100 milliliters)	USGS and Wilkin County SWCD
31673	Streptococci, fecal, membrane filter (colonies per 100 milliliters)	USGS and Wilkin County SWCD
32211	Chlorophyll <i>a</i> , phytoplankton, spectrophotometric acid method (micrograms per liter)	Minnesota Department of Health
70331	Sediment, suspended, sieve diameter (percent finer than 0.062 millimeter)	USGS Iowa Sediment Laboratory
80154	Sediment, suspended concentration (milligrams per liter)	USGS Iowa Sediment Laboratory

Supplement 1. Surface-water and water-quality data collected at selected gaging stations in the upper Red River of the North Basin in Minnesota, September 2001 through September 2003.

Abbreviations and symbols

mi², square mile

ft, foot

ft³/s, cubic foot per second

AC-FT, acre foot

cfs, cubic foot per second

NTU, nephelometric turbidity unit

mg/L, milligrams per liter

μS/cm, microsiemens per centimeter

deg C, degree Celsius

μg/L, micrograms per liter

mm, millimeter

--, no data

LOCATION.--Lat 46°16'32", long 96°08'03" in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 6, T. 132 N., R. 43 W., Otter Tail County, Hydrologic Unit 09020103, 1 mile south and 2.5 miles east of Fergus Falls.

DRAINAGE AREA.--1,690 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 2001 through January 2003.

GAGE.--Water stage recorder. Datum of gage is 1,100.00 ft above National Geodetic Vertical Datum of 1929. (From Topographic map).

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum recorded daily discharge, 1,390 ft³/s, July 10, 2002; minimum recorded daily discharge, 173 ft³/s, December 4, 2002.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2000 THROUGH SEPTEMBER 2001
DAILY MEAN VALUES

[illegible]

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	349	433	464	505	434	416	532	728	792	445	615	718
2	350	408	512	526	482	400	530	726	798	480	619	637
3	342	442	539	528	535	384	530	734	756	529	649	659
4	343	442	464	508	518	380	525	699	736	567	656	645
5	339	420	484	520	440	415	523	702	696	537	651	674
6	288	429	476	535	465	448	532	706	690	568	645	644
7	325	416	485	547	485	466	558	718	664	618	639	636
8	304	446	474	502	511	463	596	847	661	902	622	611
9	292	426	509	521	532	430	598	889	622	771	575	585
10	479	408	510	547	506	410	656	930	586	1,390	563	633
11	501	408	513	582	517	381	730	943	596	927	626	564
12	438	397	539	554	501	453	686	925	573	716	610	541
13	440	412	525	564	487	547	665	916	534	668	513	542
14	406	420	530	596	489	597	680	902	554	626	567	540
15	410	404	556	553	506	562	694	898	529	578	595	540
16	403	431	568	542	508	544	707	877	491	602	604	536
17	341	413	561	548	506	550	734	882	472	606	543	516
18	276	431	594	454	508	530	763	849	434	637	511	481
19	549	399	489	443	529	513	748	863	454	634	473	505
20	377	394	451	459	495	522	699	840	444	666	521	472
21	361	409	494	475	493	422	668	835	460	729	602	391
22	377	385	491	499	500	424	708	836	462	723	529	387
23	375	393	492	537	494	440	689	828	516	737	507	393
24	390	416	415	515	498	527	685	875	523	732	483	388
25	407	432	385	468	406	509	682	850	485	748	522	397
26	400	442	397	493	371	534	678	699	474	637	470	419
27	384	379	475	518	366	537	683	781	481	744	609	397
28	400	385	517	538	458	602	780	789	495	742	621	417
29	382	411	531	431	---	620	787	833	474	693	701	388
30	416	387	533	361	---	546	745	846	470	641	618	390
31	421	---	535	354	---	549	---	794	---	684	593	---
TOTAL	11,865	12,418	15,508	15,723	13,540	15,121	19,791	25,540	16,922	21,277	18,052	15,646
MEAN	383	414	500	507	484	488	660	824	564	686	582	522
MAX	549	446	594	596	535	620	787	943	798	1,390	701	718
MIN	276	379	385	354	366	380	523	699	434	445	470	387
AC-FT	23,530	24,630	30,760	31,190	26,860	29,990	39,260	50,660	33,560	42,200	35,810	31,030

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	354	341	340	287	---	---	---	---	---	---	---	---
2	336	369	294	322	---	---	---	---	---	---	---	---
3	338	380	219	339	---	---	---	---	---	---	---	---
4	353	382	173	297	---	---	---	---	---	---	---	---
5	279	389	221	289	---	---	---	---	---	---	---	---
6	360	403	291	308	---	---	---	---	---	---	---	---
7	399	370	300	310	---	---	---	---	---	---	---	---
8	347	373	217	291	---	---	---	---	---	---	---	---
9	424	359	341	309	---	---	---	---	---	---	---	---
10	417	354	333	283	---	---	---	---	---	---	---	---
11	414	350	338	208	---	---	---	---	---	---	---	---
12	436	339	342	184	---	---	---	---	---	---	---	---
13	465	331	342	191	---	---	---	---	---	---	---	---
14	446	317	338	226	---	---	---	---	---	---	---	---
15	373	355	338	205	---	---	---	---	---	---	---	---
16	343	372	330	243	---	---	---	---	---	---	---	---
17	331	416	334	235	---	---	---	---	---	---	---	---
18	356	452	320	212	---	---	---	---	---	---	---	---
19	372	434	289	219	---	---	---	---	---	---	---	---
20	367	372	308	215	---	---	---	---	---	---	---	---
21	385	370	333	216	---	---	---	---	---	---	---	---
22	386	345	326	230	---	---	---	---	---	---	---	---
23	381	348	335	252	---	---	---	---	---	---	---	---
24	359	295	279	260	---	---	---	---	---	---	---	---
25	356	294	269	252	---	---	---	---	---	---	---	---
26	337	294	282	273	---	---	---	---	---	---	---	---
27	321	296	291	274	---	---	---	---	---	---	---	---
28	338	337	310	259	---	---	---	---	---	---	---	---
29	358	394	356	248	---	---	---	---	---	---	---	---
30	353	369	347	219	---	---	---	---	---	---	---	---
31	352	---	291	209	---	---	---	---	---	---	---	---
TOTAL	11,436	10,800	9,427	7,865	---	---	---	---	---	---	---	---
MEAN	369	360	304	254	---	---	---	---	---	---	---	---
MAX	465	452	356	339	---	---	---	---	---	---	---	---
MIN	279	294	173	184	---	---	---	---	---	---	---	---
AC-FT	22,680	21,420	18,700	15,600	---	---	---	---	---	---	---	---

WATER-QUALITY RECORDS

PERIOD OF RECORD.--September 2001 through January 2003.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 THROUGH SEPTEMBER 2001

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
SEP 2001													
12...	1400	527	0.0	10.3	8.4	400	20.9	22.1	0.68	<0.050	<0.050	0.080	<0.010
26...	1110	417	11	9.9	8.3	392	17.8	16.4	0.69	<0.050	<0.050	0.060	<0.010

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coli-form, M-FC 0.7u MF col/100 mL (31625)	Fecal streptococci KF MF, col/100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)	Suspended sedi-ment concentration mg/L (80154)
SEP 2001								
12...	0.008	0.043	110	E280	66	3.05	91	8
26...	0.013	0.041	260	320	72	3.63	86	6

Remark codes used in this table:

< -- Less than

E -- Estimated value

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 deg C (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
OCT 2001													
11...	0945	264	5.0	9.2	7.9	425	10.0	12.1	0.76	<0.040	--	0.090	E.006
NOV 08...	1045	348	1.0	11.5	8.1	456	2.2	7.7	0.74	<0.050	<0.050	0.070	<0.010
DEC 13...	1040	507	0.0	13.2	8.0	445	-4.2	1.8	0.69	<0.050	0.750	0.110	<0.010
JAN 2002													
17...	1045	E545	4.0	13.5	8.0	471	-8.0	1.6	0.70	0.100	0.100	0.110	<0.010
FEB 14...	1030	441	1.0	13.1	7.9	475	3.9	1.5	0.85	0.140	0.140	0.100	<0.010
MAR 18...	1715	E551	0.4	13.1	8.1	457	-5.0	3.1	0.77	0.120	0.110	0.070	<0.010
APR 17...	1610	738	33	11.0	8.0	409	19.4	15.2	0.91	0.060	0.080	0.090	0.020
MAY 16...	0905	874	20	11.8	8.3	412	6.0	13.6	0.86	<0.050	<0.050	<0.050	<0.010
JUN 03...	1645	700	14	9.1	8.2	409	18.0	18.0	0.80	<0.050	<0.050	0.080	<0.010
26...	1630	484	12	7.8	8.2	395	30.3	29.0	0.86	<0.050	0.050	0.160	<0.010
JUL 11...	1350	857	26	7.2	8.0	362	24.0	21.3	0.95	0.060	0.090	0.220	0.010
22...	1720	693	7.0	7.9	8.1	373	21.0	26.5	0.83	<0.050	<0.050	0.100	<0.010
AUG 05...	1615	656	5.0	10.0	8.3	364	27.3	26.0	0.88	<0.050	<0.050	0.070	<0.010
19...	1615	463	0.0	10.4	8.2	383	28.3	23.3	0.58	<0.050	<0.050	0.050	<0.010
SEP 12...	0915	622	7.0	7.4	8.1	375	18.8	23.2	0.66	<0.050	<0.050	0.080	<0.010
25...	1405	399	0.0	10.7	8.4	401	11.0	16.0	0.58	<0.050	<0.050	0.050	<0.010

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coliform, M-FC col/100 mL (31625)	Fecal streptococci KF MF, col/100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
OCT 2001								
11...	E.02	0.07	E1,400	1,900	2,200	5.20	94	17
NOV 08...	0.014	0.048	84	98	220	11.4	89	5
DEC 13...	0.020	0.047	--	--	--	5.02	78	4
JAN 2002								
17...	0.015	0.041	--	--	--	3.49	65	7
FEB 14...	0.023	0.052	--	--	--	3.36	67	7
MAR 18...	0.017	0.047	--	--	--	5.00	76	6
APR 17...	0.007	0.073	E8k	E58k	20	13.8	84	24
MAY 16...	0.008	0.061	7k	21	55	8.97	80	21
JUN 03...	0.012	0.070	120k	60k	13k	6.59	88	21
26...	0.034	0.089	140k	85k	79	3.94	91	27
JUL 11...	0.043	0.113	460	500	2,100	3.31	87	37
22...	0.029	0.088	200k	--	21	4.71	92	20
AUG 05...	0.017	0.058	12k	6k	45	4.63	92	7
19...	0.012	0.042	18k	58	39	4.84	93	6
SEP 12...	0.024	0.069	140	43k	120	4.49	93	17
25...	0.028	0.058	120	180	69	3.94	89	6

Remark codes used in this table:

< -- Less than

E -- Estimated value

Value qualifier codes used in this table:

k -- Counts outside acceptable range

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, water unfiltered, uS/cm 25 deg C (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, filtered, mg/L as N (00608)	Ammonia water, unfiltered, mg/L as N (00610)	Nitrite + nitrate water, filtered, mg/L as N (00631)	Nitrite water, filtered, mg/L as N (00613)
OCT 2002													
07...	1600	402	3.0	12.4	8.2	432	12.5	13.0	0.64	<0.050	<0.050	0.110	<0.010
NOV													
04...	1630	406	6.0	14.2	8.1	447	2.8	4.3	0.63	<0.050	<0.050	0.120	<0.010
DEC													
09...	1720	429	6.0	12.9	8.1	442	2.0	2.9	0.80	0.080	0.080	0.130	<0.010
JAN 2003													
13...	1640	E191	16	14.1	7.8	484	-17.0	1.2	--	0.050	0.050	0.250	<0.010

Date	Orthophosphate, water, filtered, mg/L as P (00671)	Phosphorus, water, unfiltered, mg/L (00665)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coliform, M-FC 0.7u MF col/100 mL (31625)	Fecal streptococci KF MF, col/100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspended sediment, sieve diameter percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
OCT 2002								
07...	0.060	0.103	180	200	34	3.99	100	7
NOV								
04...	0.029	0.064	12k	44	16k	10.0	95	4
DEC								
09...	0.030	0.063	--	--	--	8.43	78	8
JAN 2003								
13...	0.015	0.057	--	--	--	5.77	83	21

Remark codes used in this table:

< -- Less than

E -- Estimated value

Value qualifier codes used in this table:

k -- Counts outside acceptable range

LOCATION.--Lat 46°12'35", long 96°11'05", in NE¼ sec. 34, T.132 N., R.44 W., Otter Tail County, Hydrologic Unit 09020103, on left bank 0.7 mile downstream from Orwell Dam on County Highway 15, 6.1 miles downstream from Dayton Hollow Dam, 8 miles southwest of Fergus Falls, and 11.1 miles downstream from Pelican River.

DRAINAGE AREA.--1,740 mi².

WATER-QUALITY RECORDS

PERIOD OF RECORD.--September 2001 through June 2003.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 THROUGH SEPTEMBER 2001

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 deg C (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
SEP 2001													
12...	1110	489	20	9.9	8.6	398	19.4	20.0	0.82	<0.050	<0.050	<0.050	<0.010
26...	0900	370	6.0	10.5	8.5	409	10.8	15.3	0.81	0.050	<0.050	<0.050	<0.010
			Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, M-FC MF, col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)			
SEP 2001													
12...			<0.005	0.059	E4k	E10k	E5k	21.0	92	10			
26...			<0.005	0.045	E5k	E10k	E2k	13.8	89	7			

Remark codes used in this table:

< -- Less than

E -- Estimated value

Value qualifier codes used in this table:

k -- Counts outside acceptable range

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 deg C (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
OCT 2001													
10...	1500	370	1.0	10.9	8.3	423	10.0	11.8	0.69	<0.040	--	<0.050	<0.008
NOV 08...	0815	340	6.0	12.5	8.2	472	0.5	6.7	0.75	<0.050	<0.050	<0.050	<0.010
DEC 13...	0900	489	0.0	14.5	8.0	500	-5.1	1.6	0.69	<0.050	<0.050	0.130	<0.010
JAN 2002													
17...	0920	518	0.0	14.0	8.0	479	-8.6	1.4	0.67	0.080	0.080	0.130	<0.010
FEB 14...	0900	488	0.0	10.6	7.8	474	1.5	2.0	0.74	0.090	0.110	0.130	<0.010
MAR 18...	1520	511	0.0	14.5	8.1	473	-4.5	2.2	0.84	0.130	0.130	0.100	<0.010
APR 15...	1715	663	3.0	12.4	8.0	422	24.5	8.8	0.71	<0.050	<0.050	0.050	<0.010
MAY 15...	1630	813	17	13.4	8.2	426	23.5	12.1	0.73	<0.050	<0.050	<0.050	<0.010
JUN 05...	1615	654	3.0	9.6	8.3	418	27.0	19.3	0.72	<0.050	<0.050	<0.050	<0.010
25...	1345	568	6.0	8.7	8.3	410	37.5	24.0	0.96	0.100	0.120	0.060	<0.010
JUL 11...	0900	1,070	7.0	8.3	8.4	386	--	24.2	0.88	0.140	0.140	0.070	<0.010
24...	1530	635	21	8.0	8.1	395	20.7	24.8	0.98	0.130	0.130	<0.050	<0.010
AUG 07...	1530	565	8.0	9.1	8.3	396	26.0	23.0	0.80	<0.050	<0.050	<0.050	<0.010
21...	1300	668	6.0	9.0	8.3	393	23.4	21.0	0.65	<0.050	<0.050	<0.050	<0.010
SEP 11...	1600	614	12	9.0	8.3	392	27.3	23.0	0.66	<0.050	<0.050	<0.050	<0.010
23...	1530	418	2.0	10.0	8.4	406	15.0	16.6	0.65	<0.050	<0.050	<0.050	0.010

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, M-FC col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diameter percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
OCT 2001								
10...	<0.02	<0.06	E46k	E15k	E25k	6.43	86	5
NOV 08...	<0.005	0.037	E26k	E18k	52	16.6	94	5
DEC 13...	0.007	0.041	--	--	--	10.3	96	2
JAN 2002								
17...	0.014	0.033	--	--	--	2.90	100	1
FEB 14...	0.006	0.033	--	--	--	4.97	94	3
MAR 18...	0.009	0.037	--	--	--	5.66	93	2
APR 15...	<0.005	0.039	<2	<2	E17k	9.95	99	4
MAY 15...	<0.005	0.047	E40k	E12k	E4k	9.68	99	9
JUN 05...	0.007	0.029	<1	E2k	E1k	8.36	98	6
25...	0.027	0.081	E79k	E35k	67	11.6	97	9
JUL 11...	0.061	0.106	E17k	<7	405	5.71	98	14
24...	0.047	0.102	<1	E2k	E3k	10.5	99	22
AUG 07...	0.032	0.091	<1	E4k	24	17.2	99	13
21...	0.016	0.064	E1k	E5k	E14k	11.0	97	8
SEP 11...	0.015	0.064	1k	1k	E14k	14.2	100	5
23...	0.012	0.068	<2	E6k	E18k	14.1	94	9

Remark codes used in this table:

< -- Less than

E -- Estimated value

Value qualifier codes used in this table:

k -- Counts outside acceptable range

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 deg C (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
OCT 2002													
09...	1100	370	0.0	11.5	8.3	410	9.9	10.7	0.66	<0.050	<0.050	<0.050	<0.010
NOV 05...	1430	340	7.0	14.3	8.2	457	1.7	1.9	0.69	<0.050	<0.050	<0.050	<0.010
DEC 11...	0945	360	0.0	14.7	8.1	467	0.0	1.5	0.88	0.070	0.070	0.140	<0.010
JAN 2003													
15...	1615	311	1.0	15.7	7.9	478	-15.0	1.5	0.69	<0.050	<0.050	0.190	<0.010
FEB 10...	1735	340	0.0	14.8	7.9	496	-18.1	1.1	0.78	<0.050	<0.050	0.130	<0.010
MAR 24...	1630	446	--	14.3	7.8	463	13.1	6.0	1.0	0.140	0.140	0.150	<0.010
APR 14...	1650	384	21	12.1	8.3	425	31.4	10.6	--	<0.050	<0.050	<0.050	<0.050
MAY 19...	1730	770	35	10.2	8.3	418	16.0	15.8	0.93	<0.050	<0.050	<0.050	<0.010
JUN 02...	1700	623	6.1	9.1	8.4	419	22.0	19.0	0.85	<0.050	<0.050	0.380	<0.010
16...	1700	556	16	8.6	8.4	409	27.3	22.9	0.78	<0.050	<0.050	<0.050	<0.010

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coliform, M-FC 0.7u MF col/100 mL (31625)	Fecal streptococci KF MF, col/100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diameter percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
OCT 2002								
09...	0.005	0.037	<1	<4	1k	7.47	99	4
NOV 05...	<0.005	0.034	13k	11k	5k	9.92	100	2
DEC 11...	0.009	0.042	--	--	--	12.6	100	1
JAN 2003								
15...	0.009	0.038	--	--	--	3.39	100	2
FEB 10...	<0.005	0.037	--	--	--	12.1	95	2
MAR 24...	0.019	0.068	--	--	--	8.70	100	2
APR 14...	<0.005	0.042	E1k	<1	<1	12.9	97	5
MAY 19...	<0.005	0.071	<4	<1	4k	12.6	99	16
JUN 02...	0.006	0.044	E2k	E1k	E1k	9.04	98	9
16...	0.009	0.067	100k	28	68	9.04	96	6

Remark codes used in this table:

< -- Less than

E -- Estimated value

Value qualifier codes used in this table:

k -- Counts outside acceptable range

LOCATION.--Lat 46°13'00", long 96°24'31", NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 25, T. 132 N, R. 46 W., Wilkin County, Hydrologic Unit 09020103, 3.5 miles south of Everdell on Wilkin County Highway 17.

DRAINAGE AREA.--1,772 mi².

WATER-QUALITY RECORDS

PERIOD OF RECORD.--September 2001 through June 2003.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 THROUGH SEPTEMBER 2001

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 deg C (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
SEP 2001													
11...	1400	--	--	--	--	--	--	--	--	--	--	--	--
12...	0910	490	22	8.0	8.4	416	16.5	18.0	0.87	<0.050	<0.050	<0.050	<0.010
17...	1000	--	--	--	--	--	--	--	--	--	--	--	--
23...	0945	--	--	--	--	--	--	--	--	--	--	--	--
25...	1450	532	10	10.8	8.5	419	18.0	14.7	0.75	<0.050	<0.050	<0.050	<0.010

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, col/100 mL (31633)	Fecal coliform, M-FC col/100 mL (31625)	Fecal streptococci KF, col/100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
SEP 2001								
11...	--	--	*29k	*33k	*104	--	--	--
12...	<0.005	0.107	110	140	84	26.2	15	--
17...	--	--	*200k	*130	*84	--	--	--
23...	--	--	*78	*86	*46	--	--	--
25...	<0.005	0.049	31k	18k	4k	9.84	89	22

Remark codes used in this table:

< -- Less than

Value qualifier codes used in this table:

* -- Collected and analyzed by Wilkin County Soil and Water Conservation District

k -- Counts outside acceptable range

[illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002—Continued

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, M-FC 0.7u MF col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
OCT 2001								
02...	--	--	*54k	*46k	*160	--	--	--
10...	--	--	*300	*210	*>10,000	--	--	--
15...	<0.02	E.06	310	360	6,900	7.72	96	27
15...	--	--	*61k	*70k	*120	--	--	--
24...	--	--	*56k	*15k	*63k	--	--	--
29...	--	--	*48k	*27k	*205	--	--	--
NOV								
05...	--	--	*7k	*9k	*54	--	--	--
07...	<0.005	0.035	15k	32k	54	14.0	94	7
DEC								
12...	0.005	0.040	--	--	--	10.6	90	8
JAN 2002								
16...	0.017	0.057	--	--	--	5.35	90	30
FEB								
13...	0.007	0.067	--	--	--	5.35	87	44
MAR								
20...	0.011	0.062	--	--	--	6.91	72	22
APR								
17...	<0.005	0.075	--	52	9k	16.3	59	67
MAY								
07...	--	--	*16k	*2k	*16k	--	--	--
13...	--	--	*6k	*2k	*19k	--	--	--
15...	<0.005	0.080	<1	6k	24	10.5	70	43
20...	--	--	*8k	*14k	*16k	--	--	--
28...	--	--	*6k	*12k	*35k	--	--	--
JUN								
03...	--	--	*19k	*36k	*62	--	--	--
05...	0.011	0.076	20k	31	30	8.84	88	44
10...	--	--	*33k	*63k	*76k	--	--	--
17...	--	--	*40k	*63k	*50k	--	--	--
26...	0.030	0.115	79k	57	40	9.09	85	58
JUL								
01...	--	--	*88k	*54k	*197	--	--	--
08...	--	--	*1,600k	*1,100	*7,000	--	--	--
10...	0.108	0.402	4,000	1,400k	7,000	11.5	80	291
15...	--	--	*83k	*94k	*440	--	--	--
24...	0.052	0.129	20k	51	115	7.96	76	60
30...	--	--	*22k	*21k	*117k	--	--	--
AUG								
05...	--	--	*26k	*31k	*<10k	--	--	--
07...	0.032	0.110	46k	42	114k	12.8	88	39
12...	--	--	*6k	*20k	*124	--	--	--
19...	--	--	*45k	*31k	*96	--	--	--
21...	0.018	0.106	16k	85	200	12.3	84	58
26...	--	--	*45	*58	*125	--	--	--
SEP								
03...	--	--	*42	*40	*112	--	--	--
09...	--	--	*80	*58	*149	--	--	--
11...	0.022	0.086	25k	46	88	10.5	62	52
16...	--	--	*66	*100	*112	--	--	--
25...	0.011	0.056	48k	48	97	10.2	88	14
30...	--	--	*56	*80	*84	--	--	--

Remark codes used in this table:

< -- Less than

E -- Estimated value

> -- Greater than

Value qualifier codes used in this table:

* -- Collected and analyzed by Wilkin County Soil and Water Conservation District

k -- Counts outside acceptable range

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

[illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003—Continued

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, M-FC 0.7u MF col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
OCT 2002								
07...	--	--	*E25k	*73	*200	--	--	--
09...	<0.005	0.040	E23k	27	E16k	7.39	89	8
15...	--	--	*10k	*30k	*40	--	--	--
21...	--	--	*20k	*E8k	*199	--	--	--
28...	--	--	*34k	*56	*60	--	--	--
NOV								
05...	0.008	0.041	22k	17k	8k	11.0	88	3
DEC								
11...	<0.005	0.036	--	--	--	12.6	83	6
JAN 2003								
16...	0.012	0.052	--	--	--	7.48	34	22
FEB								
12...	0.005	0.042	--	--	--	14.6	43	11
MAR								
25...	0.012	0.089	<4k	--	--	5.94	66	25
APR								
15...	<0.005	0.053	E4k	E4k	E6k	17.7	58	58
MAY								
07...	--	--	*E17k	*44	*E26k	--	--	--
12...	--	--	*E8k	*E21k	*E31k	--	--	--
20...	--	--	*E8k	*E24k	*E33k	--	--	--
21...	0.006	0.084	E20k	E7k	E27k	14.5	80	41
29...	--	--	*E13k	*E22k	*E5k	--	--	--
JUN								
02...	--	--	*E14k	*E9k	*E20k	--	--	--
03...	0.007	0.074	<1	E18k	E45k	9.39	80	42
09...	--	--	*E31k	*E31k	*44	--	--	--
17...	0.012	0.090	E40k	27	60	9.39	99	6
23...	--	--	*E170k	*96	*405	--	--	--

Remark codes used in this table:

< -- Less than

E -- Estimated value

Value qualifier codes used in this table:

* -- Collected and analyzed by Wilkin County Soil and Water Conservation District

k -- Counts outside acceptable range

LOCATION.--Lat 46°15'42", long 96°32'45", SE¼ NW¼ sec. 11, T. 132 N, R. 47 W., Wilkin County, Hydrologic Unit 09020103, 1.5 miles east of Breckenridge on Wilkin County Highway 10.

DRAINAGE AREA.--1,848 mi².

WATER-QUALITY RECORDS

PERIOD OF RECORD.--September 2001 through June 2003.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 THROUGH SEPTEMBER 2001

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 deg C (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
SEP 2001													
11...	1330	--	--	--	--	--	--	--	--	--	--	--	--
11...	1520	564	32	9.7	8.4	412	25.0	20.0	0.77	<0.050	<0.050	<0.050	<0.010
17...	0945	--	--	--	--	--	--	--	--	--	--	--	--
23...	0930	--	--	--	--	--	--	--	--	--	--	--	--
25...	1230	513	19	10.0	8.5	419	16.0	13.9	0.83	<0.050	<0.050	<0.050	<0.010

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, col/100 mL (31633)	Fecal coliform, M-FC col/100 mL (31625)	Fecal streptococci KF, col/100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
SEP 2001								
11...	--	--	*60k	*34k	*48	--	--	--
11...	0.005	0.086	50k	56	20k	13.6	90	56
17...	--	--	*62k	*48	*70	--	--	--
23...	--	--	*51k	*91	*80	--	--	--
25...	<0.005	0.066	96	53k	41k	13.9	79	46

Remark codes used in this table:

< -- Less than

Value qualifier codes used in this table:

* -- Collected and analyzed by Wilkin County Soil and Water Conservation District

k -- Counts outside acceptable range

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unf uS/cm 25 deg C (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
OCT 2001													
02...	1045	--	--	--	--	--	--	--	--	--	--	--	--
10...	1030	--	--	--	--	--	--	--	--	--	--	--	--
10...	1215	468	35	9.7	8.2	412	10.5	12.2	0.97	<0.040	--	E.030	<0.008
15...	0945	--	--	--	--	--	--	--	--	--	--	--	--
24...	0845	--	--	--	--	--	--	--	--	--	--	--	--
29...	0910	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
05...	0900	--	--	--	--	--	--	--	--	--	--	--	--
07...	1115	411	4.0	11.4	8.2	489	9.8	6.3	0.69	<0.050	0.390	<0.050	<0.010
DEC													
12...	1400	545	0.0	13.9	8.0	502	-0.4	2.3	0.75	<0.050	<0.050	0.140	<0.010
JAN 2002													
16...	1415	--	11	13.0	8.0	486	-2.0	-0.3	0.69	0.080	0.080	0.140	<0.010
FEB													
13...	1530	488	2.0	11.2	7.9	482	8.5	-0.3	0.82	0.090	0.090	0.130	<0.010
MAR													
20...	1110	525	11	13.6	8.2	481	-2.0	0.1	0.81	0.120	0.120	0.160	<0.010
APR													
17...	1050	729	31	10.3	8.0	442	10.8	11.7	0.99	<0.050	<0.050	<0.050	<0.010
MAY													
07...	0825	--	--	--	--	--	--	--	--	--	--	--	--
13...	0745	--	--	--	--	--	--	--	--	--	--	--	--
15...	1225	910	29	11.8	8.2	450	20.1	11.7	0.95	<0.050	<0.050	0.070	<0.010
20...	0915	--	--	--	--	--	--	--	--	--	--	--	--
28...	0915	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
03...	0900	--	--	--	--	--	--	--	--	--	--	--	--
05...	1205	751	35	8.3	8.4	434	23.5	18.7	0.92	<0.050	<0.050	<0.050	<0.010
10...	0830	--	--	--	--	--	--	--	--	--	--	--	--
17...	0900	--	--	--	--	--	--	--	--	--	--	--	--
26...	1130	569	62	8.2	8.1	422	28.9	24.6	0.90	<0.050	0.060	0.160	0.010
JUL													
01...	0910	--	--	--	--	--	--	--	--	--	--	--	--
08...	0910	--	--	--	--	--	--	--	--	--	--	--	--
10...	1420	1,190	130	6.8	8.1	341	17.8	23.5	1.1	<0.050	0.060	0.400	0.020
15...	0930	--	--	--	--	--	--	--	--	--	--	--	--
24...	1155	677	26	7.4	8.1	423	24.0	22.5	0.95	0.060	0.050	0.190	0.010
29...	0845	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
05...	0845	--	--	--	--	--	--	--	--	--	--	--	--
07...	1130	604	26	8.6	8.3	412	28.7	21.7	0.98	<0.050	<0.		

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002—Continued

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, M-FC 0.7u MF col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
OCT 2001								
02...	--	--	*240	*110	*320	--	--	--
10...	--	--	*310	*250	*10,000	--	--	--
10...	<0.02	0.09	380k	380	2780	7.17	88	58
15...	--	--	*61k	*47k	*190	--	--	--
24...	--	--	*46k	*12k	*54k	--	--	--
29...	--	--	*23k	*13k	*100	--	--	--
NOV								
05...	--	--	*27k	*5k	*66	--	--	--
07...	<0.005	0.037	11k	15k	43k	12.3	82	11
DEC								
12...	<0.005	0.046	--	--	--	9.24	80	17
JAN 2002								
16...	0.012	0.055	--	--	--	3.76	78	18
FEB								
13...	0.008	0.055	--	--	--	6.62	83	30
MAR								
20...	0.011	0.062	--	--	--	6.11	73	35
APR								
17...	<0.005	0.094	25k	56k	5k	18.5	83	64
MAY								
07...	--	--	*9k	*4k	*20k	--	--	--
13...	--	--	*2k	*10k	*67	--	--	--
15...	<0.005	0.099	6k	12k	37k	12.3	64	79
20...	--	--	*13k	*15k	*30k	--	--	--
28...	--	--	*9k	*20k	*40	--	--	--
JUN								
03...	--	--	*30k	*62	*151	--	--	--
05...	0.009	0.091	10k	47	59	13.2	84	62
10...	--	--	*44k	*61k	*116	--	--	--
17...	--	--	*15k	*40k	*94k	--	--	--
26...	0.032	0.130	130k	100	74	11.2	87	83
JUL								
01...	--	--	*100k	*80	*192	--	--	--
08...	--	--	*650	*590	*3300	--	--	--
10...	0.101	0.420	1,200	1,300k	11,600k	10.1	84	298
15...	--	--	*67k	*74k	*433	--	--	--
24...	0.049	0.158	67	61	180	11.9	84	83
29...	--	--	*61k	*40k	*79k	--	--	--
AUG								
05...	--	--	*72	*38	*10k	--	--	--
07...	0.029	0.115	17k	31	90	16.6	89	57
12...	--	--	*54k	*47k	*108	--	--	--
19...	--	--	*27k	*45k	*66k	--	--	--
20...	0.018	0.093	E1k	17k	76	10.6	86	53
26...	--	--	*48k	*82	*116	--	--	--
SEP								
03...	--	--	*34k	*92	*192	--	--	--
09...	--	--	*40k	*62	*223	--	--	--
11...	0.019	0.105	28k	32k	116	6.11	84	65
16...	--	--	*48k	*85	*87	--	--	--
24...	0.012	0.066	<2k	42	54	9.91	83	31
30...	--	--	*93	*120	*139	--	--	--

Remark codes used in this table:

< -- Less than

E -- Estimated value

> -- Greater than

Value qualifier codes used in this table:

* -- Collected and analyzed by Wilkin County Soil and Water Conservation District

k -- Counts outside acceptable range

[illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003—Continued

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, M-FC 0.7u MF col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
OCT 2002								
07...	--	--	*88	*74	*310	--	--	--
08...	0.005	0.049	64	62	13k	6.07	88	17
15...	--	--	*33k	*46	*77	--	--	--
21...	--	--	*23k	*46	*28k	--	--	--
28...	--	--	*9k	*12k	*72	--	--	--
NOV								
06...	<0.005	0.039	8k	--	--	8.36	84	9
DEC								
10...	<0.005	0.043	--	--	--	13.2	60	13
JAN 2003								
15...	0.011	0.016	--	--	--	8.02	92	15
FEB								
12...	<0.005	0.052	--	--	--	16.6	48	114
MAR								
25...	0.012	0.105	--	--	--	18.2	49	63
APR								
15...	<0.005	0.073	12k	18k	11k	14.9	74	41
MAY								
07...	--	--	*E8k	*88	*E34k	--	--	--
12...	--	--	*E20k	*E25k	*68	--	--	--
20...	--	--	*E18k	*E24k	*100	--	--	--
21...	0.006	0.090	E7k	E37k	E31k	13.9	64	63
29...	--	--	*E24k	*E21k	*E26k	--	--	--
JUN								
02...	--	--	*E24k	*44	*46	--	--	--
03...	0.005	0.089	<1k	40	49	12.9	82	56
09...	--	--	*E37k	*64	*60	--	--	--
17...	0.009	0.207	E140k	64	76	12.9	80	49
23...	--	--	*240	*200	*395	--	--	--

Remark codes used in this table:

< -- Less than

E -- Estimated value

Value qualifier codes used in this table:

* -- Collected and analyzed by Wilkin County Soil and Water Conservation District

k -- Counts outside acceptable range

LOCATION.--Lat 46°16'28", long 96°34' 47" in NE¼ SE¼ sec. 4, T. 132 N., R. 47 W. Wilkin County, Hydrologic Unit 9020103, on upstream left bank of 11th Street Bridge in Breckenridge, MN.

DRAINAGE AREA.--1,991 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 2001 through June 2003.

GAGE.--Water stage recorder. Datum of gage is 966.73 ft above National Geodetic Vertical Datum of 1929. (From Topographic map).

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum recorded daily discharge 1,660 ft³/s July 12, 2002, minimum daily discharge (estimated) 245 ft³/s Mar. 13, 2003.

DISCHARGE, CUBIC FEET PER SECOND WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	e635
7	---	---	---	---	---	---	---	---	---	---	---	662
8	---	---	---	---	---	---	---	---	---	---	---	649
9	---	---	---	---	---	---	---	---	---	---	---	640
10	---	---	---	---	---	---	---	---	---	---	---	640
11	---	---	---	---	---	---	---	---	---	---	---	681
12	---	---	---	---	---	---	---	---	---	---	---	713
13	---	---	---	---	---	---	---	---	---	---	---	715
14	---	---	---	---	---	---	---	---	---	---	---	720
15	---	---	---	---	---	---	---	---	---	---	---	715
16	---	---	---	---	---	---	---	---	---	---	---	695
17	---	---	---	---	---	---	---	---	---	---	---	695
18	---	---	---	---	---	---	---	---	---	---	---	716
19	---	---	---	---	---	---	---	---	---	---	---	723
20	---	---	---	---	---	---	---	---	---	---	---	728
21	---	---	---	---	---	---	---	---	---	---	---	706
22	---	---	---	---	---	---	---	---	---	---	---	694
23	---	---	---	---	---	---	---	---	---	---	---	692
24	---	---	---	---	---	---	---	---	---	---	---	692
25	---	---	---	---	---	---	---	---	---	---	---	689
26	---	---	---	---	---	---	---	---	---	---	---	596
27	---	---	---	---	---	---	---	---	---	---	---	521
28	---	---	---	---	---	---	---	---	---	---	---	544
29	---	---	---	---	---	---	---	---	---	---	---	580
30	---	---	---	---	---	---	---	---	---	---	---	579
31	---	---	---	---	---	---	---	---	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---
AC-FT	---	---	---	---	---	---	---	---	---	---	---	---

e Estimated

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	580	605	e510	e580	e500	e460	689	847	842	750	735	679
2	612	614	e525	e585	e480	e490	655	829	840	681	715	673
3	624	601	e528	e582	e465	e505	642	824	839	652	670	663
4	557	590	e530	e580	e475	e495	639	801	819	646	647	718
5	527	584	e530	e575	e480	e480	637	805	780	641	641	738
6	526	581	e530	e555	e485	e470	645	801	774	634	642	735
7	524	580	e535	e550	e492	e460	655	775	756	646	641	754
8	516	547	e545	e548	e500	e480	711	848	735	730	644	762
9	515	519	e545	e548	e500	e500	664	1,000	720	936	638	763
10	572	516	e545	e545	e500	e500	658	974	726	1,150	655	775
11	560	517	e555	e543	e500	e510	669	976	741	1,530	648	765
12	595	515	e560	e545	e520	e525	786	1,010	740	1,660	643	730
13	641	516	e560	e550	e540	e545	786	1,000	753	1,500	617	653
14	647	515	e560	e555	e550	e570	710	989	761	1,320	608	624
15	650	513	e560	e565	e540	e590	708	993	760	1,230	587	622
16	648	514	e560	e573	e530	e610	806	926	762	1,070	573	613
17	645	512	e560	e570	e520	e610	842	898	770	942	575	582
18	609	509	e560	e565	e510	e610	848	948	773	891	575	568
19	580	511	e565	e560	e510	e610	847	963	786	855	573	561
20	572	513	e575	e550	e510	e607	845	958	744	841	574	532
21	573	546	e580	e540	e510	e600	843	916	722	833	703	516
22	575	563	e550	e525	e510	e595	846	863	751	824	756	516
23	572	562	e540	e518	e510	e580	812	848	798	812	756	515
24	573	561	e525	e510	e510	e570	784	854	796	768	646	514
25	593	570	e522	e513	e512	565	791	848	794	742	606	481
26	587	564	e515	e520	e515	565	768	850	817	683	427	474
27	581	e545	e505	e530	e510	576	767	849	821	733	271	419
28	575	e530	e505	e535	e490	660	774	846	786	765	301	413
29	581	e500	e525	e530	---	685	791	984	765	765	434	434
30	585	e495	e550	e525	---	714	863	908	754	758	469	435
31	587	---	e570	e515	---	698	---	854	---	764	635	---
TOTAL	18,082	16,308	16,825	16,985	14,174	17,435	22,481	27,785	23,225	27,752	18,605	18,227
MEAN	583	544	543	548	506	562	749	896	774	895	600	608
MAX	650	614	580	585	550	714	863	1,010	842	1,660	756	775
MIN	515	495	505	510	465	460	637	775	720	634	271	413
AC-FT	35,870	32,350	33,370	33,690	28,110	34,580	44,590	55,110	46,070	55,050	36,900	36,150

e Estimated

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	432	388	e379	e379	e379	e340	446	690	740	---	---	---
2	435	368	e377	e380	e375	e340	438	687	738	---	---	---
3	437	364	e375	e381	e365	e340	408	663	738	---	---	---
4	454	368	e373	e385	e345	e341	398	649	711	---	---	---
5	451	362	e371	e387	e365	e341	453	661	704	---	---	---
6	471	362	e372	e391	e380	e340	489	706	712	---	---	---
7	469	363	e373	e394	e370	e340	487	766	724	---	---	---
8	456	362	e373	e398	e360	e341	488	780	715	---	---	---
9	454	363	e374	e400	e355	e340	488	741	710	---	---	---
10	453	362	e374	e399	e355	e340	488	787	720	---	---	---
11	445	372	e374	e402	e355	e313	489	808	712	---	---	---
12	442	363	e375	e403	e363	e256	491	802	679	---	---	---
13	444	362	e375	e399	e370	e245	487	888	661	---	---	---
14	438	e363	e374	e370	e372	e330	486	951	657	---	---	---
15	437	e359	e377	e344	e371	e450	492	939	658	---	---	---
16	439	e351	e385	e320	e368	e600	532	858	657	---	---	---
17	441	e345	e395	e310	e363	e650	606	892	665	---	---	---
18	442	e338	e394	e310	e360	e630	697	912	656	---	---	---
19	437	e333	e393	e309	e352	e600	803	937	655	---	---	---
20	438	e324	e392	e320	e345	858	797	943	653	---	---	---
21	441	e390	e394	e332	e345	982	734	875	653	---	---	---
22	434	e412	e393	e342	e344	1,130	780	847	717	---	---	---
23	434	e407	e395	e345	e343	1,100	789	837	731	---	---	---
24	431	e399	e394	e345	e345	625	778	836	919	---	---	---
25	428	e400	e392	e345	e341	613	772	832	1,330	---	---	---
26	426	e397	e390	e345	e339	608	770	824	1,420	---	---	---
27	425	e392	e383	e345	e340	608	767	818	1,250	---	---	---
28	424	e380	e371	e355	e340	600	767	818	1,040	---	---	---
29	420	e377	e359	e365	---	514	765	783	1,010	---	---	---
30	419	e379	e368	e375	---	482	715	735	933	---	---	---
31	384	---	e374	e379	---	480	---	746	---	---	---	---
TOTAL	13,581	11,105	11,788	11,254	10,005	16,077	18,100	25,011	23,868	---	---	---
MEAN	438	370	380	363	357	519	603	807	796	---	---	---
MAX	471	412	395	403	380	1,130	803	951	1,420	---	---	---
MIN	384	324	359	309	339	245	398	649	653	---	---	---
AC-FT	26,940	22,030	23,380	22,320	19,840	31,890	35,900	49,610	47,340	---	---	---

e Estimated

WATER-QUALITY RECORDS

PERIOD OF RECORD.--September 2001 through June 2003.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 THROUGH SEPTEMBER 2001

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
SEP 2001													
11...	1215	713	38	9.0	8.5	412	22.5	18.8	0.79	<0.050	<0.050	<0.050	<0.010
11...	1300	--	--	--	--	--	--	--	--	--	--	--	--
17...	0930	--	--	--	--	--	--	--	--	--	--	--	--
23...	0900	--	--	--	--	--	--	--	--	--	--	--	--
25...	1020	696	18	9.7	8.5	418	13.1	13.8	0.77	<0.050	<0.050	<0.050	<0.010

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, M-FC 0.7u MF col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
SEP 2001								
11...	<0.005	0.093	80	80k	28k	15.2	95	60
11...	--	--	*30	*38	*95	--	--	--
17...	--	--	*150k	*74k	*64	--	--	--
23...	--	--	*100	*85k	*120	--	--	--
25...	<0.005	0.070	120	140	92	12.8	95	40

Remark codes used in this table:

< -- Less than

Value qualifier codes used in this table:

* -- Collected and analyzed by Wilkin County Soil and Water Conservation District

k -- Counts outside acceptable range

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfluS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
OCT 2001													
02...	1015	--	--	--	--	--	--	--	--	--	--	--	--
10...	1030	570	28	9.6	8.2	424	11.0	12.4	0.72	<0.040	--	E.030	<0.008
10...	1035	--	--	--	--	--	--	--	--	--	--	--	--
15...	0930	--	--	--	--	--	--	--	--	--	--	--	--
24...	0810	--	--	--	--	--	--	--	--	--	--	--	--
29...	0900	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
05...	0845	--	--	--	--	--	--	--	--	--	--	--	--
07...	0850	608	6.0	11.5	8.4	482	8.3	6.2	0.87	<0.050	<0.050	<0.050	<0.010
DEC													
12...	1105	--	8.4	12.9	8.1	503	-0.9	-0.3	0.68	<0.050	<0.050	0.140	<0.010
JAN 2002													
16...	1245	528	14	--	8.1	492	-1.8	-0.3	0.72	0.080	0.080	0.140	<0.010
FEB													
13...	1245	499	2.0	11.5	7.9	480	7.0	-0.3	0.77	0.070	0.080	0.120	<0.010
MAR													
20...	1320	607	11	14.0	8.2	482	-2.8	0.5	0.79	0.120	0.120	0.170	<0.010
APR													
17...	1050	837	49	9.8	8.2	436	9.0	13.0	0.94	<0.050	<0.050	<0.050	<0.010
MAY													
07...	0840	--	--	--	--	--	--	--	--	--	--	--	--
13...	0730	--	--	--	--	--	--	--	--	--	--	--	--
15...	0955	1,000	35	11.5	8.2	453	14.5	12.2	1.1	<0.050	<0.050	0.080	<0.010
20...	0930	--	--	--	--	--	--	--	--	--	--	--	--
28...	0930	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
03...	0830	--	--	--	--	--	--	--	--	--	--	--	--
05...	0945	793	45	8.0	8.3	434	20.0	19.0	0.88	<0.050	<0.050	<0.050	<0.010
10...	0830	--	--	--	--	--	--	--	--	--	--	--	--
17...	0900	--	--	--	--	--	--	--	--	--	--	--	--
26...	0850	829	65	7.1	8.3	420	24.5	25.1	1.1	<0.050	<0.050	0.130	<0.010
JUL													
01...	0900	--	--	--	--	--	--	--	--	--	--	--	--
10...	1635	1,210	140	6.3	8.1	338	18.8	22.9	1.6	0.050	0.060	0.390	0.020
15...	0830	--	--	--	--	--	--	--	--	--	--	--	--
18...	0900	--	--	--	--	--	--	--	--	--	--	--	--
24...	0930	754	31	7.3	8.1	422	20.5	22.5	0.99	<0.050	<0.050	0.180	0.010
29...	0830	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
05...	0830	--	--	--	--	--	--	--	--	--	--	--	--
07...	0920	636	33	8.1	8.4	410	22.8	21.1	0.90	<0.050	<		

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002—Continued

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, M-FC 0.7u MF col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
OCT 2001								
02...	--	--	*260	*130	*310	--	--	--
10...	<0.02	E.06	360	670	1,170	6.14	95	42
10...	--	--	*600k	*1,700	*>10,000	--	--	--
15...	--	--	*76k	*41k	*120	--	--	--
24...	--	--	*39k	*16k	*48k	--	--	--
29...	--	--	*11k	*20k	*76	--	--	--
NOV								
05...	--	--	*20k	*15k	*114	--	--	--
07...	<0.005	0.038	10k	6k	56k	10.5	85	12
DEC								
12...	<0.005	0.054	--	--	--	9.99	86	21
JAN 2002								
16...	0.013	0.044	--	--	--	3.45	90	23
FEB								
13...	0.008	0.049	--	--	--	4.15	--	--
MAR								
20...	0.011	0.065	--	--	--	5.07	93	26
APR								
17...	<0.005	0.119	20k	10k	50	19.9	89	81
MAY								
07...	--	--	*9k	*4k	*13k	--	--	--
13...	--	--	*13k	*20k	*89	--	--	--
15...	<0.005	0.101	17k	51k	42	10.8	67	153
20...	--	--	*15k	*15k	*34k	--	--	--
28...	--	--	*20k	*13k	*61k	--	--	--
JUN								
03...	--	--	*20k	*56	*165	--	--	--
05...	0.011	0.098	36k	53	71	10.7	92	72
10...	--	--	*25k	*62k	*132	--	--	--
17...	--	--	*E130k	*63k	*148	--	--	--
26...	0.028	0.140	200k	100	200	14.1	97	89
JUL								
01...	--	--	*E43	*110	*253	--	--	--
10...	0.108	0.425	2,900	>6,000	9,800	16.0	87	274
15...	--	--	*42k	*120k	*606	--	--	--
18...	--	--	*990	*150k	*500	--	--	--
24...	0.048	0.154	10k	23	215	9.69	92	82
29...	--	--	*58k	*84k	*139k	--	--	--
AUG								
05...	--	--	*53	*47	*<10k	--	--	--
07...	0.025	0.119	37	25	209	19.2	95	57
12...	--	--	*28k	*32k	*104	--	--	--
19...	--	--	*49k	*23k	*116	--	--	--
21...	0.018	0.140	420	420	660	15.0	91	96
26...	--	--	*51k	*50	*144	--	--	--
SEP								
03...	--	--	*44k	*92	*207	--	--	--
09...	--	--	*26k	*60k	*320	--	--	--
11...	0.020	0.115	28k	21k	142	11.7	89	80
16...	--	--	*31k	*60	*112	--	--	--
25...	0.012	0.072	41	140	112	9.59	95	30
30...	--	--	*52	*140	*145	--	--	--

Remark codes used in this table:

< -- Less than

E -- Estimated value

> -- Greater than

Value qualifier codes used in this table:

* -- Collected and analyzed by Wilkin County Soil and Water Conservation District

k -- Counts outside acceptable range

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate + nitrite water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
OCT 2002													
07...	0800	--	--	--	--	--	--	--	--	--	--	--	--
08...	1710	477	5.0	10.8	8.2	453	9.3	11.0	0.69	<0.050	<0.050	<0.050	<0.010
15...	0800	--	--	--	--	--	--	--	--	--	--	--	--
21...	1015	--	--	--	--	--	--	--	--	--	--	--	--
28...	0800	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
06...	0955	359	0.0	14.0	8.0	485	1.0	0.7	0.66	<0.050	<0.050	<0.050	<0.010
JAN 2003													
15...	1045	344	30	13.7	7.2	439	-17.0	0.3	0.77	0.160	0.160	0.120	<0.010
FEB													
12...	1625	314	3.4	12.9	7.9	510	-7.0	-0.3	0.88	0.060	0.060	0.150	<0.010
MAR													
25...	0955	587	20	--	7.9	480	9.6	6.0	1.2	0.120	0.170	0.170	<0.010
APR													
15...	0935	467	35	9.5	8.5	445	9.4	11.8	0.81	<0.050	<0.050	<0.050	<0.010
MAY													
07...	0745	--	--	--	--	--	--	--	--	--	--	--	--
12...	0800	--	--	--	--	--	--	--	--	--	--	--	--
20...	0730	--	--	--	--	--	--	--	--	--	--	--	--
21...	1440	888	40	9.8	8.2	475	24.5	16.0	0.89	<0.050	<0.050	0.070	<0.010
28...	0800	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
02...	1100	--	--	--	--	--	--	--	--	--	--	--	--
03...	0935	767	38	7.8	8.3	437	16.5	17.4	0.96	<0.050	<0.050	<0.050	<0.010
09...	0730	--	--	--	--	--	--	--	--	--	--	--	--
17...	1000	714	48	6.9	8.1	436	22.5	23.6	1.0	<0.050	<0.050	<0.050	<0.010
23...	0800	--	--	--	--	--	--	--	--	--	--	--	--

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coli-form, M-FC 0.7u MF 100 mL (31625)	Fecal streptococci KF MF, col/100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diameter <.063mm percent (70331)	Suspended sediment concentration mg/L (80154)
OCT 2002								
07...	--	--	*110	*99	*400	--	--	--
08...	0.006	0.052	42k	68	38	6.81	84	23
15...	--	--	*32k	*46	*88	--	--	--
21...	--	--	*60k	*48	*29k	--	--	--
28...	--	--	*80	*E31k	*E38k	--	--	--
NOV								
06...	0.036	0.037	17k	14k	19k	8.65	92	7
JAN 2003								
15...	0.012	0.049	--	--	--	7.28	91	9
FEB								
12...	<0.005	0.050	--	--	--	17.0	94	7
MAR								
25...	0.062	0.134	--	--	--	16.2	93	58
APR								
15...	<0.005	0.084	E16k	E12k	E15k	12.5	91	47
MAY								
07...	--	--	*8k	*E31k	*62	--	--	--
12...	--	--	*E36k	*E34k	*111	--	--	--
20...	--	--	*E10k	*E40k	*137	--	--	--
21...	0.006	0.087	E21k	E18k	E25k	13.4	86	45
28...	--	--	*E16k	*E24k	*50	--	--	--
JUN								
02...	--	--	*44	*E31k	*84	--	--	--
03...	0.005	0.154	E24k	E22k	67	15.1	64	121
09...	--	--	*E42k	*E41k	*69	--	--	--
17...	0.010	0.128	E130k	160	196	15.1	90	82
23...	--	--	*230	*210	*478	--	--	--

Remark codes used in this table:

< -- Less than

E -- Estimated value

Value qualifier codes used in this table:

* -- Collected and analyzed by Wilkin County Soil and Water Conservation District

k -- Counts outside acceptable range

LOCATION.--Lat 45°53'15", long 96°12'48", NW¹/₄ NW¹/₄ sec. 21, T. 130 N, R. 45 W., Grant County, Hydrologic Unit 9020102, 1 mile northwest of Norcross on Minnesota Highway 9.

DRAINAGE AREA.--181 mi².

WATER-QUALITY RECORDS.

PERIOD OF RECORD.--September 2001 through September 2003.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 THROUGH SEPTEMBER 2001

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
SEP 2001													
10...	1515	--	52	9.1	8.4	1,460	23.0	21.2	--	--	--	--	--
24...	1500	12	40	10.4	8.3	1,560	16.0	16.1	1.5	0.060	0.070	0.330	0.020

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 THROUGH SEPTEMBER 2001

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, col/ 100 mL (31633)	Fecal coliform, M-FC col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diameter percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
SEP 2001								
10...	--	--	E800k	440	373	--	--	--
24...	0.195	0.220	250	450	277	9.95	96	43

Remark codes used in this table:

E -- Estimated value

Value qualifier codes used in this table:

k -- Counts outside acceptable range

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate + nitrite water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
OCT 2001													
09...	1325	6.5	36	11.9	8.2	1,610	19.5	10.4	1.5	<0.040	--	<0.050	<0.008
NOV 05...	1500	12	18	13.1	8.1	1,720	25.0	10.6	1.5	<0.050	<0.050	<0.050	<0.010
DEC 11...	1130	18	0.0	12.9	7.9	1,800	4.3	-0.2	1.2	0.080	0.090	0.630	<0.010
JAN 2002													
15...	1300	12	13	12.5	7.8	2,340	-7.6	-0.3	1.7	<0.050	<0.050	0.390	<0.010
FEB 12...	1245	9.6	7.8	11.1	7.8	2,270	-5.7	-0.3	1.8	<0.050	<0.050	0.190	<0.010
MAR 19...	1130	14	4.0	11.1	7.7	1,270	-10.0	-0.3	1.5	0.160	0.160	0.780	0.010
APR 16...	1315	38	47	12.0	8.0	1,200	29.8	16.9	1.6	<0.050	<0.050	0.260	0.010
MAY 14...	1245	96	60	12.0	8.0	1,590	18.5	11.5	2.2	<0.050	0.070	--	0.030
JUN 04...	1235	25	100	8.1	8.2	1,600	19.5	17.0	2.1	0.120	0.120	0.140	0.020
25...	0940	7.1	98	5.4	7.8	1,580	28.8	25.4	2.2	0.170	0.180	0.400	0.110
JUL 09...	1445	228	120	5.5	8.0	1,080	32.5	26.5	2.2	0.110	0.120	0.650	0.060
23...	1250	205	19	5.9	7.6	1,200	20.4	22.4	1.8	0.050	<0.050	0.130	0.020
AUG 06...	1235	63	91	7.4	8.1	1,280	22.5	20.2	2.6	<0.050	<0.050	0.100	<0.010
20...	1125	31	54	8.0	8.1	1,280	24.0	19.4	1.7	<0.050	<0.050	0.060	<0.010
SEP 10...	1210	14	61	8.3	8.1	1,340	22.1	20.9	1.7	0.080	0.150	0.320	0.020
24...	1345	4.4	22	14.0	8.4	1,430	17.0	10.6	1.1	<0.050	<0.050	<0.050	<0.010

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, M-FC 0.7u MF col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diameter percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
OCT 2001								
09...	0.07	0.18	240	330	274	29.3	100	33
NOV 05...	<0.005	0.114	E18k	E11k	E34k	42.5	97	45
DEC 11...	0.020	0.081	--	--	--	10.2	100	6
JAN 2002								
15...	<0.005	0.090	--	--	--	32.4	62	66
FEB 12...	<0.005	0.108	--	--	--	50.9	65	28
MAR 19...	0.098	0.211	--	--	--	18.0	88	11
APR 16...	0.018	0.191	130k	200	120	62.2	96	40
MAY 14...	0.048	0.224	E5k	26k	60k	17.2	95	94
JUN 04...	0.041	0.258	1k	110	88	32.9	100	99
25...	0.120	0.310	480k	430	330	15.5	99	79
JUL 09...	0.207	0.532	1,400k	1,900k	6,900	42.2	94	168
23...	0.332	0.521	40k	47k	362	23.1	88	72
AUG 06...	0.144	0.477	100k	120	315	63.5	98	161
20...	0.096	0.287	60k	150	276	34.1	98	80
SEP 10...	0.156	0.314	540	410	296	22.9	98	86
24...	0.090	0.135	130k	57	50	4.78	99	5

Remark codes used in this table:

< -- Less than

E -- Estimated value

Value qualifier codes used in this table:

k -- Counts outside acceptable range

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
OCT 2002													
08...	1015	15	33	10.5	8.2	1,440	10.1	7.9	1.4	<0.050	<0.050	0.170	<0.010
NOV													
05...	1010	16	12	13.6	8.0	1,700	2.5	0.1	1.2	<0.050	<0.050	0.250	<0.010
DEC													
10...	1105	13	0.0	14.0	7.9	1,990	8.5	-0.3	1.4	0.070	--	0.280	<0.010
JAN 2003													
14...	1120	2.7	26	13.9	7.4	2,300	17.0	-0.4	1.4	0.230	0.230	0.430	<0.010
FEB													
11...	1300	5.8	1.7	14.8	7.3	2,570	-10.1	-0.4	1.6	0.120	0.120	0.290	<0.010
MAR													
26...	0910	8.3	11	--	7.7	784	5.8	-0.7	1.7	0.530	0.530	0.400	0.010
APR													
16...	0910	25	100	9.8	8.0	1,440	1.2	8.0	1.8	0.100	0.100	<0.050	<0.010
MAY													
20...	1225	44	130	10.0	8.2	1,600	11.5	12.8	1.9	0.050	0.070	0.450	0.020
JUN													
04...	0910	19	95	7.4	8.1	1,640	19.5	17.1	1.9	0.130	0.150	0.100	0.010
18...	0855	16	120	5.6	8.0	1,640	22.0	22.8	2.5	0.120	0.120	0.150	0.020
JUL													
10...	0850	136	150	6.9	7.7	1,320	17.0	21.2	1.9	<0.050	<0.050	0.180	0.010
22...	0805	56	130	6.9	8.0	1,400	19.9	22.2	2.0	<0.050	<0.050	0.100	<0.010
AUG													
05...	1510	20	58	8.5	8.3	1,450	32.0	26.5	1.7	<0.050	<0.050	0.060	<0.010
19...	1705	5.8	20	10.1	8.3	1,480	24.9	31.2	1.5	<0.050	<0.050	<0.050	<0.010
SEP													
04...	0855	0.22	12	7.8	7.8	1,670	13.4	14.8	1.4	<0.050	<0.050	<0.050	<0.010

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, M-FC col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diameter percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
OCT 2002								
08...	0.103	0.234	170k	560	107	24.7	100	58
NOV								
05...	<0.005	0.079	E1k	14k	16k	25.2	97	66
DEC								
10...	<0.005	0.049	--	--	--	0.270	86	112
JAN 2003								
14...	<0.005	0.044	--	--	--	7.20	54	269
FEB								
11...	<0.005	0.072	--	--	--	--	41	145
MAR								
26...	0.107	0.160	--	--	--	7.96	94	8
APR								
16...	0.022	0.242	E93k	140	342	46.8	97	90
MAY								
20...	0.031	0.194	E60k	E31k	E27k	27.6	98	99
JUN								
04...	0.047	0.218	270	350	257	32.9	100	112
18...	0.030	0.247	E470k	590	620	--	100	110
JUL								
10...	0.262	0.434	E94k	130	330	2.14	90	118
22...	0.168	0.368	--	260	323	27.8	96	134
AUG								
05...	0.168	0.315	67k	120	208	49.8	99	89
19...	0.120	0.194	500	490	570	7.10	97	18
SEP								
04...	0.029	0.093	820	720	826	5.09	98	25

Remark codes used in this table:

< -- Less than

E -- Estimated value

Value qualifier codes used in this table:

k -- Counts outside acceptable range

LOCATION.--Lat 45°49'15", long 96°29'25", SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 8, T. 127 N., R. 46 W., Traverse County, Hydrologic Unit 9020102, 0.5 mi north of Wheaton on U.S. Highway 75.

DRAINAGE AREA.--812 mi².

WATER-QUALITY RECORDS

PERIOD OF RECORD.--September 2001 to September 2003.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: December 2001 to September 2003.

SPECIFIC CONDUCTANCE: December 2001 to September 2003.

PH: December 2001 to September 2003.

DISSOLVED OXYGEN: February 2002 to September 2003.

TURBIDITY: December 2001 to September 2003.

INSTRUMENTATION.--Water-quality monitor.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 30.5°C, June 25, 2002; minimum recorded, 0°C, on many days during winter months.

SPECIFIC CONDUCTANCE: Maximum recorded, 2,400 microsiemens, December 28, 2002; minimum recorded, 282 microsiemens, July 11, 2002.

PH: Maximum recorded, 8.8 units, April 27-30, 2003, May 1-6, 2003, and May 12, 2003; minimum recorded, 7.2 units, July 12, 2002.

DISSOLVED OXYGEN: Maximum recorded, 29.4 mg/L, January 11, 2003; minimum recorded, 1.5 mg/L, October 3, 2002.

TURBIDITY: Maximum recorded, 1,100 NTU's, July 8, 2002; minimum recorded, 4.0 NTU's, January 1, 2003, and January 5-12, 2003.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 THROUGH SEPTEMBER 2001

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
SEP 2001													
10...	1430	23	35	9.6	8.3	1,350	21.0	17.9	--	--	--	--	--
24...	1330	24	26	11.6	8.6	1,360	16.0	13.2	1.5	<0.050	<0.050	<0.050	<0.010

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, M-FC col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diameter percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
SEP 2001								
10...	--	--	500	560	253k	--	98	43
24...	0.088	0.170	140	150	160	20.5	95	85

Remark codes used in this table:

< -- Less than

Value qualifier codes used in this table:

k -- Counts outside acceptable range

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
OCT 2001													
09...	1500	19	44	9.9	8.1	1,530	20.5	10.5	1.4	<0.040	--	<0.050	<0.008
NOV 05...	1325	35	32	11.7	8.0	1,400	25.8	7.6	1.7	<0.050	0.060	<0.050	<0.010
DEC 11...	1330	18	7.0	13.3	7.7	1,810	5.0	0.0	1.4	<0.050	0.050	0.410	<0.010
JAN 2002													
15...	1500	12	13	11.2	7.5	2,220	-6.9	-0.3	1.6	0.080	0.090	0.400	<0.010
FEB 12...	1550	5.8	4.0	11.9	7.5	2,050	-3.2	-0.3	1.5	<0.050	<0.050	0.190	<0.010
MAR 19...	1425	29	5.0	13.8	7.8	1,310	-0.2	-0.2	1.3	0.170	0.170	0.940	0.020
APR 16...	1500	116	46	11.0	8.0	1,260	31.9	18.5	1.4	<0.050	<0.050	2.30	0.070
MAY 14...	1355	200	58	11.6	8.1	1,430	19.8	13.4	1.9	0.070	0.080	2.50	0.060
JUN 04...	1400	65	51	9.8	8.3	1,550	23.0	17.0	1.6	0.080	<0.050	0.110	0.010
25...	0830	71	38	5.7	8.3	1,380	30.0	27.0	2.0	<0.050	<0.050	<0.050	<0.010
JUL 09...	1600	321	100	4.7	7.7	714	31.5	27.0	1.6	0.120	0.120	0.780	0.080
23...	1430	141	32	6.9	7.7	1,180	23.0	22.5	1.7	<0.050	<0.050	0.150	0.010
AUG 06...	1415	77	61	7.6	8.1	1,280	23.1	21.3	1.8	<0.050	<0.050	<0.050	<0.010
20...	1250	44	43	8.9	8.1	1,250	25.0	20.7	1.4	<0.050	<0.050	0.080	<0.010
SEP 10...	1430	37	57	8.0	8.3	1,340	26.8	21.0	1.6	<0.050	<0.050	<0.050	<0.010
24...	1130	29	24	9.2	8.2	1,460	15.5	9.8	1.3	<0.050	0.070	<0.050	<0.010

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, M-FC col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diameter percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
OCT 2001								
09...	0.05	0.19	--	--	--	27.8	99	65
NOV 05...	0.052	0.193	37k	27k	63k	32.4	99	24
DEC 11...	0.049	0.114	--	--	--	9.75	75	37
JAN 2002								
15...	0.009	0.080	--	--	--	14.2	94	35
FEB 12...	0.012	0.098	--	--	--	21.0	99	8
MAR 19...	0.131	0.198	--	--	--	3.45	94	8
APR 16...	0.111	0.136	24k	45k	38k	69.9	99	44
MAY 14...	0.100	0.231	63k	47k	60k	15.8	99	72
JUN 04...	0.056	0.186	<1	82	112	24.9	100	43
25...	0.079	0.266	100k	650	754	28.1	99	87
JUL 09...	0.304	0.544	120k	270k	1,800k	23.2	98	119
23...	0.308	0.488	<5k	58k	403	23.3	99	91
AUG 06...	0.147	0.334	56	110	447	60.8	100	65
20...	0.104	0.261	40k	180	256	1.64	99	45
SEP 10...	0.084	0.244	270	440k	110	26.0	100	75
24...	0.075	0.162	130	110	86	4.04	98	36

Remark codes used in this table:

< -- Less than

Value qualifier codes used in this table:

k -- Counts outside acceptable range

TEMPERATURE, WATER, DEGREES CELSIUS
 WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	---	---	---	---	---	---	0.1	0.1	0.1
2	---	---	---	---	---	---	---	---	---	0.1	0.0	0.1
3	---	---	---	---	---	---	---	---	---	0.1	0.0	0.1
4	---	---	---	---	---	---	---	---	---	0.1	0.1	0.1
5	---	---	---	---	---	---	---	---	---	0.1	0.1	0.1
6	---	---	---	---	---	---	---	---	---	0.1	0.1	0.1
7	---	---	---	---	---	---	---	---	---	0.1	0.0	0.1
8	---	---	---	---	---	---	---	---	---	0.1	0.0	0.1
9	---	---	---	---	---	---	---	---	---	0.2	0.1	0.1
10	---	---	---	---	---	---	---	---	---	0.1	0.1	0.1
11	---	---	---	---	---	---	---	---	---	0.2	0.0	0.1
12	---	---	---	---	---	---	0.1	0.1	0.1	0.2	0.0	0.1
13	---	---	---	---	---	---	0.2	0.1	0.1	0.1	0.0	0.0
14	---	---	---	---	---	---	0.1	0.1	0.1	0.1	0.0	0.0
15	---	---	---	---	---	---	0.2	0.1	0.1	0.1	0.0	0.0
16	---	---	---	---	---	---	0.2	0.1	0.1	0.1	0.0	0.0
17	---	---	---	---	---	---	0.2	0.0	0.1	0.1	0.0	0.0
18	---	---	---	---	---	---	0.2	0.0	0.1	0.1	0.0	0.0
19	---	---	---	---	---	---	0.2	0.0	0.1	0.1	0.0	0.1
20	---	---	---	---	---	---	0.2	0.1	0.1	0.1	0.0	0.1
21	---	---	---	---	---	---	0.2	0.0	0.1	0.1	0.0	0.0
22	---	---	---	---	---	---	0.1	0.0	0.1	0.1	0.0	0.0
23	---	---	---	---	---	---	0.1	0.0	0.1	0.1	0.0	0.0
24	---	---	---	---	---	---	0.1	0.1	0.1	0.1	0.0	0.0
25	---	---	---	---	---	---	0.1	0.0	0.1	0.1	0.0	0.1
26	---	---	---	---	---	---	0.1	0.1	0.1	0.2	0.1	0.1
27	---	---	---	---	---	---	0.1	0.1	0.1	0.1	0.0	0.1
28	---	---	---	---	---	---	0.1	0.1	0.1	0.1	0.0	0.0
29	---	---	---	---	---	---	0.1	0.1	0.1	0.1	0.0	0.1
30	---	---	---	---	---	---	0.1	0.1	0.1	0.1	0.0	0.1
31	---	---	---	---	---	---	0.1	0.1	0.1	0.1	0.0	0.1
MONTH	---	---	---	---	---	---	0.2	0.0	0.1	0.2	0.0	0.1
FEBRUARY			MARCH			APRIL			MAY			
1	0.1	0.0	0.1	0.1	0.0	0.0	---	---	---	11.9	10.0	10.9
2	0.1	0.0	0.1	0.2	0.0	0.1	---	---	---	11.8	8.0	9.9
3	0.1	0.0	0.1	0.2	0.0	0.1	---	---	---	13.6	9.1	11.2
4	0.1	0.0	0.1	0.1	0.0	0.1	---	---	---	13.9	11.2	12.5
5	0.1	0.0	0.1	0.1	0.0	0.1	---	---	---	13.2	10.5	11.8
6	0.2	0.0	0.1	0.1	0.0	0.1	---	---	---	13.9	11.0	12.2
7	0.3	0.1	0.1	0.1	0.0	0.1	---	---	---	12.6	8.8	10.7
8	0.3	0.1	0.1	0.1	0.0	0.0	---	---	---	8.8	7.4	8.1
9	0.1	0.0	0.1	0.1	0.0	0.0	---	---	---	7.4	6.0	6.7
10	0.1	0.0	0.1	0.1	0.0	0.0	---	---	---	9.9	6.1	7.8
11	0.2	0.0	0.1	0.1	0.0	0.1	---	---	---	9.8	9.2	9.6
12	0.1	0.0	0.0	0.2	0.0	0.1	---	---	---	10.6	8.7	9.6
13	0.1	0.0	0.0	0.2	0.0	0.1	---	---	---	13.2	9.6	11.3
14	0.2	0.0	0.1	0.1	0.0	0.0	---	---	---	15.0	11.7	13.3
15	0.2	0.0	0.1	0.1	0.0	0.0	---	---	---	16.9	13.6	15.0
16	0.2	0.0	0.1	0.1	0.0	0.0	---	---	---	15.6	12.8	14.2
17	0.2	0.0	0.1	0.1	0.0	0.0	18.1	14.8	16.5	14.6	12.1	13.5
18	0.1	0.0	0.0	0.1	0.0	0.0	16.5	11.5	14.3	15.0	11.6	13.3
19	0.1	0.0	0.0	---	---	---	11.5	8.4	9.7	15.6	11.7	13.6
20	0.2	0.0	0.1	---	---	---	10.5	7.8	9.1	17.0	12.7	14.7
21	0.2	0.0	0.1	---	---	---	9.8	7.9	8.5	17.2	13.5	15.4
22	0.1	0.0	0.0	---	---	---	9.8	7.3	8.4	16.5	13.8	15.2
23	0.2	0.0	0.0	---	---	---	13.6	7.5	10.2	15.9	11.9	13.8
24	0.1	0.0	0.0	---	---	---	13.3	9.3	11.3	14.8	9.8	12.2
25	0.1	0.0	0.0	---	---	---	9.3	5.7	7.4	16.8	12.8	14.7
26	0.1	0.0	0.0	---	---	---	8.6	6.4	7.3	18.8	15.3	16.8
27	0.1	0.0	0.0	---	---	---	7.5	4.9	6.5	21.1	16.4	18.5
28	0.1	0.0	0.0	---	---	---	7.3	4.8	5.9	22.9	19.0	20.6
29	---	---	---	---	---	---	10.1	5.9	7.8	23.3	20.3	21.9
30	---	---	---	---	---	---	12.2	8.6	10.3	23.6	20.4	21.9
31	---	---	---	---	---	---	---	---	---	23.8	19.4	21.5
MONTH	0.3	0.0	0.1	0.2	0.0	0.1	18.1	4.8	9.5	23.8	6.0	13.6

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	---	---	---	2,200	2,130	2,170
2	---	---	---	---	---	---	---	---	---	2,240	2,200	2,220
3	---	---	---	---	---	---	---	---	---	2,240	2,240	2,240
4	---	---	---	---	---	---	---	---	---	2,270	2,240	2,260
5	---	---	---	---	---	---	---	---	---	2,250	2,210	2,230
6	---	---	---	---	---	---	---	---	---	2,210	2,190	2,210
7	---	---	---	---	---	---	---	---	---	2,210	2,190	2,200
8	---	---	---	---	---	---	---	---	---	2,200	2,170	2,190
9	---	---	---	---	---	---	---	---	---	2,180	2,140	2,170
10	---	---	---	---	---	---	---	---	---	2,180	2,150	2,170
11	---	---	---	---	---	---	---	---	---	2,170	2,130	2,150
12	---	---	---	---	---	---	1,710	1,680	1,690	2,140	2,110	2,120
13	---	---	---	---	---	---	1,720	1,700	1,710	2,130	2,120	2,130
14	---	---	---	---	---	---	1,730	1,720	1,720	2,140	2,120	2,120
15	---	---	---	---	---	---	1,740	1,720	1,730	2,140	2,120	2,120
16	---	---	---	---	---	---	1,740	1,740	1,740	2,140	2,130	2,140
17	---	---	---	---	---	---	1,760	1,740	1,750	2,160	2,130	2,150
18	---	---	---	---	---	---	1,780	1,740	1,760	2,160	2,130	2,150
19	---	---	---	---	---	---	1,850	1,780	1,820	2,200	2,160	2,180
20	---	---	---	---	---	---	1,880	1,760	1,850	2,180	2,160	2,170
21	---	---	---	---	---	---	1,970	1,770	1,900	2,210	2,160	2,170
22	---	---	---	---	---	---	1,970	1,890	1,920	2,240	2,210	2,240
23	---	---	---	---	---	---	1,920	1,890	1,900	2,230	2,190	2,200
24	---	---	---	---	---	---	1,980	1,920	1,960	2,230	2,210	2,210
25	---	---	---	---	---	---	2,040	1,920	1,970	2,240	2,190	2,220
26	---	---	---	---	---	---	2,120	2,040	2,090	2,200	2,160	2,180
27	---	---	---	---	---	---	2,120	2,090	2,110	2,290	2,160	2,230
28	---	---	---	---	---	---	2,090	2,060	2,070	2,320	2,290	2,300
29	---	---	---	---	---	---	2,070	2,060	2,070	2,300	2,260	2,280
30	---	---	---	---	---	---	2,090	2,070	2,070	2,280	2,260	2,270
31	---	---	---	---	---	---	2,130	2,090	2,110	2,270	2,240	2,260
MONTH	---	---	---	---	---	---	2,130	1,680	1,900	2,320	2,110	2,200
	FEBRUARY			MARCH			APRIL			MAY		
1	2,310	2,240	2,280	1,450	1,350	1,400	---	---	---	1,410	1,400	1,400
2	2,320	2,270	2,310	1,530	1,450	1,490	---	---	---	1,410	1,400	1,400
3	2,270	2,250	2,260	1,570	1,520	1,540	---	---	---	1,430	1,410	1,420
4	2,290	2,270	2,280	1,620	1,560	1,570	---	---	---	1,450	1,430	1,440
5	2,300	2,270	2,280	1,680	1,620	1,640	---	---	---	1,450	1,420	1,430
6	2,300	2,250	2,280	1,690	1,630	1,650	---	---	---	1,440	1,420	1,420
7	2,250	2,200	2,220	1,720	1,660	1,700	---	---	---	1,440	1,420	1,430
8	2,200	2,150	2,190	1,720	1,720	1,720	---	---	---	1,420	1,370	1,400
9	2,150	2,020	2,070	1,770	1,720	1,750	---	---	---	1,400	1,250	1,340
10	2,090	2,020	2,050	1,780	1,730	1,760	---	---	---	1,320	1,250	1,280
11	2,110	2,030	2,070	1,820	1,780	1,810	---	---	---	1,390	1,280	1,330
12	2,070	1,820	2,020	1,820	1,450	1,730	---	---	---	1,350	1,280	1,320
13	2,090	1,830	2,030	1,490	1,210	1,350	---	---	---	1,400	1,350	1,370
14	2,110	2,060	2,090	1,440	1,250	1,350	---	---	---	1,430	1,400	1,420
15	2,100	2,040	2,070	1,510	1,440	1,480	---	---	---	1,470	1,430	1,450
16	2,050	1,950	2,020	1,490	1,340	1,410	---	---	---	1,510	1,470	1,500
17	1,960	1,880	1,920	1,580	1,490	1,540	1,300	1,280	1,290	1,520	1,510	1,520
18	1,910	1,820	1,870	1,490	1,330	1,430	1,310	1,290	1,300	1,520	1,510	1,510
19	1,820	1,010	1,620	---	---	---	1,340	1,310	1,320	1,510	1,500	1,500
20	1,630	1,510	1,560	---	---	---	1,370	1,340	1,360	1,500	1,490	1,500
21	1,510	1,300	1,430	---	---	---	1,420	1,360	1,380	1,500	1,490	1,490
22	1,330	1,250	1,310	---	---	---	1,440	1,410	1,430	1,500	1,490	1,490
23	1,250	941	1,090	---	---	---	1,450	1,410	1,430	1,510	1,490	1,500
24	997	942	978	---	---	---	1,460	1,450	1,460	1,520	1,510	1,510
25	1,170	978	1,020	---	---	---	1,470	1,460	1,470	1,520	1,510	1,520
26	1,200	1,070	1,150	---	---	---	1,460	1,440	1,450	1,520	1,510	1,510
27	1,180	1,130	1,150	---	---	---	1,440	1,420	1,430	1,530	1,510	1,520
28	1,350	1,180	1,290	---	---	---	1,440	1,430	1,440	1,520	1,510	1,520
29	---	---	---	---	---	---	1,440	1,420	1,430	1,520	1,500	1,520
30	---	---	---	---	---	---	1,420	1,410	1,420	1,540	1,520	1,530
31	---	---	---	---	---	---	---	---	---	1,560	1,540	1,540
MONTH	2,320	941	1,820	1,820	1,210	1,570	1,470	1,280	1,400	1,560	1,250	1,450

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	1,560	1,550	1,550	1,330	1,300	1,310	1,270	1,260	1,260	1,310	1,300	1,310
2	1,550	1,540	1,550	1,330	1,320	1,320	1,270	1,260	1,260	1,320	1,300	1,310
3	1,560	1,540	1,550	1,360	1,330	1,350	1,260	1,250	1,250	1,320	1,310	1,310
4	1,570	1,540	1,560	1,360	1,350	1,350	1,260	1,250	1,250	1,320	1,320	1,320
5	1,580	1,550	1,580	1,370	1,340	1,350	1,260	1,250	1,260	1,320	1,300	1,310
6	1,550	1,530	1,540	1,390	1,360	1,370	1,290	1,250	1,260	1,320	1,310	1,310
7	1,530	1,520	1,530	1,400	921	1,350	1,270	1,260	1,260	1,320	1,310	1,320
8	1,550	1,530	1,540	1,380	394	871	1,270	1,260	1,270	1,330	1,320	1,320
9	1,540	1,510	1,520	844	415	641	1,290	1,250	1,280	1,340	1,320	1,330
10	1,510	1,490	1,500	960	309	730	1,260	1,200	1,230	1,320	1,290	1,310
11	1,500	1,480	1,490	392	282	318	1,290	1,250	1,270	1,310	1,290	1,300
12	1,500	1,480	1,490	563	392	499	1,280	1,270	1,270	1,320	1,310	1,320
13	1,490	1,480	1,480	651	563	618	1,280	1,260	1,270	1,330	1,320	1,330
14	1,480	1,460	1,470	725	651	682	1,280	1,230	1,250	1,340	1,320	1,330
15	1,470	1,430	1,460	847	725	782	1,280	1,220	1,250	1,340	1,320	1,330
16	1,500	1,430	1,460	998	847	926	1,220	1,140	1,170	1,350	1,330	1,340
17	1,510	1,470	1,500	1,050	998	1,030	1,180	1,150	1,170	1,360	1,330	1,340
18	1,490	1,450	1,480	1,060	1,040	1,050	1,210	1,180	1,190	1,360	1,330	1,340
19	1,480	1,440	1,460	1,070	1,050	1,060	1,230	1,210	1,220	1,360	1,330	1,350
20	1,470	1,420	1,440	1,120	1,070	1,090	1,240	1,230	1,230	1,360	1,330	1,350
21	1,430	1,270	1,390	1,160	1,120	1,140	1,240	1,230	1,240	1,360	1,340	1,340
22	1,470	1,350	1,440	1,200	1,140	1,170	1,240	1,230	1,240	1,370	1,360	1,370
23	1,450	1,350	1,430	1,220	1,200	1,210	1,260	1,240	1,250	1,380	1,360	1,370
24	1,420	1,360	1,400	1,250	1,220	1,240	1,270	1,260	1,260	1,390	1,380	1,390
25	1,460	1,340	1,420	1,270	1,250	1,260	1,280	1,260	1,270	1,410	1,380	1,400
26	1,450	1,360	1,420	1,280	1,270	1,280	1,350	1,280	1,290	1,410	1,390	1,390
27	1,360	1,210	1,280	1,280	1,270	1,280	1,300	1,290	1,300	1,410	1,390	1,410
28	1,720	1,210	1,540	1,280	1,280	1,280	1,310	1,300	1,300	1,420	1,390	1,400
29	1,570	1,300	1,380	1,280	1,270	1,280	1,300	1,260	1,290	1,400	1,390	1,390
30	1,310	1,290	1,300	1,280	1,270	1,280	1,300	1,250	1,270	1,400	1,390	1,400
31	---	---	---	1,280	1,260	1,270	1,320	1,300	1,310	---	---	

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	---	---	---	---	8.0	8.0	---	---	8.1	8.0
2	---	---	---	---	---	---	8.0	8.0	---	---	8.1	8.0
3	---	---	---	---	---	---	8.0	8.0	---	---	8.1	8.0
4	---	---	---	---	---	---	8.0	7.9	---	---	8.1	8.0
5	---	---	---	---	---	---	7.9	7.9	---	---	8.2	7.9
6	---	---	---	---	---	---	7.9	7.9	---	---	8.0	7.9
7	---	---	---	---	---	---	7.9	7.9	---	---	8.0	7.9
8	---	---	---	---	---	---	8.0	7.9	---	---	7.9	7.8
9	---	---	---	---	---	---	8.0	7.9	---	---	7.9	7.8
10	---	---	---	---	---	---	8.0	8.0	---	---	7.9	7.8
11	---	---	---	---	---	---	8.0	8.0	---	---	7.9	7.8
12	---	---	---	---	8.1	8.1	8.0	8.0	---	---	8.0	7.8
13	---	---	---	---	8.1	8.1	8.0	8.0	8.1	8.0	8.2	7.9
14	---	---	---	---	8.1	8.1	8.0	8.0	8.2	8.1	8.2	7.9
15	---	---	---	---	8.2	8.1	---	---	8.3	8.2	8.0	7.8
16	---	---	---	---	8.2	8.1	---	---	8.3	8.1	8.3	7.8
17	---	---	---	---	8.2	8.1	---	---	8.3	8.1	8.2	8.1
18	---	---	---	---	8.2	8.1	---	---	8.3	8.0	8.2	8.1
19	---	---	---	---	8.2	8.2	---	---	8.2	8.0	---	---
20	---	---	---	---	8.2	8.2	---	---	8.3	8.0	---	---
21	---	---	---	---	8.3	8.2	---	---	8.3	8.1	---	---
22	---	---	---	---	8.3	8.2	---	---	8.2	8.1	---	---
23	---	---	---	---	8.3	8.2	---	---	8.1	8.1	---	---
24	---	---	---	---	8.2	8.2	---	---	8.2	8.1	---	---
25	---	---	---	---	8.2	8.1	---	---	8.2	8.1	---	---
26	---	---	---	---	8.2	8.1	---	---	8.2	8.0	---	---
27	---	---	---	---	8.1	8.1	---	---	8.1	8.0	---	---
28	---	---	---	---	8.1	8.0	---	---	8.1	8.0	---	---
29	---	---	---	---	8.0	8.0	---	---	---	---	---	---
30	---	---	---	---	8.0	8.0	---	---	---	---	---	---
31	---	---	---	---	8.0	8.0	---	---	---	---	---	---
MONTH	---	---	---	---	8.3	8.0	8.0	7.9	8.3	8.0	8.3	7.8
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	8.6	8.5	8.6	8.4	8.5	8.2	8.1	7.8	8.3	8.2
2	---	---	8.6	8.5	8.5	8.4	8.3	8.1	8.1	7.9	8.4	8.2
3	---	---	8.6	8.5	8.4	8.4	8.1	7.8	8.1	8.0	8.4	8.2
4	---	---	8.5	8.4	8.4	8.3	8.3	8.0	8.2	7.9	8.5	8.2
5	---	---	8.5	8.4	8.4	8.3	8.3	8.2	8.3	8.0	8.5	8.3
6	---	---	8.4	8.4	8.4	8.3	8.3	8.2	8.2	8.0	8.5	8.3
7	---	---	8.4	8.4	8.5	8.3	8.2	8.0	8.2	8.1	8.5	8.3
8	---	---	8.4	8.2	8.5	8.3	8.1	7.6	8.3	8.1	8.5	8.4
9	---	---	8.2	8.1	8.5	8.3	7.6	7.5	8.3	8.2	8.5	8.3
10	---	---	8.2	8.1	8.4	8.4	7.6	7.5	8.3	8.1	8.4	8.3
11	---	---	8.2	8.1	8.5	8.2	7.5	7.4	8.3	8.1	8.4	8.3
12	---	---	8.2	8.2	8.5	8.3	7.4	7.2				

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	20.9	17.2	18.5	---	---	---	13.5	11.3	12.5
2	---	---	---	22.4	17.4	19.2	---	---	---	14.5	11.6	12.9
3	---	---	---	23.4	18.1	20.5	---	---	---	13.0	10.8	12.1
4	---	---	---	23.7	19.0	21.2	---	---	---	12.4	10.0	11.0
5	---	---	---	23.5	17.4	20.1	---	---	---	12.2	10.3	11.2
6	---	---	---	18.8	16.5	17.6	---	---	---	12.3	10.2	11.1
7	---	---	---	18.1	15.2	16.6	---	---	---	11.4	10.1	10.8
8	---	---	---	15.6	13.7	14.7	---	---	---	11.6	10.8	11.2
9	---	---	---	14.5	13.5	13.9	---	---	---	11.9	11.4	11.7
10	---	---	---	14.4	12.1	13.1	---	---	---	11.6	10.9	11.5
11	---	---	---	17.3	13.9	14.8	---	---	---	10.9	10.2	10.4
12	---	---	---	21.1	15.6	17.7	---	---	---	10.8	10.4	10.6
13	19.2	16.4	17.6	21.0	15.0	17.9	---	---	---	10.8	10.2	10.6
14	24.0	18.2	19.9	20.3	14.2	16.3	---	---	---	10.4	9.8	10.0
15	24.9	18.6	22.1	17.2	12.7	14.3	---	---	---	9.8	9.1	9.4
16	25.5	17.3	21.0	16.5	12.5	14.7	---	---	---	10.3	8.9	9.7
17	25.3	17.4	21.5	15.5	13.8	14.6	12.3	8.2	10.1	10.6	9.6	10.2
18	24.5	16.6	20.4	14.7	12.8	13.7	10.9	9.0	10.0	11.2	9.9	10.5
19	21.4	16.3	18.1	---	---	---	14.0	10.0	11.9	11.3	10.0	10.7
20	20.2	15.8	17.6	---	---	---	14.9	11.8	13.2	11.2	9.8	10.5
21	19.5	17.0	17.9	---	---	---	13.7	11.5	12.6	10.8	9.4	10.1
22	17.8	16.2	17.1	---	---	---	14.0	11.8	12.8	10.2	9.0	9.6
23	16.6	15.9	16.3	---	---	---	13.6	11.6	12.5	10.8	8.6	9.8
24	17.3	15.6	16.3	---	---	---	12.4	9.9	11.1	12.8	10.4	11.5
25	18.3	16.6	17.2	---	---	---	14.8	11.4	13.0	11.7	10.2	10.9
26	17.6	16.0	16.8	---	---	---	15.5	12.4	13.9	11.7	8.6	10.1
27	18.6	15.9	16.9	---	---	---	13.8	12.3	13.0	12.8	8.3	10.4
28	19.7	16.6	17.8	---	---	---	15.6	12.6	13.9	11.6	7.8	10
29	---	---	---	---	---	---	15.2	13.0	13.9	10.6	7.2	9.1
30	---	---	---	---	---	---	14.9	11.8	13.3	10.1	6.6	8.5
31	---	---	---	---	---	---	---	---	---	11.0	6.4	8.6
MONTH	25.5	15.6	18.4	23.7	12.1	16.6	15.6	8.2	12.5	14.5	6.4	10.6

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS
WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	---	---	---	---	---	---	13	9.5	18
2	---	---	---	---	---	---	---	---	---	12	9.3	18
3	---	---	---	---	---	---	---	---	---	12	9.0	17
4	---	---	---	---	---	---	---	---	---	11	8.7	17
5	---	---	---	---	---	---	---	---	---	11	8.6	18
6	---	---	---	---	---	---	---	---	---	11	8.8	17
7	---	---	---	---	---	---	---	---	---	11	8.7	18
8	---	---	---	---	---	---	---	---	---	11	8.4	17
9	---	---	---	---	---	---	---	---	---	11	8.8	18
10	---	---	---	---	---	---	---	---	---	10	8.3	18
11	---	---	---	---	---	---	---	---	---	11	8.3	19
12	---	---	---	---	---	---	18	12	14	11	8.4	19
13	---	---	---	---	---	---	16	10	14	12	8.1	19
14	---	---	---	---	---	---	16	11	14	11	8.0	19
15	---	---	---	---	---	---	16	10	14	20	7.3	19
16	---	---	---	---	---	---	14	11	14	17	14	15
17	---	---	---	---	---	---	15	10	14	17	13	14
18	---	---	---	---	---	---	16	11	16	17	12	13
19	---	---	---	---	---	---	14	10	15	15	12	13
20	---	---	---	---	---	---	14	11	15	15	13	12
21	---	---	---	---	---	---	17	13	19	16	12	12
22	---	---	---	---	---	---	17	11	18	14	11	11
23	---	---	---	---	---	---	14	9.8	16	14	10	11
24	---	---	---	---	---	---	22	9.4	17	14	10	10
25	---	---	---	---	---	---	16	11	19	24	11	11
26	---	---	---	---	---	---	15	11	19	31	12	12
27	---	---	---	---	---	---	13	9.5	16	25	12	12
28	---	---	---	---	---	---	12	9.4	16	21	11	11
29	---	---	---	---	---	---	16	9.5	17	23	11	11
30	---	---	---	---	---	---	12	9.1	17	23	12	12
31	---	---	---	---	---	---	12	9.8	17	24	14	12
MONTH	---	---	---	---	---	---	22	9.1	16	31	7.3	15
FEBRUARY			MARCH			APRIL			MAY			
1	40	12	13	7.4	5.8	6.7	---	---	---	67	39	49
2	40	12	12	7.2	5.7	6.3	---	---	---	66	35	50
3	35	12	14	7.1	5.2	6.1	---	---	---	77	41	54
4	42	13	13	7.3	5.3	6.1	---	---	---	100	54	73
5	34	12	12	6.6	4.9	5.6	---	---	---	87	49	66
6	34	13	13	6.6	4.8	5.6	---	---	---	61	45	53
7	70	12	17	6.4	4.7	5.4	---	---	---	62	40	53
8	28	13	10	5.7	4.7	5.1	---	---	---	73	32	40
9	20	12	8.3	6.2	4.6	5.0	---	---	---	230	43	120
10	19	12	7.9	7.9	4.7	5.5	---	---	---	200	110	150
11	19	11	7.3	8.2	4.5	5.7	---	---	---	150	93	120
12	18	6.6	7.3	17	7.1	11	---	---	---	120	75	97
13	8.5	5.8	6.9	17	9.2	12	---	---	---	120	67	93
14	12	5.7	7.2	12	7.4	8.8	---	---	---	---	---	---
15	11	5.8	7.7	9.9	7.1	7.9	---	---	---	---	---	---
16	15	5.7	8.9	17	9.2	12	---	---	---	---	---	---
17	14	5.7	8.5	11	7.2	8.4	160	67	100	---	---	---
18	17	5.7	9.0	8.6	7.2	7.6	170	98	120	---	---	---
19	84	6.7	20	---	---	---	120	48	73	---	---	---
20	12	7.6	9.5	---	---	---	61	37	47	---	---	---
21	13	8.1	11	---	---	---	52	35	43	---	---	---
22	12	9.5	11	---	---	---	46	36	40	---	---	---
23	22	11	15	---	---	---	66	37	47	---	---	---
24	20	10	14	---	---	---	80	57	69	---	---	---
25	11	8.3	9.6	---	---	---	59	38	48	---	---	---
26	11	7.7	9.4	---	---	---	45	31	38	---	---	---
27	10	7.2	8.5	---	---	---	42	30	37	---	---	---
28	7.7	6.2	7.2	---	---	---	34	26	31	---	---	---
29	---	---	---	---	---	---	58	29	37	---	---	---
30	---	---	---	---	---	---	55	39	46	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	84	5.7	11	17	4.5	7.3	170	26	55	230	32	78

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
OCT 2002													
08...	1145	29	15	10.5	8.2	1,420	11.6	8.7	1.2	<0.050	<0.050	<0.050	<0.010
NOV													
05...	1145	27	17	13.8	8.0	1,650	3.0	-0.1	1.4	<0.050	<0.050	0.060	<0.010
DEC													
10...	1425	8.9	6.0	20.6	8.0	2,030	13.3	0.0	1.4	--	--	0.140	<0.010
JAN 2003													
14...	1450	E2.7	14	18.2	7.5	2,310	-15.0	0.0	1.6	0.080	0.090	0.230	<0.010
APR													
16...	1030	33	120	9.7	8.2	1,470	1.0	8.8	1.8	<0.050	<0.050	<0.050	<0.010
MAY													
20...	1400	56	94	10.7	8.1	1,770	14.9	14.1	1.8	<0.050	<0.050	0.310	0.010
JUN													
04...	1045	46	100	9.3	8.4	1,680	20.3	17.6	1.7	<0.050	<0.050	0.060	<0.010
18...	1030	41	100	3.8	7.9	1,670	25.5	25.1	2.4	0.070	0.070	<0.050	<0.010
JUL													
10...	1040	363	120	6.7	7.6	1,210	18.5	21.6	2.2	<0.050	<0.050	0.050	<0.010
22...	1030	356	100	7.0	7.9	1,320	22.2	23.3	2.0	<0.050	<0.050	0.200	0.020
AUG													
06...	0915	76	60	6.3	8.1	1,480	23.5	24.0	1.8	<0.050	<0.050	0.100	<0.010
20...	0920	43	63	5.7	8.1	1,500	26.9	26.1	1.7	<0.050	<0.050	<0.050	<0.010
SEP													
04...	1015	31	60	6.8	8.0	1,540	17.8	17.9	1.8	<0.050	<0.050	<0.050	<0.010

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coli-form, M-FC 0.7u MF col/100 mL (31625)	Fecal streptococci KF MF, col/100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
OCT 2002								
08...	0.005	0.167	80k	160	60k	20.2	98	46
NOV								
05...	0.010	0.096	3k	10k	29k	21.6	95	12
DEC								
10...	<0.005	0.047	--	--	--	14.8	100	4
JAN 2003								
14...	<0.005	0.048	--	--	--	10.6	59	124
APR								
16...	0.012	0.251	E67k	E35k	223	54.2	78	16
MAY								
20...	0.031	0.171	<10	E80k	E20k	37.9	100	107
JUN								
04...	0.026	0.181	E73k	E250k	294	23.6	96	106
18...	0.033	0.253	400	230	220	41.4	90	92
JUL								
10...	0.416	0.639	E180k	170	513	50.2	99	84
22...	0.364	0.545	--	170	366	18.9	98	103
AUG								
06...	0.171	0.303	120k	210	168k	24.7	99	92
20...	0.100	0.225	140	140	234	8.44	94	60
SEP								
04...	0.044	0.162	--	--	--	8.55	93	37

Remark codes used in this table:

< -- Less than

E -- Estimated value

Value qualifier codes used in this table:

k -- Counts outside acceptable range

TEMPERATURE, WATER, DEGREES CELSIUS
 WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	16.3	14.6	15.5	1.3	0.3	0.7	0.5	0.1	0.2	0.2	0.1	0.1
2	14.6	12.3	13.0	0.7	0.0	0.3	0.4	0.1	0.2	0.2	0.1	0.1
3	12.3	11.2	11.5	0.4	0.0	0.2	0.3	0.1	0.2	0.2	0.1	0.1
4	11.2	9.9	10.6	0.5	0.1	0.3	0.2	0.1	0.1	0.2	0.1	0.2
5	10.4	9.6	10.0	0.3	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1
6	10.2	8.7	9.4	1.0	0.1	0.5	0.2	0.0	0.1	0.2	0.1	0.1
7	9.5	7.5	8.5	3.3	0.2	1.5	0.3	0.0	0.2	0.3	0.1	0.1
8	9.8	8.7	9.2	3.2	2.5	2.9	0.3	0.0	0.2	0.3	0.1	0.2
9	9.0	7.0	8.3	3.5	2.9	3.2	0.4	0.1	0.2	0.3	0.1	0.2
10	12.2	8.9	10.2	3.4	0.2	1.9	0.4	0.1	0.2	0.3	0.1	0.1
11	13.3	12.0	12.6	0.9	0.1	0.5	0.3	0.1	0.2	0.2	0.1	0.1
12	12.9	9.1	10.9	0.6	0.1	0.4	0.3	0.0	0.2	0.2	0.1	0.1
13	9.1	6.8	7.8	0.6	0.1	0.3	0.3	0.0	0.2	0.2	0.0	0.2
14	8.8	6.8	7.8	0.6	0.0	0.3	0.3	0.1	0.2	---	---	---
15	8.5	7.4	7.9	0.8	0.1	0.4	0.4	0.1	0.2	---	---	---
16	7.6	5.6	6.5	0.6	0.1	0.3	0.3	0.1	0.2	---	---	---
17	5.8	4.9	5.4	0.6	0.1	0.3	0.2	0.1	0.1	---	---	---
18	5.6	4.6	5.2	0.7	0.1	0.3	0.2	0.1	0.1	---	---	---
19	4.6	3.7	4.0	0.7	0.1	0.4	0.2	0.1	0.1	---	---	---
20	4.1	3.4	3.8	1.6	0.1	0.7	0.1	0.1	0.1	---	---	---
21	4.0	2.1	3.1	2.0	1.4	1.7	0.1	0.1	0.1	---	---	---
22	4.3	3.5	3.9	1.9	1.1	1.5	0.1	0.1	0.1	---	---	---
23	3.8	2.6	3.1	1.9	0.2	1.2	0.1	0.1	0.1	---	---	---
24	3.5	2.1	2.7	0.5	0.0	0.2	0.1	0.1	0.1	---	---	---
25	4.0	3.2	3.6	0.4	0.1	0.2	0.1	0.1	0.1	---	---	---
26	4.2	3.3	3.8	0.4	0.1	0.2	0.1	0.1	0.1	---	---	---
27	4.3	3.3	3.9	0.5	0.0	0.2	0.1	0.1	0.1	---	---	---
28	4.4	3.8	4.1	0.5	0.1	0.2	0.1	0.1	0.1	---	---	---
29	4.4	3.1	4.0	0.4	0.1	0.2	0.1	0.1	0.1	---	---	---
30	3.1	0.5	1.4	0.4	0.0	0.2	0.2	0.1	0.1	---	---	---
31	1.4	0.3	0.8	---	---	---	0.1	0.0	0.1	---	---	---
MONTH	16.3	0.3	6.9	3.5	0.0	0.7	0.5	0.0	0.1	0.3	0.0	0.1
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	---	---	---	---	---	---	16.2	11.9	14.1
2	---	---	---	---	---	---	---	---	---	17.3	11.9	14.5
3	---	---	---	---	---	---	---	---	---	16.3	12.6	14.8
4	---	---	---	---	---	---	---	---	---	15.6	11.5	13.4
5	---	---	---	---	---	---	---	---	---	11.5	9.9	10.3
6	---	---	---	---	---	---	---	---	---	11.9	9.7	10.6
7	---	---	---	---	---	---	---	---	---	16.9	10.0	13.0
8	---	---	---	---	---	---	---	---	---	16.5	13.8	15.0
9	---	---	---	---	---	---	---	---	---	14.6	12.2	12.8
10	---	---	---	---	---	---	---	---	---	12.3	10.2	11.1
11	---	---	---	---	---	---	---	---	---	10.9	8.2	9.5
12	---	---	---	---	---	---	---	---	---	15.4	9.5	12.0
13	---	---	---	---	---	---	---	---	---	14.9	12.9	13.7
14	---	---	---	---	---	---	---	---	---	14.0	12.6	13.2
15	---	---	---	---	---	---	---	---	---	17.8	12.0	14.6
16	---	---	---	---	---	---	---	---	---	19.1	15.6	17.2
17	---	---	---	---	---	---	7.8	3.6	5.4	18.7	16.7	17.6
18	---	---	---	---	---	---	7.8	5.6	6.6	18.5	16.4	17.5
19	---	---	---	---	---	---	6.1	5.2	5.6	18.4	14.6	16.5
20	---	---	---	---	---	---	6.3	5.2	5.7	16.7	11.7	14.0
21	---	---	---	---	---	---	10.0	5.4	7.4	17.5	14.0	15.7
22	---	---	---	---	---	---	12.8	8.3	10.3	20.7	16.0	17.9
23	---	---	---	---	---	---	14.5	9.9	12.0	19.8	16.9	18.1
24	---	---	---	---	---	---	15.5	12.0	13.7	18.1	16.3	16.8
25	---	---	---	---	---	---	16.0	12.4	14.1	20.7	14.6	17.3
26	---	---	---	---	---	---	16.2	13.3	14.9	21.7	16.8	19.2
27	---	---	---	---	---	---	17.4	14.2	15.6	20.8	17.6	19.5
28	---	---	---	---	---	---	16.1	12.5	14.4	22.6	18.1	20.3
29	---	---	---	---	---	---	14.9	12.5	13.3	21.8	18.3	20.2
30	---	---	---	---	---	---	14.8	11.0	12.6	21.3	16.6	18.6
31	---	---	---	---	---	---	---	---	---	19.5	14.6	16.8
MONTH	---	---	---	---	---	---	17.4	3.6	10.8	22.6	8.2	15.3

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	1,400	1,380	1,380	1,650	1,610	1,640	1,910	1,880	1,900	2,170	2,130	2,150
2	1,410	1,400	1,400	1,690	1,460	1,600	2,030	1,880	1,940	2,230	2,170	2,190
3	1,400	1,370	1,390	1,630	1,460	1,540	2,080	2,030	2,060	2,300	2,210	2,250
4	1,380	1,200	1,330	1,630	1,550	1,580	2,050	2,030	2,030	2,240	2,180	2,200
5	1,360	1,320	1,350	1,630	1,550	1,570	2,140	2,040	2,090	2,260	2,210	2,240
6	1,330	1,230	1,310	1,600	1,570	1,580	2,140	2,110	2,130	2,250	2,210	2,220
7	1,330	1,270	1,300	1,580	1,570	1,580	2,110	2,040	2,060	2,210	2,170	2,190
8	1,410	1,310	1,360	1,590	1,560	1,580	2,090	2,080	2,090	2,170	2,070	2,130
9	1,440	1,410	1,430	1,600	1,580	1,600	2,090	2,060	2,080	2,070	2,040	2,050
10	1,440	1,390	1,440	1,600	1,590	1,590	2,060	2,000	2,020	2,120	2,040	2,080
11	1,460	1,410	1,440	1,610	1,570	1,590	2,000	1,980	2,000	2,230	2,120	2,170
12	1,450	1,430	1,440	1,610	1,570	1,590	2,000	1,970	1,980	2,300	2,230	2,270
13	1,460	1,420	1,440	1,630	1,610	1,620	1,980	1,940	1,960	2,420	2,300	2,360
14	1,460	1,430	1,440	1,640	1,600	1,620	1,970	1,940	1,960	---	---	---
15	1,470	1,450	1,460	1,660	1,630	1,650	1,960	1,940	1,940	---	---	---
16	1,490	1,470	1,480	1,700	1,660	1,680	1,950	1,920	1,930	---	---	---
17	1,490	1,460	1,480	1,720	1,660	1,690	1,960	1,940	1,950	---	---	---
18	1,470	1,450	1,460	1,700	1,650	1,680	1,980	1,950	1,960	---	---	---
19	1,530	1,460	1,510	1,660	1,630	1,640	2,000	1,970	1,990	---	---	---
20	1,530	1,500	1,520	1,660	1,630	1,640	2,020	1,980	2,010	---	---	---
21	1,530	1,510	1,520	1,680	1,640	1,670	2,000	1,980	1,990	---	---	---
22	1,540	1,530	1,540	1,750	1,670	1,710	1,980	1,980	1,980	---	---	---
23	1,550	1,480	1,510	1,770	1,750	1,770	2,060	1,980	2,030	---	---	---
24	1,560	1,500	1,530	1,820	1,770	1,790	2,140	2,060	2,110	---	---	---
25	1,570	1,560	1,560	1,910	1,820	1,850	2,270	2,140	2,220	---	---	---
26	1,580	1,570	1,580	1,980	1,790	1,910	2,320	2,270	2,300	---	---	---
27	1,590	1,570	1,580	1,980	1,920	1,950	2,370	2,310	2,350	---	---	---
28	1,580	1,560	1,570	1,940	1,890	1,930	2,400	2,360	2,380	---	---	---
29	1,570	1,560	1,570	1,890	1,850	1,860	2,370	2,300	2,350	---	---	---
30	1,600	1,570	1,580	1,890	1,850	1,870	2,300	2,170	2,230	---	---	---
31	1,620	1,600	1,610	---	---	---	2,170	2,130	2,140	---	---	---
MONTH	1,620	1,200	1,470	1,980	1,460	1,690	2,400	1,880	2,070	2,420	2,040	2,190
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	1,720	1,700	1,710
2	---	---	---	---	---	---	---	---	---	1,700	1,680	1,690
3	---	---	---	---	---	---	---	---	---	1,690	1,670	1,680
4	---	---	---	---	---	---	---	---	---	1,700	1,680	1,690
5	---	---	---	---	---	---	---	---	---	1,690	1,650	1,670
6	---	---	---	---	---	---	---	---	---	1,720	1,650	1,680
7	---	---	---	---	---	---	---	---	---	1,720	1,710	1,720
8	---	---	---	---	---	---	---	---	---	1,710	1,680	1,700
9	---	---	---	---	---	---	---	---	---	1,690	1,640	1,650
10	---	---	---	---	---	---	---	---	---	1,740	1,650	1,710
11	---	---	---	---	---	---	---	---	---	1,760	1,740	1,750
12	---	---	---	---	---	---	---	---	---	1,770	1,760	1,770
13	---	---	---	---	---	---	---	---	---	1,770	1,730	1,760
14	---	---	---	---	---	---	---	---	---	1,770	1,720	1,730
15	---	---	---	---	---	---	---	---	---	1,850	1,770	1,810
16	---	---	---	---	---	---	---	---	---	1,880	1,850	1,870
17	---	---	---	---	---	---	1,420	1,340	1,390	1,880	1,870	1,870
18	---	---	---	---	---	---	1,440	1,350	1,400	1,880	1,860	1,880
19	---	---	---	---	---	---	1,510	1,400	1,470	1,860	1,840	1,850
20	---	---	---	---	---	---	1,500	1,320	1,370	1,860	1,780	1,820
21	---	---	---	---	---	---	1,410	1,370	1,390	1,810	1,780	1,800
22	---	---	---	---	---	---	1,460	1,380	1,420	1,810	1,790	1,800
23	---	---	---	---	---	---	1,490	1,460	1,480	1,800	1,780	1,790
24	---	---	---	---	---	---	1,540	1,480	1,500	1,780	1,760	1,770
25	---	---	---	---	---	---	1,630	1,540	1,580	1,800	1,750	1,780
26	---	---	---	---	---	---	1,700	1,630	1,670	1,770	1,750	1,760
27	---	---	---	---	---	---	1,760	1,700	1,730	1,760	1,740	1,750
28	---	---	---	---	---	---	1,770	1,760	1,760	1,760	1,730	1,740
29	---	---	---	---	---	---	1,780	1,740	1,760	1,740	1,700	1,720
30	---	---	---	---	---	---	1,750	1,720	1,740	1,720	1,700	1,710
31	---	---	---	---	---	---	---	---	---	1,740	1,710	1,730
MONTH	---	---	---	---	---	---	1,780	1,320	1,550	1,880	1,640	1,750

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.3	8.2	8.5	8.3	8.3	8.2	8.0	7.9	---	---	---	---
2	8.3	8.2	8.5	8.2	8.3	8.2	8.0	7.9	---	---	---	---
3	8.2	8.0	8.3	8.2	8.2	8.2	8.0	7.9	---	---	---	---
4	8.3	8.0	8.3	8.2	8.2	8.2	8.0	8.0	---	---	---	---
5	8.4	8.1	8.4	8.2	8.2	8.2	8.0	7.9	---	---	---	---
6	8.3	8.2	8.4	8.3	8.2	8.1	8.0	7.9	---	---	---	---
7	8.5	8.3	8.4	8.3	8.2	8.1	8.0	7.9	---	---	---	---
8	8.5	8.4	8.4	8.3	8.1	8.1	8.0	7.9	---	---	---	---
9	8.6	8.4	8.4	8.4	8.1	8.1	8.1	8.0	---	---	---	---
10	8.6	8.5	8.4	8.4	8.2	8.1	8.1	8.0	---	---	---	---
11	8.6	8.5	8.4	8.4	8.2	8.1	8.1	8.0	---	---	---	---
12	8.7	8.6	8.4	8.4	8.2	8.1	8.1	8.0	---	---	---	---
13	8.7	8.6	8.4	8.3	8.1	8.1	8.0	8.0	---	---	---	---
14	8.6	8.6	8.4	8.3	8.1	8.1	---	---	---	---	---	---
15	8.6	8.6	8.4	8.3	8.1	8.1	---	---	---	---	---	---
16	8.6	8.6	8.3	8.3	8.2	8.1	---	---	---	---	---	---
17	8.6	8.6	8.4	8.3	8.2	8.1	---	---	---	---	---	---
18	8.6	8.6	8.3	8.3	8.2	8.1	---	---	---	---	---	---
19	8.6	8.5	8.3	8.3	8.1	8.0	---	---	---	---	---	---
20	8.6	8.5	8.3	8.3	8.1	8.0	---	---	---	---	---	---
21	8.6	8.5	8.3	8.3	8.1	8.0	---	---	---	---	---	---
22	8.6	8.5	8.3	8.3	8.0	7.9	---	---	---	---	---	---
23	8.6	8.5	8.4	8.3	8.0	8.0	---	---	---	---	---	---
24	8.6	8.5	8.4	8.3	8.0	8.0	---	---	---	---	---	---
25	8.6	8.5	8.4	8.3	8.0	8.0	---	---	---	---	---	---
26	8.5	8.4	8.3	8.3	8.0	7.9	---	---	---	---	---	---
27	8.4	8.3	8.3	8.2	7.9	7.9	---	---	---	---	---	---
28	8.5	8.4	8.3	8.2	7.9	7.9	---	---	---	---	---	---
29	8.4	8.4	8.3	8.2	7.9	7.8	---	---	---	---	---	---
30	8.4	8.4	8.3	8.2	7.9	7.8	---	---	---	---	---	---
31	8.4	8.3	---	---	8.0	7.9	---	---	---	---	---	---
MONTH	8.7	8.0	8.5	8.2	8.3	7.8	8.1	7.9	---	---	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	8.8	8.7	8.4	8.3	7.8	7.8	8.5	8.4	8.3	8.2
2	---	---	8.8	8.7	8.3	8.2	8.0	7.8	8.4	8.3	8.3	8.1
3	---	---	8.8	8.7	8.2	8.2	8.1	8.0	8.4	8.3	8.3	8.1
4	---	---	8.8	8.7	8.3	8.2	8.2	8.1	8.4	8.3	8.2	8.1
5	---	---	8.8	8.7	8.3	8.2	8.2	8.1	8.3	8.2	8.2	8.0
6	---	---	8.8	8.6	8.3	8.2	8.2	8.1	8.5	8.2	8.2	8.1
7	---	---	8.7	8.6	8.3	8.2	8.2	8.1	8.5	8.4	8.2	8.0
8	---	---	8.7	8.5	8.3	8.2	8.3	8.1	8.5	8.4	8.2	8.1
9	---	---	8.7	8.6	8.3	8.2	8.3	8.2	8.5	8.4	8.2	8.1
10	---	---	8.7	8.5	8.2	8.2</						

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	7.3	4.6	6.1	19.7	17.7	18.6	21.7	20.0	20.7	26.0	23.4	24.4
2	6.7	4.8	6.1	18.8	15.5	17.0	20.7	19.3	19.8	25.2	23.9	24.5
3	5.1	1.5	3.5	16.8	15.5	16.3	20.9	19.1	20.0	26.6	24.2	25.4
4	8.7	3.8	6.7	17.2	15.9	16.5	22.0	20.2	20.9	26.6	24.6	25.6
5	10.3	5.9	7.9	---	---	---	22.2	21.0	21.4	26.0	24.0	25.2
6	11.1	7.7	9.6	17.1	15.9	16.5	21.8	19.7	20.9	24.7	21.9	23.6
7	12.5	10.1	11.1	16.8	15.8	16.2	21.0	19.6	20.3	25.6	21.9	23.7
8	12.5	10.8	11.6	16.9	15.0	15.9	22.2	20.0	21.0	27.2	23.1	25.0
9	13.1	11.9	12.4	17.1	15.6	16.3	22.9	20.4	21.6	28.2	24.2	26.1
10	13.2	12.1	12.9	17.1	14.7	16.0	---	---	---	28.5	25.1	27.0
11	13.2	12.1	12.8	17.9	16.1	17.0	23.6	21.1	22.4	29.4	26.3	28.0
12	14.1	11.3	12.7	17.8	16.7	17.3	23.1	21.5	22.3	29.2	26.5	28.2
13	15.6	13.7	14.6	18.6	16.7	17.4	22.8	21.4	21.9	28.4	25.4	27.1
14	15.4	14.2	14.7	18.5	16.4	17.5	22.9	20.8	21.5	---	---	---
15	14.6	12.8	13.8	19.1	17.4	18.0	23.2	21.1	21.9	---	---	---
16	15.6	14.0	14.7	19.2	18.6	18.9	23.5	21.6	22.5	---	---	---
17	16.4	14.3	15.2	19.6	18.2	18.9	22.9	21.5	22.0	---	---	---
18	15.7	14.2	14.9	18.9	16.9	17.7	22.6	20.6	21.5	---	---	---
19	15.7	14.0	14.9	17.9	17.0	17.4	21.3	19.1	20.0	---	---	---
20	16.2	15.4	15.8	17.6	16.2	16.9	19.8	18.2	19.0	---	---	---
21	15.9	15.0	15.4	17.0	15.2	15.9	19.4	17.3	18.0	---	---	---
22	16.0	15.2	15.6	16.6	15.6	16.0	19.1	16.8	17.8	---	---	---
23	15.9	15.3	15.7	16.6	16.0	16.3	20.3	18.3	19.2	---	---	---
24	16.5	15.9	16.3	18.9	16.4	17.3	22.1	19.7	20.4	---	---	---
25	16.4	15.8	16.2	20.1	18.9	19.4	22.4	20.7	21.5	---	---	---
26	16.2	15.4	15.9	21.4	20.1	20.8	23.4	22.0	22.7	---	---	---
27	16.2	15.2	15.7	21.2	20.0	20.6	23.7	22.6	23.1	---	---	---
28	15.7	15.0	15.4	21.4	20.6	21.0	23.7	22.1	23.1	---	---	---
29	15.3	14.6	15.0	21.0	19.5	20.4	23.6	21.4	22.7	---	---	---
30	16.4	14.6	15.5	20.8	19.2	19.9	23.2	21.2	22.5	---	---	---
31	18.1	16.3	17.2	---	---	---	25.9	22.6	23.7	---	---	---
MONTH	18.1	1.5	13.1	21.4	14.7	17.7	25.9	16.8	21.2	29.4	21.9	25.7
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	---	---	---	---	---	---	15.2	11.5	13.0
2	---	---	---	---	---	---	---	---	---	15.4	10.6	12.3
3	---	---	---	---	---	---	---	---	---	14.5	11.9	13.1
4	---	---	---	---	---	---	---	---	---	12.4	10.0	11.0
5	---	---	---	---	---	---	---	---	---	13.1	10.1	11.5
6	---	---	---	---	---	---	---	---	---	14.5	10.9	12.5
7	---	---	---	---	---	---	---	---	---	14.2	11.1	12.8
8	---	---	---	---	---	---	---	---	---	13.5	9.3	11.2
9	---	---	---	---	---	---	---	---	---	12.0	9.2	10.4
10	---	---	---	---	---	---	---	---	---	11.9	9.7	10.7
11	---	---	---	---	---	---	---	---	---	13.0	10.6	11.6
12	---	---	---	---	---	---	---	---	---	13.2	10.4	11.8
13	---	---	---	---	---	---	---	---	---	12.2	8.9	10.2
14	---	---	---	---	---	---	---	---	---	10.8	8.8	9.7
15	---	---	---	---	---	---	---	---	---	11.4	8.7	9.9
16	---	---	---	---	---	---	---	---	---	10.8	7.2	8.9
17	---	---	---	---	---	---	13.0	11.5	12.2	10.9	6.7	8.7
18	---	---	---	---	---	---	12.0	10.5	11.3	10.9	7.4	9.0
19	---	---	---	---	---	---	12.1	11.6	11.8	10.1	7.8	8.9
20	---	---	---	---	---	---	11.7	11.2	11.4	12.3	9.1	10.5
21	---	---	---	---	---	---	11.6	11.0	11.4	11.2	8.9	10.1
22	---	---	---	---	---	---	11.0	10.3	10.7	11.1	8.0	9.4
23	---	---	---	---	---	---	10.6	9.6	10.0	10.7	7.7	9.3
24	---	---	---	---	---	---	10.7	8.9	9.7	10.0	7.6	8.7
25	---	---	---	---	---	---	14.0	9.5	11.2	12.1	8.5	10.2
26	---	---	---	---	---	---	13.1	10.2	11.8	11.6	8.1	9.9
27	---	---	---	---	---	---	13.8	10.1	11.9	10.5	7.7	9.1
28	---	---	---	---	---	---	13.0	9.2	11.3	10.3	7.3	8.7
29	---	---	---	---	---	---	12.9	10.1	11.5	9.2	6.5	7.9
30	---	---	---	---	---	---	15.9	10.9	13.1	8.4	6.4	7.5
31	---	---	---	---	---	---	---	---	---	11.9	7.4	9.5
MONTH	---	---	---	---	---	---	15.9	8.9	11.4	15.4	6.4	10.3

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS
WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	79	41	61	13	7.0	12	13	9.0	8.8	8.0	4.0	5.6
2	85	33	55	35	10	27	15	11	9.8	9.0	5.0	5.9
3	100	33	52	32	13	23	16	11	11	7.0	5.0	5.6
4	72	30	45	22	15	23	28	8.0	8.9	6.0	5.0	5.8
5	120	23	49	---	---	16	16	8.0	7.8	6.0	4.0	5.4
6	210	17	29	16	12	14	14	7.0	7.7	6.0	4.0	5.2
7	60	17	29	20	12	15	12	7.0	6.9	7.0	4.0	5.3
8	34	19	25	19	12	16	10	7.0	6.1	7.0	4.0	4.9
9	32	17	24	18	13	14	12	6.0	5.8	8.0	4.0	5.6
10	240	16	25	19	14	16	---	---	5.8	8.0	4.0	5.8
11	34	19	28	19	13	15	8.0	5.0	6.4	9.0	4.0	5.0
12	35	22	29	24	14	15	8.0	5.0	6.3	9.0	4.0	5.6
13	43	21	30	26	14	20	8.0	5.0	6.1	8.0	5.0	6.1
14	29	19	27	20	12	14	11	5.0	6.1	---	---	---
15	36	19	24	21	14	17	8.0	5.0	5.7	---	---	---
16	26	15	21	16	12	13	12	5.0	6.2	---	---	---
17	20	14	19	15	10	11	10	5.0	6.4	---	---	---
18	33	15	23	14	11	11	8.0	5.0	6.1	---	---	---
19	23	14	20	14	9.0	9.9	7.0	5.0	5.9	---	---	---
20	30	14	20	21	10	11	18	5.0	6.0	---	---	---
21	21	11	18	24	12	14	8.0	5.0	5.8	---	---	---
22	21	12	18	16	13	12	9.0	5.0	5.8	---	---	---
23	20	10	16	21	13	13	11	5.0	6.7	---	---	---
24	19	9.0	15	18	13	13	8.0	5.0	6.0	---	---	---
25	16	9.0	14	27	11	12	7.0	5.0	5.9	---	---	---
26	22	9.0	15	15	11	11	8.0	5.0	6.2	---	---	---
27	15	8.0	13	14	10	10	8.0	5.0	6.5	---	---	---
28	14	9.0	14	14	9.0	9.6	10	6.0	7.1	---	---	---
29	20	9.0	16	13	9.0	8.8	10	6.0	7.0	---	---	---
30	16	10	16	14	9.0	8.8	8.0	5.0	6.6	---	---	---
31	16	6.0	13	---	---	---	8.0	5.0	6.3	---	---	---
MONTH	240	6.0	26	35	7.0	14	28	5.0	6.8	9.0	4.0	5.5
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	---	---	---	---	---	---	---	---	47
2	---	---	---	---	---	---	---	---	---	---	---	54
3	---	---	---	---	---	---	---	---	---	---	---	53
4	---	---	---	---	---	---	---	---	---	---	---	49
5	---	---	---	---	---	---	---	---	---	---	---	44
6	---	---	---	---	---	---	---	---	---	---	---	35
7	---	---	---	---	---	---	---	---	---	---	---	44
8	---	---	---	---	---	---	---	---	---	---	---	47
9	---	---	---	---	---	---	---	---	---	---	---	46
10	---	---	---	---	---	---	---	---	---	---	---	43
11	---	---	---	---	---	---	---	---	---	---	---	31
12	---	---	---	---	---	---	---	---	---	---	---	36
13	---	---	---	---	---	---	---	---	---	---	---	42
14	---	---	---	---	---	---	---	---	---	---	---	42
15	---	---	---	---	---	---	---	---	---	---	---	46
16	---	---	---	---	---	---	---	---	---	---	---	51
17	---	---	---	---	---	---	---	---	53	---	---	47
18	---	---	---	---	---	---	---	---	53	---	---	49
19	---	---	---	---	---	---	---	---	75	---	---	60
20	---	---	---	---	---	---	---	---	150	---	---	47
21	---	---	---	---	---	---	---	---	87	73	52	60
22	---	---	---	---	---	---	---	---	78	80	47	62
23	---	---	---	---	---	---	---	---	81	65	47	57
24	---	---	---	---	---	---	---	---	83	65	55	61
25	---	---	---	---	---	---	---	---	71	240	47	53
26	---	---	---	---	---	---	---	---	57	67	45	58
27	---	---	---	---	---	---	---	---	54	60	45	51
28	---	---	---	---	---	---	---	---	61	73	53	61
29	---	---	---	---	---	---	---	---	53	73	43	59
30	---	---	---	---	---	---	---	---	42	98	51	65
31	---	---	---	---	---	---	---	---	---	62	30	42
MONTH	---	---	---	---	---	---	---	---	71	240	30	50

LOCATION.--Lat 46°04'30", long 96°18'24", in SE¼ NE¼ sec. 15, T. 130 N., R. 45 W., Wilkin County, Hydrologic Unit 9020101, 2.5 miles north of Nashua on Wilkin County 17.

DRAINAGE AREA.--99.2 mi².

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 2001 through June 2003.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
NOV 2001													
06...	0800	1.5	14	9.7	7.4	1,150	4.5	6.5	0.69	<0.050	<0.050	0.090	<0.010
DEC													
11...	0920	2.5	1.0	11.0	7.4	2,000	0.0	-0.2	1.6	<0.050	<0.050	0.350	<0.010
JAN 2002													
15...	0920	1.3	8.0	12.6	7.6	2,510	-5.0	-0.3	2.1	<0.050	<0.050	0.530	<0.010
FEB													
12...	0915	1.0	7.0	10.7	7.6	2,320	-6.1	-0.3	2.1	<0.050	<0.050	0.120	<0.010
APR													
16...	0915	18	29	8.5	7.7	1,240	22.0	15.1	1.9	<0.050	0.060	0.890	0.020
MAY													
14...	0905	31	32	11.4	8.3	1,690	10.5	11.8	1.9	<0.050	<0.050	2.10	0.060
JUN													
04...	0915	3.4	88	7.4	8.1	1,700	13.3	13.0	2.2	0.090	0.090	<0.050	<0.010
JUL													
09...	1000	87	40	4.6	7.5	658	26.2	24.5	1.4	0.120	0.120	1.30	0.120
23...	0910	35	18	7.7	7.8	1,080	21.0	20.0	2.0	0.180	0.180	0.070	0.050
AUG													
06...	0920	12	48	6.7	7.8	1,190	17.7	20.0	2.2	0.090	0.080	0.210	0.020
20...	0900	6.2	41	7.5	7.8	1,280	18.5	16.4	1.9	<0.050	<0.050	0.170	<0.010
SEP													
10...	0915	1.8	36	6.5	7.9	1,380	17.0	19.1	1.9	0.080	0.110	0.160	<0.010
24...	0855	E.01	30	9.5	8.1	1,530	9.1	9.7	1.9	<0.050	<0.050	<0.050	<0.010

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, M-FC 0.7u MF col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diameter percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
NOV 2001								
06...	0.084	0.143	<10	15k	66k	7.59	98	14
DEC								
11...	0.100	0.157	--	--	--	6.17	91	7
JAN 2002								
15...	0.036	0.135	--	--	--	30.7	99	8
FEB								
12...	0.022	0.168	--	--	--	63.7	94	25
APR								
16...	0.081	0.210	E4k	31k	37k	25.6	98	29
MAY								
14...	0.056	0.136	40k	35k	88	4.91	96	33
JUN								
04...	0.119	0.325	560	520	285	17.2	100	80
JUL								
09...	0.393	0.546	300k	600	2,900	8.05	87	49
23...	0.278	0.422	83k	140	1,240	18.8	96	64
AUG								
06...	0.204	0.369	<2	220	740	13.9	100	99
20...	0.161	0.315	--	--	2,060k	18.0	100	85
SEP								
10...	0.216	0.376	270	240	940	24.9	100	68
24...	0.152	0.322	62	100	184	24.8	98	57

Remark codes used in this table:

< -- Less than
E -- Estimated value

Value qualifier codes used in this table:

k -- Counts outside acceptable range

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
DEC 2002 10...	0900	0.38	11	13.4	7.6	2,240	-4.3	-0.2	2.1	0.080	0.090	0.180	<0.010
MAR 2003 25...	1630	2.6	8.0	--	8.0	920	7.5	1.9	2.1	0.500	0.500	0.490	0.040
APR 15...	1540	0.52	30	12.3	8.4	1,070	20.3	15.7	1.4	<0.050	<0.050	<0.050	<0.010
MAY 20...	0850	12	60	9.2	8.0	1,710	8.0	10.6	1.8	<0.050	<0.050	<0.050	<0.010
JUN 03...	1345	5.0	48	10.1	8.2	1,580	23.8	20.5	2.0	<0.050	0.050	<0.050	<0.010
JUN 17...	1615	3.3	66	9.3	8.3	1,630	29.5	30.0	2.4	<0.050	<0.050	<0.050	<0.010

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, M-FC 0.7u MF col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
DEC 2002 10...	0.024	0.095	--	--	--	8.65	92	23
MAR 2003 25...	0.005	0.229	--	--	--	4.71	94	9
APR 15...	0.040	0.131	140	140	95	12.1	95	14
MAY 20...	0.035	0.130	E100k	110	161	9.00	99	43
JUN 03...	0.089	0.210	E300k	190	124	18.7	100	35
JUN 17...	0.122	0.278	1,100	1,800	1,680	37.2	100	38

Remark codes used in this table:

< -- Less than

E -- Estimated value

Value qualifier codes used in this table:

k -- Counts outside acceptable range

05051000 RABBIT RIVER AT CAMPBELL, MN

LOCATION.--Lat 46°05'40", long 96°24'40", in SE ¼ SE ¼ sec. 2, T. 130 N., R. 46 W., Wilkin County, Hydrologic Unit 9020101, at Campbell.

DRAINAGE AREA.--221 mi².

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 2001 through June 2003.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
NOV 2001													
06...	0945	E22	12	11.0	7.9	1,520	7.4	7.0	1.1	<0.050	<0.050	<0.050	<0.010
DEC 12...	1000	2.7	3.0	13.4	7.7	2,110	0.2	0.2	1.1	<0.050	<0.050	0.060	<0.010
JAN 2002													
15...	1050	1.6	14	10.6	7.4	2,460	-8.1	0.1	1.7	0.100	0.110	0.440	<0.010
FEB 12...	1040	E1.2	21	12.4	7.4	2,400	-5.0	0.0	2.7	<0.050	<0.050	0.130	<0.010
MAR 19...	0945	--	9.0	11.0	7.5	1,160	1.0	-0.2	1.1	0.170	0.180	0.750	0.020
APR 16...	1135	24	21	9.0	7.8	1,080	26.4	15.3	1.4	0.060	0.070	1.10	0.030
MAY 14...	1100	57	28	10.7	8.1	1,690	14.5	11.6	2.0	0.110	0.170	2.50	0.090
JUN 04...	1055	2.6	49	5.1	7.7	1,490	17.0	15.0	2.0	0.290	0.290	0.290	0.050
JUL 09...	1130	170	59	4.7	7.7	950	28.0	25.0	1.8	0.090	0.090	1.30	0.110
23...	1045	38	17	6.6	7.7	1,070	20.0	21.2	1.9	0.090	0.070	0.100	0.030
AUG 06...	1030	9.4	27	6.1	7.8	1,230	19.5	21.4	1.9	0.080	0.070	0.180	0.020
20...	0940	E6.2	27	6.4	7.8	1,220	19.2	18.2	1.9	<0.050	<0.050	0.150	<0.010
SEP 10...	1015	E5.2	9.0	4.4	7.7	1,300	20.7	19.8	1.5	0.070	0.120	<0.050	<0.010

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coliform, M-FC 0.7u MF col/100 mL (31625)	Fecal streptococci KF MF, col/100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
NOV 2001								
06...	0.051	0.129	<10	23k	28k	24.4	94	12
DEC 12...	0.024	0.087	--	--	--	12.3	66	41
JAN 2002								
15...	0.045	0.138	--	--	--	30.7	71	55
FEB 12...	0.008	0.334	--	--	--	17.9	98	9
MAR 19...	0.104	0.170	--	--	--	6.31	99	9
APR 16...	0.101	0.216	10k	45k	100	32.7	98	21
MAY 14...	0.074	0.174	E4k	40k	180	12.4	98	49
JUN 04...	0.180	0.342	100k	390	680	19.8	100	44
JUL 09...	0.274	0.528	520	460	3,100	33.8	96	80
23...	0.227	0.400	<5k	200	786	36.1	94	69
AUG 06...	0.187	0.350	230k	190	700	32.8	98	34
20...	0.150	0.284	460	600	1,480	21.8	99	57
SEP 10...	0.227	0.329	150	190	4,100	14.5	99	14

Remark codes used in this table:

< -- Less than

E -- Estimated value

Value qualifier codes used in this table:

k -- Counts outside acceptable range

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate + nitrite water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
MAY 2003													
20...	1040	12	110	7.8	8.0	1,880	13.8	13.2	2.1	<0.050	0.060	0.050	0.010
JUN													
03...	1655	4.7	53	6.5	7.7	1,800	21.7	18.0	2.0	<0.050	<0.050	<0.050	<0.010
17...	1700	E3.3	20	6.0	8.1	1,810	30.6	25.0	2.2	<0.050	<0.050	<0.050	<0.010

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coliform, M-FC 0.7u MF col/100 mL (31625)	Fecal streptococci KF MF, col/100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diameter percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
MAY 2003								
20...	0.044	0.212	E28k	E190k	E100k	23.6	98	104
JUN								
03...	0.085	0.215	E140k	150	440	25.4	99	53
17...	0.142	0.269	120	260	248	34.6	90	34

Remark codes used in this table:

< -- Less than

E -- Estimated value

Value qualifier codes used in this table:

k -- Counts outside acceptable range

LOCATION.--Lat 46°06'43", long 96°29'36", in SE¼ SE¼ sec. 31, T. 131 N., R. 46 W., Wilkin County, Hydrologic Unit 09020101, 4 miles east of Campbell on U.S. Highway 75.

DRAINAGE AREA.--298 mi².

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 2001 through June 2003.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 deg C (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
NOV 2001													
06...	1035	7.7	30	10.4	7.8	1,230	9.0	6.8	1.1	<0.050	<0.050	<0.050	<0.010
DEC													
11...	1530	3.0	4.0	13.2	7.7	1,720	4.5	0.3	0.89	<0.050	<0.050	<0.050	<0.010
JAN 2002													
16...	0930	2.0	12	12.9	7.5	2,520	-6.9	0.0	1.5	0.050	<0.050	0.250	<0.010
FEB													
13...	0915	0.90	5.0	12.5	7.4	2,620	-0.8	-0.2	2.3	<0.050	<0.050	<0.050	<0.010
MAR													
19...	1650	6.0	0.0	16.5	7.8	1,180	<-5.0	0.0	1.0	<0.050	<0.050	0.430	0.010
APR													
16...	1710	35	42	11.8	8.0	970	28.8	19.4	1.6	<0.050	<0.050	1.20	0.050
MAY													
14...	1550	81	24	13.9	8.1	1,690	23.2	15.3	1.8	<0.050	0.060	2.70	0.110
JUN													
04...	1650	4.0	98	4.9	7.8	1,030	23.0	20.0	2.3	0.460	0.450	0.420	0.080
JUL													
10...	0950	648	130	5.1	7.7	535	19.8	23.9	1.4	0.100	0.100	0.590	0.060
23...	1650	61	41	5.7	7.6	964	18.0	21.4	2.1	0.070	0.080	0.150	0.030
AUG													
06...	1615	16	77	8.7	8.2	1,210	23.9	21.6	2.6	<0.050	<0.050	<0.050	<0.010
20...	1505	1.3	83	7.9	8.1	1,200	24.7	20.5	2.0	<0.050	<0.050	<0.050	<0.010
SEP													
10...	1545	E7.0	63	6.4	8.0	1,110	25.4	21.6	2.2	0.090	0.150	<0.050	<0.010

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coliform, M-FC col/100 mL (31625)	Fecal streptococci KF MF, col/100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
NOV 2001								
06...	0.134	0.213	37k	83k	50k	19.1	98	18
DEC								
11...	0.061	0.115	--	--	--	19.8	99	7
JAN 2002								
16...	0.034	0.109	--	--	--	30.2	73	63
FEB								
13...	<0.005	0.210	--	--	--	12.9	--	--
MAR								
19...	0.080	0.153	--	--	--	11.6	96	12
APR								
16...	0.105	0.257	E5k	25k	20k	41.3	98	38
MAY								
14...	0.093	0.182	26k	12k	66	9.68	99	24
JUN								
04...	0.330	0.582	25k	66k	231	34.5	100	79
JUL								
10...	0.028	0.493	900	700k	3,000	12.5	98	125
23...	0.320	0.561	<5k	50k	1,420	43.6	99	90
AUG								
06...	0.193	0.492	--	--	400	36.5	100	104
20...	0.179	0.391	E2k	E2k	155	46.0	99	59
SEP								
10...	0.357	0.622	200k	86	780	46.7	88	103

Remark codes used in this table:

< -- Less than

E -- Estimated value

Value qualifier codes used in this table:

k -- Counts outside acceptable range

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 deg C (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate + nitrite water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
MAY 2003													
20...	1650	17	85	9.8	8.3	2,000	17.6	14.7	2.2	<0.050	<0.050	<0.050	0.010
JUN 04...	1230	E6.0	54	8.4	8.2	1,970	22.8	19.5	2.3	<0.050	<0.050	<0.050	<0.010

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, M-FC 0.7u MF col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diameter percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
MAY 2003								
20...	0.025	0.192	<10	<10	13k	56.4	100	73
JUN 04...	0.107	0.306	3k	20k	14k	32.3	97	49

Remark codes used in this table:

< -- Less than

E -- Estimated value

Value qualifier codes used in this table:

k -- Counts outside acceptable range

LOCATION.--Lat 46°23'55", long 96°39'08", in NW¹/₄ NW¹/₄ sec. 30, T. 134 N., R. 47 W., Wilkin County, Hydrologic Unit 09020104, 2 miles north of Brushvale.

DRAINAGE AREA.--19 mi².

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April through May 2002.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
APR 2002													
15...	1155	3.5	0.0	11.4	7.5	515	24.0	15.3	0.84	<0.050	<0.050	0.900	0.020
MAY													
13...	1135	3.8	0.0	13.7	7.6	1,410	18.0	13.2	1.5	<0.050	<0.050	1.80	0.020

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, M-FC 0.7u MF col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
APR 2002								
15...	0.146	0.214	E1k	6k	21k	13.0	98	2
MAY								
13...	0.085	0.132	E1k	19k	57	5.22	91	4

Remark codes used in this table:

< -- Less than

E -- Estimated value

Value qualifier codes used in this table:

k -- Counts outside acceptable range

LOCATION.--Lat 46°23'55", long 96°39'08", in NE¼ NE¼ sec. 24, T. 134 N., R. 48 W., Wilkin County, Hydrologic Unit 09020104, 2 miles south of Kent on Wilkin County 20.

DRAINAGE AREA.--54 mi².

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 2001 through July 2003.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
NOV 2001													
06...	1230	4.4	2.0	10.3	7.5	955	10.0	6.3	0.76	<0.050	0.060	0.620	<0.010
DEC 10...	1515	0.30	3.0	9.6	7.3	1,800	-2.9	0.0	0.93	<0.050	0.070	0.090	<0.010
JAN 2002													
14...	1530	0.17	6.0	11.7	7.5	2,160	1.0	-0.2	1.0	<0.050	0.070	0.190	<0.010
MAR 18...	1310	2.1	9.0	10.4	7.5	647	-2.0	-0.3	1.9	0.290	0.310	1.60	0.060
APR 15...	1340	12	2.0	10.7	7.6	661	23.0	14.0	1.1	<0.050	<0.050	0.410	0.020
MAY 13...	1255	8.4	15	11.0	7.8	1,150	16.5	13.0	1.4	<0.050	<0.050	0.950	0.010
JUN 03...	1135	--	0.0	17.0	8.4	1,680	20.0	17.5	1.3	<0.050	<0.050	<0.050	<0.010
24...	1600	0.23	0.0	<20.0	8.8	831	33.5	33.5	0.98	<0.050	<0.050	<0.050	<0.010
JUL 08...	1430	5.3	40	6.0	7.7	776	29.5	26.5	1.6	0.070	0.070	0.480	0.030
22...	1115	2.1	6.0	8.6	7.6	981	21.5	22.5	1.6	0.250	0.240	0.200	0.090
SEP 09...	1520	1.1	6.0	10.8	7.4	805	19.3	21.9	1.1	<0.050	<0.050	0.180	0.010

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, M-FC 0.7u MF col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diameter percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
NOV 2001								
06...	0.217	0.249	150k	60k	727	3.05	99	5
DEC 10...	0.122	0.153	--	--	--	1.53	13	21
JAN 2002								
14...	0.139	0.165	--	--	--	1.84	11	38
MAR 18...	0.423	0.491	--	--	--	3.21	98	13
APR 15...	0.122	0.215	E2k	E2k	50	8.31	86	9
MAY 13...	0.073	0.093	18k	28k	106	3.14	99	7
JUN 03...	0.225	0.278	<1k	22	65	4.17	92	5
24...	0.306	0.356	380k	160k	720	2.95	95	5
JUL 08...	0.381	0.499	2,100	800	7,400	15.8	99	20
22...	0.666	0.797	200k	--	364	10.8	100	33
SEP 09...	0.560	0.647	110	120	1,320	11.5	99	9

Remark codes used in this table:

< -- Less than
E -- Estimated value

Value qualifier codes used in this table:

k -- Counts outside acceptable range

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
OCT 2002													
07...	1030	0.10	0.0	16.7	7.8	1,580	16.0	10.0	0.79	<0.050	0.050	<0.050	<0.010
NOV													
04...	1120	0.78	5.0	14.0	7.6	1,440	4.8	0.8	0.92	<0.050	<0.050	<0.050	<0.010
MAR 2003													
24...	1125	5.1	21	10.2	7.2	654	13.5	6.1	2.0	0.430	0.430	1.10	0.090
APR													
14...	1130	0.78	30	16.5	8.3	1,100	21.0	18.0	--	<0.050	<0.050	<0.050	<0.050
MAY													
19...	1140	14	10	11.4	8.0	1,300	11.6	15.2	1.6	<0.050	<0.050	0.870	0.020
JUN													
02...	1235	3.9	10	8.9	8.0	1,330	19.5	17.5	1.6	<0.050	<0.050	0.170	0.010
16...	1140	3.9	5.0	7.8	8.0	1,380	29.5	22.7	1.6	<0.050	<0.050	<0.050	<0.010
JUL													
09...	1555	2.6	54	6.9	7.3	1,100	19.2	18.5	1.6	0.090	0.160	0.460	0.020
21...	1530	1.2	6.0	14.8	8.2	1,140	23.8	23.3	1.5	<0.050	<0.050	0.170	0.010

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coli-form, M-FC col/100 mL (31625)	Fecal streptococci KF MF, col/100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diameter percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
OCT 2002								
07...	0.123	0.181	20	24	20	0.640	99	9
NOV								
04...	0.127	0.161	100k	2k	6k	0.960	87	30
MAR 2003								
24...	0.237	0.324	--	--	--	3.20	97	13
APR								
14...	0.119	0.150	<2	<2	6k	2.40	100	1
MAY								
19...	0.076	0.100	60	52	176	48.0	97	6
JUN								
02...	0.293	0.332	60k	81	147	2.96	99	8
16...	0.435	0.480	140k	160	413	3.23	99	59
JUL								
09...	0.783	0.921	1,900k	1,800k	>2,000	3.66	101	31
21...	0.594	0.640	220	120	194	--	99	12

Remark codes used in this table:

< -- Less than

Value qualifier codes used in this table:

k -- Counts outside acceptable range

DRAINAGE AREA.--54 mi².

PERIOD OF RECORD.--September 2001 through September 2003.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum recorded daily discharge, 768 ft³/s, July 11, 2002; minimum recorded daily discharge (estimated), 0.53 ft³/s, Mar. 10, 2003.

[illegible]

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	36	6.7	e2.9	e4.4	3.4	79	15	5.8	3.4	3.1	50
2	1.9	22	6.4	e2.8	e4.5	2.4	56	14	5.2	3.1	2.9	30
3	1.9	13	5.9	e3.4	e4.5	e4.0	30	12	4.8	3.2	3.0	19
4	2.0	21	6.4	e3.6	e4.6	e4.0	20	10	4.5	3.4	3.0	13
5	2.2	18	7.4	e3.7	e4.7	e4.0	16	9.6	4.2	3.4	2.9	9.8
6	2.1	14	7.9	e3.8	e5.8	e3.6	17	9.2	3.9	3.4	2.5	7.3
7	2.1	11	8.2	e4.0	e6.0	e3.3	35	9.1	3.6	5.5	2.5	5.6
8	2.4	9.8	7.0	e3.8	e5.7	e2.6	79	38	3.6	50	2.1	4.4
9	2.7	8.3	5.6	e4.0	e5.2	e2.3	68	105	3.7	36	2.3	3.3
10	8.0	7.2	4.8	e3.9	e5.1	1.3	64	119	4.0	282	2.3	3.2
11	12	6.1	6.2	e4.0	e7.8	0.55	70	91	3.9	768	2.1	3.1
12	8.3	5.3	8.2	e3.9	e12	e0.83	52	70	3.6	581	1.8	2.3
13	4.5	5.1	8.0	e4.0	e15	e0.75	46	52	3.9	457	1.7	2.7
14	4.1	4.9	7.7	e3.8	e18	e1.3	42	39	3.8	293	1.5	3.0
15	4.3	4.6	7.8	e3.7	e22	e0.83	35	29	3.6	147	1.6	3.9
16	4.2	4.3	9.7	e3.6	9.5	e1.3	29	22	3.4	73	1.4	4.3
17	4.8	4.4	9.6	e3.6	16	e1.1	26	17	3.4	42	1.6	4.1
18	4.9	4.3	9.7	e3.5	e32	e8.3	27	14	3.9	29	1.7	3.5
19	4.7	4.1	7.5	e3.7	e32	35	32	12	4.9	22	1.3	4.3
20	5.3	3.8	4.5	e3.8	e30	49	27	10	13	15	1.2	5.0
21	4.2	4.7	e3.9	4.4	e28	38	24	8.4	5.2	12	1.3	2.8
22	4.3	4.5	e3.9	e3.8	e26	33	22	7.5	4.3	9.8	1.4	2.7
23	4.5	4.3	e3.4	e3.8	e22	34	18	6.5	6.4	8.1	1.3	2.5
24	5.2	4.5	e3.5	e3.7	e17	33	15	6.3	8.1	7.3	1.3	2.9
25	5.1	5.0	3.5	e3.8	e15	31	14	5.8	7.0	6.4	1.2	3.5
26	2.0	5.1	e3.3	e4.0	4.5	35	12	5.4	7.9	5.8	1.2	4.0
27	1.2	2.6	e3.4	e4.0	e8.7	44	12	5.2	7.7	5.4	1.0	3.4
28	1.0	1.1	e3.3	e4.0	e8.7	89	16	4.7	6.5	4.5	1.1	3.2
29	14	0.97	e3.7	e4.0	---	126	16	6.3	5.2	4.1	111	2.7
30	19	5.6	e3.6	e4.3	---	121	15	8.6	3.9	3.7	275	3.5
31	24	---	e3.5	e4.3	---	92	---	6.5	---	3.4	111	---
TOTAL	168.9	245.57	184.2	117.6	374.7	805.86	1,014	768.1	152.9	2,890.9	549.3	213.0
MEAN	5.45	8.19	5.94	3.79	13.4	26.0	33.8	24.8	5.10	93.3	17.7	7.10
MAX	24	36	9.7	4.4	32	126	79	119	13	768	275	50
MIN	1.0	0.97	3.3	2.8	4.4	0.55	12	4.7	3.4	3.1	1.0	2.3
AC-FT	335	487	365	233	743	1,600	2,010	1,520	303	5,730	1,090	422

e Estimated

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	6.5	2.7	e2.1	e0.92	e0.68	e4.6	10	12	229	3.3	1.2
2	5.4	6.4	1.5	e1.9	e1.00	e0.65	e4.1	9.1	11	133	3.0	1.2
3	4.4	5.8	2.8	e1.9	e1.0	e0.64	e3.9	8.5	10	71	2.7	1.1
4	6.6	4.8	0.93	e1.8	e1.1	e0.58	e3.9	8.8	9.8	35	2.7	0.99
5	8.2	4.6	1.7	e1.8	e1.2	e0.56	5.9	12	8.5	22	2.5	1.3
6	11	4.9	2.5	e1.8	e1.3	e0.53	6.1	18	10	15	2.5	1.2
7	11	6.2	2.7	e1.7	e1.4	e0.53	5.4	25	8.3	10	2.3	1.4
8	5.9	4.9	2.2	e1.7	e1.4	e0.53	5.2	24	9.2	9.1	2.3	1.8
9	5.9	4.7	e2.5	e1.7	e1.4	e0.54	5.6	33	13	13	2.4	2.2
10	11	4.9	e2.5	e1.6	e1.5	e0.53	6.1	64	13	128	2.4	2.2
11	12	4.0	e2.3	e1.5	e1.5	e0.56	6.0	57	11	224	2.2	2.5
12	14	5.0	e2.4	e1.4	e1.5	e0.54	6.0	57	9.0	220	1.9	1.9
13	14	3.9	e2.2	e1.3	e1.3	e0.61	6.5	42	11	164	1.8	1.8
14	10	4.1	e2.3	e1.4	e1.4	e0.63	7.2	48	9.2	90	1.7	2.0
15	10	3.1	e2.3	e1.3	e1.3	e0.65	7.6	52	7.5	30	1.9	2.7
16	11	2.8	e2.3	e1.2	e1.3	e3.3	16	38	8.4	15	2.0	4.6
17	12	3.6	e2.3	e1.2	e1.2	e11	166	33	30	7.9	1.9	4.4
18	14	5.0	e2.3	e1.2	e1.1	e14	241	30	72	6.3	1.8	---
19	15	4.7	e2.3	e1.1	e1.1	e21	234	34	19	6.7	1.6	---
20	13	4.6	e2.3	e1.1	e0.94	e26	241	63	12	7.7	1.6	---
21	11	4.8	e2.3	e1.0	e0.83	e24	142	45	6.4	7.5	1.3	---
22	11	4.7	e2.3	e0.97	e0.80	e20	94	44	13	6.8	1.2	---
23	10	4.2	e2.3	e0.98	e0.80	e17	57	37	21	7.5	1.4	---
24	9.4	3.0	2.1	e0.92	e0.77	e14	36	29	55	6.8	1.3	---
25	11	3.0	2.1	e0.94	e0.76	e12	26	28	486	6.0	1.4	---
26	9.2	3.4	e2.1	e0.94	e0.74	e9.6	20	23	630	5.0	1.3	---
27	8.2	3.6	e2.3	e0.98	e0.74	e8.0	16	19	479	4.6	1.3	---
28	7.9	3.0	e2.2	e0.97	e0.73	e6.8	14	17	622	4.7	1.3	---
29	8.4	3.8	e2.1	e0.93	---	e6.0	12	15	561	4.3	1.1	---
30	8.2	3.0	e1.9	e0.94	---	e5.5	11	14	361	3.7	0.88	---
31	6.4	---	e2.0	e0.95	---	e4.3	---	13	---	3.4	1.1	---
TOTAL	299.4	131.0	68.73	41.22	31.03	211.26	1,410.1	950.4	3,528.3	1,497.0	58.08	---
MEAN	9.66	4.37	2.22	1.33	1.11	6.81	47.0	30.7	118	48.3	1.87	---
MAX	15	6.5	2.8	2.1	1.5	26	241	64	630	229	3.3	---
MIN	4.3	2.8	0.93	0.92	0.73	0.53	3.9	8.5	6.4	3.4	0.88	---
AC-FT	594	260	136	82	62	419	2,800	1,890	7,000	2,970	115	---

e Estimated

WATER-QUALITY RECORDS

PERIOD OF RECORD.--September 2001 to September 2003.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April 2002 to September 2003.

SPECIFIC CONDUCTANCE: April 2002 to September 2003.

PH: April 2002 to September 2003.

DISSOLVED OXYGEN: April 2002 to September 2003.

TURBIDITY: April 2002 to September 2003.

INSTRUMENTATION.--Water-quality monitor.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 29.4°C, June 30, 2002; minimum recorded, 0.1°C, on many days during winter months.

SPECIFIC CONDUCTANCE: Maximum recorded, 1,300 microsiemens, December 4, 2002; minimum recorded, 204 microsiemens, August 29, 2002.

PH: Maximum recorded, 8.6 units, May 2, 2002, and August 5, 2002; minimum recorded, 6.8 units, September 8, 2003.

DISSOLVED OXYGEN: Maximum recorded, 16.5 mg/L, May 25, 2002; minimum recorded, 2.3 mg/L, July 2, 2002

TURBIDITY: Maximum recorded, 1,300 NTU's, June 24-25, 2003; minimum recorded, 7.0 NTU's, September 13, 2003.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 THROUGH SEPTEMBER 2001

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
SEP 2001													
13...	0900	--	14	7.8	8.2	666	11.0	14.9	0.41	<0.050	0.070	<0.050	<0.010
25...	0905	1.8	12	8.3	8.2	678	9.5	11.2	0.38	<0.050	<0.050	<0.050	<0.010

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, M-FC 0.7u MF col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diameter percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
SEP 2001								
13...	0.052	0.067	630	530	385	0.680	99	20
25...	0.046	0.073	330	270	116	1.06	96	18

Remark codes used in this table:

< -- Less than

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
NOV 2001													
06...	1410	13	10	11.1	7.7	1,000	10.5	6.1	0.73	<0.050	<0.050	0.470	<0.010
DEC 10...	1345	4.0	5.0	11.2	7.5	1,030	-2.3	0.0	1.6	<0.050	<0.050	0.150	<0.010
JAN 2002													
14...	1425	3.9	8.0	10.6	7.6	918	2.0	-0.3	0.36	0.070	0.080	0.300	<0.010
FEB 11...	1300	3.5	28	10.1	7.6	720	11.8	-0.2	0.42	0.080	0.220	0.370	<0.010
MAR 18...	1305	0.95	20	10.6	7.3	543	-3.5	-0.3	1.1	0.200	0.200	1.20	0.050
APR 15...	1430	33	41	8.9	7.6	700	22.8	13.3	1.6	0.070	0.070	0.520	0.020
MAY 13...	1545	46	44	12.3	8.0	1,040	18.5	12.4	1.4	<0.050	<0.050	1.40	0.030
JUN 03...	1230	4.8	20	8.4	8.2	917	20.0	16.5	0.89	<0.050	<0.050	<0.050	<0.010
24...	1330	8.2	52	5.0	7.9	723	35.0	25.6	0.96	0.140	0.150	0.130	0.020
JUL 08...	1710	58	280	5.4	7.5	432	29.5	25.5	2.0	0.080	0.090	0.900	0.060
22...	1305	9.2	35	5.4	7.7	948	21.5	23.0	1.5	0.140	0.190	0.260	0.060
AUG 05...	1250	2.7	21	6.7	8.0	788	28.0	21.0	0.70	0.070	0.070	0.170	0.010
19...	1220	1.1	9.0	7.7	7.9	697	24.5	17.0	0.39	<0.050	<0.050	0.060	<0.010
SEP 09...	1345	3.2	20	5.3	7.7	746	21.4	23.2	0.75	<0.050	<0.050	0.210	0.020
23...	1335	2.4	18	8.6	8.0	722	10.6	11.9	0.45	<0.050	<0.050	0.110	<0.010

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, MF, water, col/100 mL (31633)	Fecal coliform, M-FC 0.7u MF col/100 mL (31625)	Fecal streptococci KF MF, col/100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
NOV 2001								
06...	0.148	0.191	92k	660	94k	3.75	33	12
DEC 10...	0.021	0.042	--	--	--	1.03	62	54
JAN 2002								
14...	0.033	0.055	--	--	--	0.870	88	23
FEB 11...	0.040	0.074	--	--	--	1.11	--	--
MAR 18...	0.212	0.286	--	--	--	1.17	99	29
APR 15...	0.088	0.187	82k	32k	183	9.25	99	45
MAY 13...	0.066	0.127	50k	43k	144	5.89	99	33
JUN 03...	0.034	0.085	140k	88	168	6.37	100	20
24...	0.087	0.168	330k	260k	640	5.21	100	39
JUL 08...	0.249	0.698	3,200	4,000	8,900	12.7	94	43
22...	0.253	0.399	400k	--	166	5.67	99	76
AUG 05...	0.084	0.195	100k	9k	360	3.16	100	47
19...	0.052	0.100	27k	33	368	1.42	99	39
SEP 09...	0.233	0.303	100	92	700	3.88	99	36
23...	0.040	0.084	160	440	184	2.10	100	19

Remark codes used in this table:
 < -- Less than

Value qualifier codes used in this table:
 k -- Counts outside acceptable range

TEMPERATURE, WATER, DEGREES CELSIUS
 WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
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27	---	---	---	---	---	---	---	---	---	---	---	---
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30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	11.7	9.2	10.1
2	---	---	---	---	---	---	---	---	---	10.5	6.2	8.5
3	---	---	---	---	---	---	---	---	---	13.2	8.0	10.5
4	---	---	---	---	---	---	---	---	---	13.6	10.6	12.4
5	---	---	---	---	---	---	---	---	---	13.1	9.8	11.1
6	---	---	---	---	---	---	---	---	---	11.1	9.0	10.0
7	---	---	---	---	---	---	---	---	---	10.4	7.3	8.5
8	---	---	---	---	---	---	---	---	---	7.4	5.8	6.2
9	---	---	---	---	---	---	---	---	---	5.8	4.5	5.1
10	---	---	---	---	---	---	---	---	---	10.4	4.4	6.7
11	---	---	---	---	---	---	---	---	---	10.4	9.4	9.8
12	---	---	---	---	---	---	---	---	---	12.2	8.2	9.8
13	---	---	---	---	---	---	---	---	---	15.0	10.0	12.2
14	---	---	---	---	---	---	---	---	---	16.0	11.6	13.8
15	---	---	---	---	---	---	---	---	---	17.5	13.9	15.6
16	---	---	---	---	---	---	18.5	14.6	16.3	16.4	11.8	13.6
17	---	---	---	---	---	---	18.0	14.3	15.8	13.4	10.7	12.3
18	---	---	---	---	---	---	15.8	8.9	12.6	14.3	9.8	12.1
19	---	---	---	---	---	---	8.9	5.4	6.8	15.0	10.2	12.8
20	---	---	---	---	---	---	9.2	5.3	7.0	16.6	11.4	14.1
21	---	---	---	---	---	---	9.2	6.6	7.7	17.0	13.1	15.4
22	---	---	---	---	---	---	7.9	5.5	6.6	16.7	14.0	15.5
23	---	---	---	---	---	---	13.1	6.4	9.1	16.5	10.7	13.8
24	---	---	---	---	---	---	13.1	8.3	10.7	13.2	8.8	11.0
25	---	---	---	---	---	---	8.3	4.4	5.8	15.7	12.5	13.9
26	---	---	---	---	---	---	7.1	3.9	5.5	17.8	15.2	16.3
27	---	---	---	---	---	---	7.1	5.2	5.8	20.5	15.8	17.9
28	---	---	---	---	---	---	6.1	4.1	5.1	23.0	18.8	20.7
29	---	---	---	---	---	---	10.0	5.2	7.3	23.4	20.0	21.7
30	---	---	---	---	---	---	12.2	8.2	10.2	23.1	20.3	21.9
31	---	---	---	---	---	---	---	---	---	23.0	20.2	21.7
MONTH	---	---	---	---	---	---	18.5	3.9	8.8	23.4	4.4	13.1

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
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31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	971	953	961
2	---	---	---	---	---	---	---	---	---	990	971	980
3	---	---	---	---	---	---	---	---	---	1,020	970	992
4	---	---	---	---	---	---	---	---	---	1,000	964	985
5	---	---	---	---	---	---	---	---	---	982	959	973
6	---	---	---	---	---	---	---	---	---	979	957	968
7	---	---	---	---	---	---	---	---	---	987	930	959
8	---	---	---	---	---	---	---	---	---	1,000	818	934
9	---	---	---	---	---	---	---	---	---	946	841	902
10	---	---	---	---	---	---	---	---	---	1,050	946	1,020
11	---	---	---	---	---	---	---	---	---	1,040	945	1,000
12	---	---	---	---	---	---	---	---	---	1,020	954	984
13	---	---	---	---	---	---	---	---	---	1,050	1,020	1,040
14	---	---	---	---	---	---	---	---	---	1,080	1,050	1,070
15	---	---	---	---	---	---	---	---	---	1,090	1,080	1,080
16	---	---	---	---	---	---	748	700	725	1,080	1,070	1,070
17	---	---	---	---	---	---	783	748	767	1,080	1,070	1,080
18	---	---	---	---	---	---	839	776	806	1,090	1,070	1,080
19	---	---	---	---	---	---	854	816	836	1,090	1,060	1,080
20	---	---	---	---	---	---	861	854	857	1,090	1,060	1,080
21	---	---	---	---	---	---	880	861	871	1,090	1,060	1,070
22	---	---	---	---	---	---	894	880	887	1,070	1,070	1,070
23	---	---	---	---	---	---	914	894	904	1,080	1,060	1,070
24	---	---	---	---	---	---	925	910	914	1,060	1,020	1,040
25	---	---	---	---	---	---	934	915	925	1,020	1,010	1,010
26	---	---	---	---	---	---	953	924	939	1,020	1,010	1,010
27	---	---	---	---	---	---	947	928	941	1,010	981	994
28	---	---	---	---	---	---	976	939	960	1,010	969	990
29	---	---	---	---	---	---	996	939	955	976	940	962
30	---	---	---	---	---	---	1,000	941	967	940	855	880
31	---	---	---	---	---	---	---	---	---	963	882	931
MONTH	---	---	---	---	---	---	1,000	700	884	1,090	818	1,010

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
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16	---	---	---	---	---	---	---	---	---	---	---	---
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21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
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30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	8.5	8.4	8.2	8.1	8.0	7.9	8.3	8.2	7.7	7.6
2	---	---	8.6	8.4	8.2	8.1	8.0	7.9	8.3	8.2	7.8	7.7
3	---	---	8.5	8.4	8.3	8.2	7.9	7.9	8.4	8.3	7.9	7.8
4	---	---	8.5	8.3	8.3	8.2	7.9	7.9	8.4	8.3	7.9	7.9
5	---	---	8.5	8.3	8.3	8.2	8.0	7.9	8.6	8.3	8.0	7.9
6	---	---	8.4	8.3	8.2	8.1	8.0	7.9	8.5	8.4	8.0	7.9
7	---	---	8.4	8.3	8.2	8.1	7.9	7.8	8.5	8.4	8.0	7.9
8	---	---	8.4	8.1	8.2	8.0	7.9	7.6	8.5	8.4	8.1	8.0
9	---	---	8.1	8.0	8.2	8.0	7.7	7.7	8.4	8.3	8.1	8.0
10	---	---	8.1	8.0	8.0	7.9	7.8	7.4	8.4	8.3	8.1	8.1
11	---	---	8.0	8.0	8.0	7.8	7.5	7.4	8.4	8.3	8.2	8.0
12	---	---	8.1	8.0	8.1	7.9	7.4	7.4	8.4	8.3	8.2	8.1
13	---	---	8.2	8.1	8.2	8.0	7.5	7.4	8.4	8.3	8.2	8.1
14	---	---	8.2	8.1	8.2	8.1	7.5	7.4	8.4	8.3	8.2	8.1
15	---	---	8.2	8.2	8.3	8.1	7.6	7.5	8.4	8.3	8.2	8.1
16	8.2	8.1	8.3	8.2	8.3	8.1	7.7	7.5	8.4	8.2	8.2	

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
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4	---	---	---	---	---	---	---	---	---	---	---	---
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10	---	---	---	---	---	---	---	---	---	---	---	---
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17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
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27	---	---	---	---	---	---	---	---	---	---	---	---
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31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
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10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	11.5	9.1	10.1
15	---	---	---	---	---	---	---	---	---	11.6	8.6	9.9
16	---	---	---	---	---	---	9.5	8.3	9.0	13.1	8.8	10.7
17	---	---	---	---	---	---	11.0	8.6	9.6	13.5	9.9	11.5
18	---	---	---	---	---	---	11.5	9.9	10.3	14.8	10.3	12.2
19	---	---	---	---	---	---	14.3	11.5	13.2	14.6	10.2	12.1
20	---	---	---	---	---	---	15.2	13.8	14.5	14.8	9.7	11.9
21	---	---	---	---	---	---	14.8	13.0	13.7	14.8	8.9	11.6
22	---	---	---	---	---	---	15.6	14.2	14.7	13.7	8.5	10.9
23	---	---	---	---	---	---	---	---	---	13.8	8.2	10.7
24	---	---	---	---	---	---	---	---	---	16.5	11.3	13.7
25	---	---	---	---	---	---	---	---	---	15.0	10.7	13.0
26	---	---	---	---	---	---	---	---	---	13.6	9.3	11.6
27	---	---	---	---	---	---	---	---	---	14.0	9.3	11.6
28	---	---	---	---	---	---	---	---	---	11.8	8.3	10.2
29	---	---	---	---	---	---	---	---	---	10.7	7.6	9.0
30	---	---	---	---	---	---	---	---	---	10.9	6.6	8.5
31	---	---	---	---	---	---	---	---	---	10.9	7.0	8.7
MONTH	---	---	---	---	---	---	15.6	8.3	12.1	16.5	6.6	11.0

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS
WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	---	---	e190
2	---	---	---	---	---	---	---	---	---	---	---	e160
3	---	---	---	---	---	---	---	---	---	---	---	e110
4	---	---	---	---	---	---	---	---	---	---	---	e94
5	---	---	---	---	---	---	---	---	---	---	---	e87
6	---	---	---	---	---	---	---	---	---	---	---	e97
7	---	---	---	---	---	---	---	---	---	---	---	e110
8	---	---	---	---	---	---	---	---	---	---	---	e120
9	---	---	---	---	---	---	---	---	---	---	---	e130
10	---	---	---	---	---	---	---	---	---	---	---	e140
11	---	---	---	---	---	---	---	---	---	---	---	e99
12	---	---	---	---	---	---	---	---	---	---	---	e86
13	---	---	---	---	---	---	---	---	---	---	---	e69
14	---	---	---	---	---	---	---	---	---	44	23	32
15	---	---	---	---	---	---	---	---	---	38	20	27
16	---	---	---	---	---	---	48	34	41	31	19	26
17	---	---	---	---	---	---	48	36	42	25	16	21
18	---	---	---	---	---	---	62	39	49	24	15	20
19	---	---	---	---	---	---	93	49	70	820	17	170
20	---	---	---	---	---	---	54	38	47	830	20	160
21	---	---	---	---	---	---	49	39	44	350	22	97
22	---	---	---	---	---	---	52	44	48	210	34	61
23	---	---	---	---	---	---	63	45	55	140	48	68
24	---	---	---	---	---	---	110	53	81	79	45	60
25	---	---	---	---	---	---	230	110	160	290	58	92
26	---	---	---	---	---	---	320	140	210	290	91	140
27	---	---	---	---	---	---	320	210	260	350	140	240
28	---	---	---	---	---	---	430	220	330	---	---	e210
29	---	---	---	---	---	---	---	---	e270	---	---	e150
30	---	---	---	---	---	---	---	---	e230	---	---	e110
31	---	---	---	---	---	---	---	---	---	---	---	e83
MONTH	---	---	---	---	---	---	430	34	130	830	15	110

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED
WATER YEAR OCTOBER 2001 THROUGH SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	e63	65	53	58	66	21	39	130	69	100
2	---	---	e31	62	50	56	79	14	53	69	43	58
3	---	---	e22	71	50	59	39	14	23	52	35	44
4	25	14	18	63	53	60	49	21	30	44	30	38
5	27	14	20	74	47	60	40	25	31	39	27	34
6	25	16	20	74	40	50	41	26	33	29	24	27
7	21	14	16	350	41	85	44	23	33	27	22	24
8	31	16	21	740	160	340	34	20	27	33	20	25
9	23	13	17	510	160	260	32	20	26	28	21	23
10	20	11	14	890	160	400	30	21	26	50	20	29
11	16	9.4	12	300	110	190	33	20	26	46	20	30
12	27	12	16	110	46	66	30	18	24	45	18	29
13	22	12	16	46	39	43	30	18	24	44	22	29
14	28	11	15	84	41	47	28	18	23	40	21	30
15	25	12	17	98	34	45	29	18	24	31	21	25
16	35	12	16	160	37	70	38	17	23	39	22	29
17	47	11	17	220	55	130	43	26	31	40	21	28
18	47	16	20	150	54	83	28	15	22	28	17	22
19	120	17	32	250	69	140	25	18	22	31	19	24
20	75	24	49	110	57	72	26	20	23	38	27	31
21	76	44	53	94	54	65	30	19	24	36	23	28
22	52	32	40	67	51	61	27	19	23	35	19	27
23	59	32	40	69	49	58	28	19	23	37	20	29
24	53	26	36	61	43	51	26	16	21	38	24	27
25	62	26	47	60	40	49	22	15	18	26	21	24
26	62	38	47	54	38	46	20	13	17	27	18	23
27	87	44	62	52	38	44	21	12	16	32	19	24
28	100	64	85	48	32	40	33	12	16	35	17	25
29	120	57	83	100	32	54	710	15	220	34	17	27
30	67	51	57	74	33	49	450	230	320	36	18	26
31	---	---	---	44	20	34	230	130	180	---	---	---
MONTH	120	9.4	33	890	20	92	710	12	46	130	17	31
YEAR	890	9.4	68									

e Estimated

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
OCT 2002													
07...	1200	10	16	10.6	7.8	700	15.6	7.7	0.29	<0.050	<0.050	<0.050	<0.010
NOV													
04...	1330	4.5	12	13.4	7.8	1,000	5.5	0.1	0.52	<0.050	<0.050	<0.050	<0.010
DEC													
09...	1315	2.5	5.0	10.7	7.5	932	0.5	0.0	0.32	<0.050	<0.050	0.120	<0.010
JAN 2003													
13...	1335	1.3	12	11.7	7.0	928	-17.0	-3.0	--	<0.050	0.050	0.270	<0.010
FEB													
10...	1430	1.5	4.2	8.2	7.1	864	-14.3	-0.3	0.28	0.090	0.090	0.260	<0.010
MAR													
24...	1245	14	20	11.5	7.5	597	13.4	0.1	1.4	0.310	0.320	0.690	0.040
APR													
14...	1315	6.8	20	9.1	8.0	822	21.0	15.0	--	<0.050	<0.050	0.060	<0.050
MAY													
19...	1440	28	55	8.3	8.0	1,150	11.5	14.7	1.4	<0.050	<0.050	0.420	<0.010
JUN													
02...	1315	11	52	6.8	8.2	1,070	21.0	18.2	1.4	0.050	0.060	0.160	<0.010
16...	1310	8.8	110	5.2	8.2	939	30.0	24.0	--	--	--	--	--
JUL													
09...	1420	15	120	6.2	7.6	939	19.6	20.8	1.5	0.070	0.140	0.290	0.040
21...	1400	8.2	50	5.7	7.9	986	22.2	23.6	1.2	<0.050	<0.050	0.200	0.020
AUG													
05...	1010	2.5	21	5.6	8.0	803	26.5	22.5	0.56	0.050	<0.050	0.090	<0.010
19...	1400	1.6	12	4.9	7.7	734	34.3	27.1	0.58	0.060	0.070	<0.050	<0.010
SEP													
03...	1500	1.0	16	7.1	7.9	715	21.5	18.7	0.53	<0.050	<0.050	<0.050	<0.010
18...	0930	2.3	21	6.6	7.6	665	9.0	15.8	0.58	0.060	0.100	0.380	<0.010

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coliform, M-FC 0.7u MF col/100 mL (31625)	Fecal streptococci KF MF, col/100 mL (31673)	Chlorophyll a phytoplankton, acid m, ug/L (32211)	Suspnd. sediment, sieve diameter percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
OCT 2002								
07...	0.025	0.062	140	140	31k	4.34	99	13
NOV								
04...	0.016	0.038	8k	41	21	1.15	86	44
DEC								
09...	0.014	0.028	--	--	--	0.530	93	16
JAN 2003								
13...	0.018	0.034	--	--	--	1.11	78	94
FEB								
10...	0.027	0.042	--	--	--	--	--	--
MAR								
24...	0.119	0.206	--	--	--	1.51	99	29
APR								
14...	0.030	0.090	62	48	60	5.15	99	107
MAY								
19...	0.058	0.128	88	180	490	10.9	99	34
JUN								
02...	0.117	0.206	80k	120	310	<0.460	97	58
16...	--	--	E700k	140	357	5.93	100	66
JUL								
09...	0.249	0.370	>1,600	>1,200	>2,000	2.14	100	69
21...	0.166	0.251	230	160	367	2.65	100	42
AUG								
05...	0.083	0.137	160	270	233	3.94	100	31
19...	0.110	0.154	120	250	>1,000k	2.54	94	15
SEP								
03...	0.094	0.153	300	170	263	3.88	99	19
18...	0.102	0.186	800	7,900k	8,000k	--	100	33

Remark codes used in this table:

< -- Less than
 E -- Estimated value
 > -- Greater than

Value qualifier codes used in this table:

k -- Counts outside acceptable range

TEMPERATURE, WATER, DEGREES CELSIUS
 WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	13.3	12.4	12.9	0.7	0.4	0.5	0.4	0.1	0.2	0.1	0.1	0.1
2	12.4	10.8	11.7	0.7	0.3	0.5	0.3	0.1	0.2	0.1	0.1	0.1
3	10.8	9.7	10	0.5	0.3	0.4	0.2	0.1	0.1	0.1	0.1	0.1
4	10.0	9.4	9.7	0.6	0.3	0.4	0.2	0.1	0.1	0.1	0.1	0.1
5	9.5	8.9	9.3	0.6	0.4	0.5	0.1	0.1	0.1	0.1	0.1	0.1
6	9.3	8.6	8.9	0.8	0.3	0.6	0.2	0.1	0.1	0.1	0.1	0.1
7	8.6	7.4	8.0	1.3	0.5	0.9	0.2	0.1	0.2	0.1	0.1	0.1
8	9.2	8.2	8.8	2.2	1.0	1.6	0.2	0.1	0.1	0.1	0.1	0.1
9	8.3	7.5	8.0	2.6	1.3	1.9	0.2	0.1	0.2	0.1	0.1	0.1
10	9.1	7.7	8.1	2.1	1.2	1.8	0.2	0.1	0.2	0.1	0.1	0.1
11	10.7	9.1	9.9	1.2	0.5	0.7	0.2	0.1	0.1	0.1	0.1	0.1
12	10.8	9.3	10.1	0.7	0.4	0.5	0.2	0.1	0.1	0.1	0.1	0.1
13	9.3	6.8	7.7	0.5	0.3	0.4	0.2	0.1	0.1	0.1	0.1	0.1
14	7.6	5.9	6.7	0.5	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1
15	7.3	6.3	6.9	0.5	0.2	0.3	0.2	0.1	0.2	0.1	0.1	0.1
16	6.3	5.5	6.1	0.4	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1
17	5.7	5.1	5.4	0.6	0.2	0.4	0.1	0.1	0.1	0.1	0.1	0.1
18	5.1	4.8	4.9	0.5	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1
19	4.8	4.0	4.4	0.5	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1
20	4.0	3.1	3.4	0.6	0.2	0.4	0.1	0.1	0.1	0.1	0.1	0.1
21	3.1	2.3	2.6	0.7	0.4	0.6	0.1	0.1	0.1	0.1	0.1	0.1
22	2.9	2.2	2.6	1.0	0.7	0.8	0.1	0.1	0.1	0.1	0.1	0.1
23	2.9	2.2	2.4	0.8	0.4	0.6	0.1	0.1	0.1	0.1	0.1	0.1
24	2.3	1.6	1.9	0.4	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1
25	2.1	1.6	1.8	0.4	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1
26	2.8	1.9	2.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
27	3.3	2.4	2.9	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1
28	4.1	3.2	3.6	0.4	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1
29	4.1	3.3	3.9	0.4	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1
30	3.3	1.0	2.2	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1
31	1.0	0.4	0.6	---	---	---	0.1	0.1	0.1	0.1	0.1	0.1
MONTH	13.3	0.4	6.1	2.6	0.1	0.6	0.4	0.1	0.1	0.1	0.1	0.1
FEBRUARY			MARCH			APRIL			MAY			
1	0.1	0.1	0.1	---	---	---	---	---	---	15.0	11.4	13.3
2	0.1	0.1	0.1	---	---	---	---	---	---	15.4	11.6	13.7
3	0.1	0.1	0.1	---	---	---	---	---	---	15.5	12.6	14.2
4	0.1	0.1	0.1	---	---	---	---	---	---	15.7	12.0	13.9
5	0.1	0.1	0.1	---	---	---	---	---	---	12.0	10.2	10.7
6	0.1	0.1	0.1	---	---	---	---	---	---	10.4	9.5	9.9
7	0.1	0.1	0.1	---	---	---	---	---	---	14.5	9.2	11.2
8	0.1	0.1	0.1	---	---	---	---	---	---	15.0	13.7	14.3
9	0.1	0.1	0.1	---	---	---	---	---	---	14.9	11.2	12.4
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	14.6	12.7	13.7	---	---	---
16	---	---	---	---	---	---	12.7	5.5	9.9	---	---	---
17	---	---	---	---	---	---	5.5	1.7	3.4	---	---	---
18	---	---	---	---	---	---	5.6	3.9	4.8	---	---	---
19	---	---	---	---	---	---	5.3	4.2	4.7	---	---	---
20	---	---	---	---	---	---	5.7	4.7	5.0	---	---	---
21	---	---	---	---	---	---	9.7	4.6	6.5	---	---	---
22	---	---	---	---	---	---	12.3	7.5	9.7	19.2	14.1	16.1
23	---	---	---	---	---	---	13.5	9.8	11.5	19.1	16.0	17.2
24	---	---	---	---	---	---	14.7	11.6	13.0	17.5	15.0	15.8
25	---	---	---	---	---	---	15.8	12.4	13.9	18.9	13.6	15.6
26	---	---	---	---	---	---	16.4	12.9	14.7	19.8	16.0	18.0
27	---	---	---	---	---	---	16.8	13.9	15.5	19.8	17.2	18.4
28	---	---	---	---	---	---	16.3	11.5	13.3	20.8	17.1	18.7
29	---	---	---	---	---	---	13.7	11.3	12.2	21.0	18.3	19.7
30	---	---	---	---	---	---	14.0	10.3	12.0	21.0	16.0	18.5
31	---	---	---	---	---	---	---	---	---	17.6	13.9	15.4
MONTH	0.1	0.1	0.1	---	---	---	16.8	1.7	10.2	21.0	9.2	15.1

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	738	700	717	962	861	886	922	891	909	765	755	762
2	738	688	709	980	894	925	926	879	888	782	764	770
3	693	673	683	953	902	925	1,260	893	1,040	809	782	798
4	674	659	667	964	921	940	1,300	1,150	1,230	787	767	778
5	675	652	662	963	914	927	1,150	1,050	1,100	767	759	763
6	662	622	646	933	915	921	1,050	961	1,000	759	755	757
7	658	637	648	932	863	897	961	915	929	788	749	756
8	695	658	683	874	778	839	933	906	917	763	749	751
9	732	694	720	874	783	846	922	887	900	752	746	748
10	724	718	720	840	813	828	895	859	879	754	744	747
11	751	723	740	834	812	825	859	840	849	777	754	764
12	756	749	752	903	834	869	852	838	847	826	777	797
13	760	756	758	873	803	831	851	811	833	911	826	880
14	762	755	758	879	827	855	813	792	803	903	888	891
15	763	753	756	882	840	862	797	779	789	890	868	881
16	767	755	764	915	877	893	792	778	781	868	843	853
17	755	738	748	963	913	933	797	780	789	843	817	834
18	741	725	734	1,040	955	1,000	815	774	787	817	813	815
19	735	725	728	955	924	934	784	771	777	820	813	816
20	730	708	720	935	879	910	784	763	774	813	802	808
21	718	708	714	882	871	876	763	752	755	802	794	797
22	742	715	734	875	832	851	772	752	764	812	793	801
23	763	740	752	832	822	825	786	769	780	818	812	816
24	761	748	757	887	829	840	802	781	791	824	816	821
25	772	758	766	923	874	900	829	801	812	826	818	824
26	776	768	771	988	867	935	844	825	835	818	812	815
27	789	768	777	940	867	911	825	818	820	813	805	811
28	784	773	779	1,020	940	991	833	821	827	805	774	791
29	800	784	792	1,060	962	1,030	822	789	805	774	761	765
30	823	797	808	967	913	945	793	767	779	768	761	766
31	861	823	837	---	---	---	767	752	758	762	748	755
MONTH	861	622	735	1,060	778	898	1,300	752	856	911	744	798
FEBRUARY			MARCH			APRIL			MAY			
1	748	734	740	---	---	---	---	---	---	993	970	986
2	742	734	736	---	---	---	---	---	---	997	961	981
3	800	742	775	---	---	---	---	---	---	992	960	978
4	794	768	779	---	---	---	---	---	---	1,000	962	983
5	844	782	826	---	---	---	---	---	---	993	964	979
6	817	803	811	---	---	---	---	---	---	1,030	961	994
7	857	817	841	---	---	---	---	---	---	1,060	1,010	1,030
8	856	832	850	---	---	---	---	---	---	1,070	1,060	1,070
9	832	802	809	---	---	---	---	---	---	1,120	1,010	1,070
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	827	794	820	---	---	---
16	---	---	---	---	---	---	925	768	812	---	---	---
17	---	---	---	---	---	---	1,060	576	784	---	---	---
18	---	---	---	---	---	---	720	673	694	---	---	---
19	---	---	---	---	---	---	865	685	766	---	---	---
20	---	---	---	---	---	---	844	736	796	---	---	---
21	---	---	---	---	---	---	931	844	888	---	---	---
22	---	---	---	---	---	---	969	931	949	1,120	1,060	1,100
23	---	---	---	---	---	---	1,010	969	993	1,120	1,090	1,110
24	---	---	---	---	---	---	1,010	1,010	1,010	1,130	1,120	1,120
25	---	---	---	---	---	---	1,010	1,010	1,010	1,120	1,070	1,090
26	---	---	---	---	---	---	1,010	1,000	1,000	1,110	1,090	1,100
27	---	---	---	---	---	---	1,010	1,000	1,000	1,100	1,090	1,100
28	---	---	---	---	---	---	1,010	994	1,000	1,100	1,090	1,100
29	---	---	---	---	---	---	1,010	996	1,000	1,100	1,080	1,090
30	---	---	---	---	---	---	998	986	995	1,100	1,060	1,080
31	---	---	---	---	---	---	---	---	---	1,090	1,060	1,080
MONTH	857	734	796	---	---	---	1,060	576	907	1,130	960	1,050

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.3	8.2	8.2	8.2	8.1	8.0	7.9	7.8	7.9	7.8	---	---
2	8.3	8.2	8.2	8.1	8.1	8.0	7.9	7.8	7.9	7.9	---	---
3	8.3	8.2	8.2	8.1	8.1	8.0	7.9	7.8	7.9	7.9	---	---
4	8.3	8.2	8.2	8.1	8.0	7.9	7.9	7.9	8.0	7.9	---	---
5	8.2	8.1	8.2	8.1	7.9	7.9	7.9	7.9	8.0	7.9	---	---
6	8.2	8.1	8.2	8.1	7.9	7.8	7.9	7.9	7.9	7.9	---	---
7	8.2	8.1	8.2	8.1	7.8	7.8	7.9	7.9	7.9	7.9	---	---
8	8.2	8.2	8.2	8.1	7.8	7.8	8.0	7.9	7.9	7.9	---	---
9	8.2	8.2	8.1	8.0	8.0	7.8	8.0	7.9	7.9	7.9	---	---
10	8.2	8.1	8.1	8.0	8.0	8.0	8.0	7.9	---	---	---	---
11	8.2	8.1	8.2	8.1	8.0	7.9	8.0	7.9	---	---	---	---
12	8.2	8.1	8.2	8.1	8.0	8.0	8.0	7.9	---	---	---	---
13	8.2	8.1	8.2	8.1	8.0	8.0	7.9	7.9	---	---	---	---
14	8.2	8.2	8.2	8.1	8.0	8.0	8.0	7.9	---	---	---	---
15	8.2	8.1	8.1	8.1	8.0	8.0	7.9	7.9	---	---	---	---
16	8.1	8.1	8.1	8.1	8.0	8.0	7.9	7.9	---	---	---	---
17	8.2	8.1	8.1	8.0	8.0	8.0	7.9	7.9	---	---	---	---
18	8.2	8.1	8.1	8.0	8.0	8.0	7.9	7.9	---	---	---	---
19	8.2	8.1	8.1	8.0	8.0	8.0	7.9	7.9	---	---	---	---
20	8.3	8.2	8.1	8.1	8.0	8.0	7.9	7.9	---	---	---	---
21	8.3	8.2	8.1	8.1	8.0	8.0	7.9	7.8	---	---	---	---
22	8.3	8.2	8.2	8.1	8.0	8.0	7.8	7.8	---	---	---	---
23	8.3	8.2	8.2	8.2	8.0	8.0	7.8	7.8	---	---	---	---
24	8.3	8.3	8.2	8.2	8.0	8.0	7.8	7.8	---	---	---	---
25	8.3	8.2	8.2	8.1	8.0	7.9	7.8	7.8	---	---	---	---
26	8.2	8.2	8.2	8.1	7.9	7.8	7.8	7.8	---	---	---	---
27	8.2	8.1	8.2	8.1	7.9	7.8	7.8	7.8	---	---	---	---
28	8.2	8.2	8.1	8.0	7.9	7.8	7.8	7.8	---	---	---	---
29	8.2	8.1	8.1	8.0	7.9	7.8	7.8	7.8	---	---	---	---
30	8.2	8.1	8.1	8.0	7.9	7.8	7.8	7.8	---	---	---	---
31	8.2	8.2	---	---	7.9	7.8	7.9	7.8	---	---	---	---
MONTH	8.3	8.1	8.2	8.0	8.1	7.8	8.0	7.8	8.0	7.8	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	8.3	8.1	8.3	8.2	7.6	7.5	8.1	8.0	8.1	7.9
2	---	---	8.4	8.1	8.3	8.2	7.6	7.5	8.1	8.0	8.1	8.0
3	---	---	8.4	8.1	8.3	8.2	7.6	7.6	8.1	8.1	8.2	7.8
4	---	---	8.3	8.0	8.3	8.2	7.7	7.6	8.1	8.0	8.2	7.8
5	---	---	8.2	8.0	8.3	8.2	7.7	7.7	---	---	8.2	7.3
6	---	---	8.2	8.0	8.3	8.2	7.8	7.7	8.1	8.0	8.0	7.1
7	---	---	8.2	8.0	8.2	8.2	7.8	7.7	8.0	7.9	7.9	7.2
8	---	---	8.2	8.1	8.3	8.2	7.8	7.8	8.0	7.9	7.	

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	8.3	7.7	8.0	14.3	13.0	13.7	14.0	13.5	13.7	12.2	10.9	11.5
2	8.1	7.6	7.9	14.7	13.1	13.8	14.8	13.7	14.1	12.1	10.9	11.4
3	8.8	8.1	8.5	14.5	13.2	13.8	15.2	13.3	14.2	12.6	11.2	11.8
4	9.3	8.3	8.8	14.5	13.2	13.8	13.3	12.7	13.1	12.5	11.2	11.8
5	8.6	8.2	8.4	14.5	13.4	14.0	12.7	12.0	12.2	12.1	11.0	11.6
6	9.6	8.6	9.1	14.2	13.4	13.8	12.2	11.9	12.1	11.9	11.1	11.5
7	10.2	8.9	9.6	14.6	13.5	13.9	12.2	11.6	11.9	12.0	11.1	11.5
8	10.0	9.3	9.8	14.0	12.8	13.6	11.8	11.4	11.6	12.8	11.1	11.8
9	9.7	9.2	9.4	13.3	12.6	12.9	11.9	11.4	11.7	13.6	11.4	12.3
10	9.5	8.6	8.9	13.4	12.5	12.9	12.0	11.3	11.6	13.6	11.5	12.4
11	8.7	7.7	8.0	14.0	12.8	13.5	12.2	11.4	11.9	13.2	11.5	12.2
12	8.1	7.1	7.5	14.5	13.3	13.9	12.6	11.8	12.2	13.1	11.8	12.2
13	9.7	7.5	8.2	14.4	13.6	14.0	12.7	12.1	12.4	12.9	12.2	12.6
14	10.3	9.1	9.7	14.4	13.7	14.1	12.8	12.0	12.5	13.1	11.6	12.5
15	9.9	8.4	8.8	15.0	13.9	14.5	13.2	11.9	12.6	11.6	10.4	11.2
16	9.0	8.6	8.8	15.3	14.1	14.6	13.4	12.1	12.8	10.4	10.0	10.3
17	9.8	8.8	9.5	14.6	14.0	14.4	13.0	12.2	12.6	10.3	9.7	10.1
18	10.3	9.5	10	14.6	13.5	14.0	12.6	11.6	11.9	10.2	9.3	9.7
19	10.6	9.9	10.3	14.4	13.4	13.9	11.8	11.3	11.6	9.6	8.9	9.2
20	11.7	10.3	10.8	14.5	13.5	13.9	11.9	11.3	11.6	9.2	8.5	8.8
21	12.2	11.1	11.6	14.1	13.2	13.7	11.5	11.0	11.3	8.9	8.1	8.5
22	12.7	11.6	12.1	14.0	13.1	13.5	11.8	11.1	11.4	8.8	8.2	8.5
23	12.9	11.6	12.3	14.3	13.4	13.9	12.0	11.4	11.7	8.7	7.9	8.3
24	12.9	12.0	12.5	14.2	13.6	13.9	12.1	11.6	11.8	8.8	8.0	8.3
25	13.4	12.2	12.7	14.2	13.8	13.9	12.3	11.8	12.0	8.8	8.3	8.5
26	12.9	11.9	12.6	14.9	14.1	14.5	12.3	12.0	12.1	8.7	8.3	8.4
27	12.8	11.6	12.1	15.5	14.0	14.6	12.2	11.6	11.9	8.6	8.2	8.4
28	12.5	11.2	11.9	15.0	13.8	14.4	12.1	11.2	11.6	8.4	7.9	8.1
29	11.8	10.6	11.3	14.9	13.6	14.3	11.8	11.1	11.4	8.1	7.6	7.8
30	12.6	11.2	11.9	14.5	13.3	13.9	11.6	10.8	11.2	8.3	8.0	8.1
31	14.3	12.1	13.4	---	---	---	12.1	10.7	11.3	8.3	8.0	8.1
MONTH	14.3	7.1	10.1	15.5	12.5	13.9	15.2	10.7	12.1	13.6	7.6	10.2
FEBRUARY			MARCH			APRIL			MAY			
1	8.3	7.7	8.0	---	---	---	---	---	---	13.5	9.6	11.6
2	8.3	7.9	8.1	---	---	---	---	---	---	14.4	9.2	11.7
3	8.6	7.8	8.2	---	---	---	---	---	---	13.9	8.9	11.5
4	9.4	8.4	8.9	---	---	---	---	---	---	12.9	8.2	9.9
5	10.0	8.9	9.6	---	---	---	---	---	---	12.3	9.3	10.5
6	8.9	8.3	8.6	---	---	---	---	---	---	12.3	10.1	11.1
7	9.4	8.1	8.7	---	---	---	---	---	---	13.0	10.2	11.3
8	10.0	9.1	9.5	---	---	---	---	---	---	11.9	9.0	10.2
9	10.2	9.4	9.7	---	---	---	---	---	---	10.3	9.3	9.7
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	10.1	8.7	9.5	---	---	---
16	---	---	---	---	---	---	10.7	8.6	9.6	---	---	---
17	---	---	---	---	---	---	11.4	10.0	10.8	---	---	---
18	---	---	---	---	---	---	10.0	9.4	9.8	---	---	---
19	---	---	---	---	---	---	10.0	9.8	9.9	---	---	---
20	---	---	---	---	---	---	10.0	9.9	10	---	---	---
21	---	---	---	---	---	---	10.1	9.4	9.9	---	---	---
22	---	---	---	---	---	---	9.4	8.7	9.1	11.2	8.6	9.9
23	---	---	---	---	---	---	9.0	8.4	8.7	10.6	7.9	9.1
24	---	---	---	---	---	---	9.0	8.3	8.6	10.0	8.0	8.7
25	---	---	---	---	---	---	9.0	8.4	8.7	9.6	8.7	9.2
26	---	---	---	---	---	---	9.3	8.6	8.9	9.5	8.1	8.6
27	---	---	---	---	---	---	9.6	8.5	9.0	9.2	7.9	8.4
28	---	---	---	---	---	---	11.0	8.9	9.7	8.4	7.8	8.1
29	---	---	---	---	---	---	11.5	9.6	10.4	8.4	7.6	7.9
30	---	---	---	---	---	---	13.1	10.1	11.6	8.3	7.3	7.7
31	---	---	---	---	---	---	---	---	---	9.4	8.3	8.8
MONTH	10.2	7.7	8.8	---	---	---	13.1	8.3	9.6	14.4	7.3	9.7

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS
WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	32	16	27	27	16	21	15	12	14	14	8.9	11
2	41	24	31	24	18	21	16	12	13	13	8.8	11
3	65	24	31	23	17	20	53	12	28	16	8.8	11
4	68	23	35	20	12	16	19	14	17	13	8.7	10
5	42	20	27	18	12	14	14	11	12	13	8.7	11
6	110	19	43	17	12	14	14	9.5	11	15	7.8	11
7	45	21	31	17	12	14	12	9.2	11	15	8.6	11
8	42	23	32	30	12	21	12	9.0	10	16	8.6	12
9	31	21	25	35	17	27	12	10	11	15	8.5	11
10	37	22	28	24	16	20	16	8.9	12	14	8.5	11
11	32	19	25	26	16	22	18	8.9	13	15	9.3	11
12	24	15	21	22	15	18	17	7.9	12	15	11	12
13	30	15	19	27	14	20	18	7.8	12	14	9.5	12
14	40	18	24	21	12	17	14	8.8	12	19	11	13
15	46	21	32	26	15	18	16	8.7	13	16	11	13
16	30	19	24	21	13	17	14	8.7	12	17	11	14
17	32	21	25	17	11	14	15	9.6	12	15	10	12
18	42	25	31	17	10	13	16	8.6	12	18	11	14
19	30	23	26	16	12	14	15	8.6	11	20	13	15
20	54	23	30	15	9.0	11	14	8.5	10	18	13	15
21	33	23	28	14	8.1	12	14	9.4	11	18	12	14
22	37	27	31	14	9.5	11	19	8.4	12	18	14	16
23	42	28	33	14	10	12	15	8.4	11	19	13	16
24	66	36	48	18	11	13	13	7.4	9.9	21	12	17
25	47	29	35	20	11	14	14	8.3	11	19	12	16
26	37	30	33	18	11	14	16	8.3	12	21	14	17
27	35	26	28	20	14	17	14	8.2	11	21	13	17
28	30	20	25	17	13	15	14	9.1	11	22	13	16
29	36	19	24	14	8.5	11	14	9.1	11	23	14	17
30	24	17	20	16	9.9	13	15	9.0	12	24	13	17
31	23	17	20	---	---	---	13	9.0	11	26	15	19
MONTH	110	15	29	35	8.1	16	53	7.4	12	26	7.8	14
FEBRUARY			MARCH			APRIL			MAY			
1	21	15	18	---	---	e16	---	---	e23	37	26	32
2	20	15	18	---	---	e16	---	---	e23	42	24	32
3	26	14	18	---	---	e16	---	---	e23	36	21	27
4	21	16	18	---	---	e15	---	---	e23	29	22	25
5	27	14	18	---	---	e15	---	---	e23	25	16	20
6	23	13	17	---	---	e16	---	---	e23	28	19	23
7	26	14	17	---	---	e15	---	---	e23	64	28	47
8	22	15	18	---	---	e16	---	---	e23	58	34	45
9	21	15	18	---	---	e15	---	---	e23	76	35	49
10	---	---	e17	---	---	e16	---	---	e24	---	---	e68
11	---	---	e17	---	---	e17	---	---	e25	---	---	e64
12	---	---	e17	---	---	e18	---	---	e26	---	---	e62
13	---	---	e17	---	---	e22	---	---	e33	---	---	e63
14	---	---	e17	---	---	e24	---	---	e40	---	---	e62
15	---	---	e17	---	---	e28	290	21	49	---	---	e63
16	---	---	e17	---	---	e38	240	32	57	---	---	e67
17	---	---	e18	---	---	e42	710	67	380	---	---	e67
18	---	---	e17	---	---	e46	230	140	190	---	---	e69
19	---	---	e17	---	---	e44	190	100	120	---	---	e67
20	---	---	e17	---	---	e44	190	71	110	---	---	e67
21	---	---	e17	---	---	e41	74	60	67	---	---	e68
22	---	---	e16	---	---	e42	70	64	68	91	48	68
23	---	---	e17	---	---	e39	81	66	74	74	56	64
24	---	---	e17	---	---	e37	75	54	64	72	59	67
25	---	---	e17	---	---	e32	70	45	59	82	70	77
26	---	---	e16	---	---	e30	64	41	52	99	64	81
27	---	---	e15	---	---	e26	56	36	45	78	55	67
28	---	---	e16	---	---	e27	49	28	40	72	57	63
29	---	---	---	---	---	e26	38	27	33	69	52	60
30	---	---	---	---	---	e23	31	25	29	83	50	65
31	---	---	---	---	---	e23	---	---	---	62	46	54
MONTH	27	13	17	---	---	27	710	21	60	99	16	57

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED
WATER YEAR OCTOBER 2002 THROUGH SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	69	48	57	70	60	63	30	19	25	25	13	17
2	92	54	69	65	46	56	32	21	25	27	14	17
3	73	56	66	55	49	52	28	20	24	21	14	17
4	89	64	80	59	49	53	28	18	23	23	14	18
5	94	79	87	55	47	52	---	---	e27	22	11	15
6	100	80	91	59	48	53	29	19	25	15	9.0	11
7	91	74	84	59	47	54	28	18	23	14	8.0	10
8	90	77	83	62	48	55	26	19	22	13	7.0	10
9	94	76	84	110	54	73	32	18	23	13	8.0	11
10	93	72	83	260	92	170	53	18	27	29	10	16
11	78	64	69	98	66	75	29	16	23	13	9.0	12
12	87	65	72	86	61	72	28	17	22	16	10	12
13	89	59	75	65	48	58	26	16	21	21	10	15
14	79	59	70	73	46	54	24	15	19	58	10	17
15	78	60	70	58	47	52	21	14	18	18	12	16
16	93	64	79	75	46	60	19	14	17	35	11	15
17	340	63	120	64	45	54	20	12	16	98	24	37
18	290	59	120	69	45	54	19	12	15	---	---	---
19	59	41	49	61	44	51	16	12	15	---	---	---
20	56	43	48	56	43	49	21	12	17	---	---	---
21	60	44	48	51	42	46	20	13	16	---	---	---
22	86	42	58	50	37	43	24	12	17	---	---	---
23	71	44	61	44	33	38	22	13	17	---	---	---
24	1,300	56	390	42	30	35	23	12	16	---	---	---
25	1,300	230	710	49	25	32	23	11	16	---	---	---
26	230	99	160	39	26	32	19	11	15	---	---	---
27	1,200	80	110	38	24	30	25	13	16	---	---	---
28	1,200	200	430	41	24	29	27	14	18	---	---	---
29	200	85	130	31	22	26	22	14	18	---	---	---
30	85	69	74	28	19	24	22	14	18	---	---	---
31	---	---	---	34	20	25	21	14	17	---	---	---
MONTH	1,300	41	120	260	19	52	53	11	20	98	7.0	16
YEAR	1,300	7.0	38									

e Estimated

Damschen and Nustad—**Data for Selected Gaging Stations in the Upper Red River of the North Basin in Minnesota**—Open File Report 2005–1150
September 2001 through September 2003

