04218000 TONAWANDA CREEK AT RAPIDS, NY

Eastern Lake Erie Basin
Niagara Subbasin

LOCATION.--Lat 43°05′35″, long 78°38′11″ referenced to North American Datum of 1927, Niagara County, NY, Hydrologic Unit 04120104, on right bank at downstream side of bridge on Rapids Road at Rapids, 4.6 mi east of Pendleton, 4.9 mi downstream from Beeman Creek, and 5.9 mi upstream from Mud Creek.

DRAINAGE AREA.--349 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--August 1955 to September 1965, March 1978 to September 1979 (seasonal gage-height records only), October 1979 to current year.

REVISED RECORDS.--WDR NY-82-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 571.19 ft above NGVD of 1929.

REMARKS.--Records good, except for those estimated daily discharges which are fair. Telephone gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,280 ft^3/s, Apr. 1, 1960, gage height, 16.96 ft (does not include about 4,300 ft^3/s bypassing the gage, as estimated and reported by the Buffalo District Corps of Engineers); minimum discharge, 4.5 ft^3/s, July 28, 1983, gage height, 0.91 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft^3/s and (or) maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 4	0600	2,740	8.96
Feb 21	1800	3,820	11.39
Mar 3	1700	2,730	8.93
Mar 8	1330	*4,050	*11.88
Mar 13	0600	3,680	11.08
Apr 22	1300	2,630	8.71
Apr 28	0700	3,130	9.85
May 18	0800	3,460	10.60

Minimum discharge, 32 ft^3/s, July 24, 25, gage height, 1.16 ft.

Suggested citation: U.S. Geological Survey, 2012, Water-resources data for the United States, Water Year 2011: U.S. Geological Survey Water-Data Report WDR-US-2011, site 04218000, accessed at http://wdr.water.usgs.gov/wy2011/pdfs/04218000.2011.pdf

04218000 TONAWANDA CREEK AT RAPIDS, NY—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	102	165	694	711	e200	1,630	776	951	881	151	49	52
2	186	139	1,480	1,470	e195	2,120	849	781	588	126	59	49
3	225	121	2,230	1,840	e200	2,660	821	894	423	106	62	49
4	144	112	2,580	1,760	e205	2,150	792	1,460	340	94	78	44
5	179	112	1,730	963	e215	1,670	1,060	1,980	319	88	87	44
6	312	129	1,040	e650	e220	3,050	1,460	1,940	317	82	109	120
7	609	228	787	e550	e215	3,530	1,530	1,130	289	91	72	157
8	605	269	666	e475	e210	3,930	1,070	749	245	81	60	118
9	414	207	e560	e400	e205	2,820	781	612	227	67	212	90
10	244	172	e500	e350	e200	2,170	634	534	205	63	348	82
11	173	153	517	e300	e200	2,830	543	459	173	59	193	68
12	140	139	590	e270	e200	3,420	484	389	156	58	155	58
13	126	126	795	e260	e200	3,480	574	348	150	57	112	56
14	142	116	e680	e250	e220	2,350	905	598	149	53	83	93
15	136	112	e600	e240	326	1,540	996	1,670	145	48	68	74
16	118	110	e520	e230	428	1,110	865	2,920	134	43	70	60
17	116	143	e515	e230	583	1,040	923	3,190	128	40	113	52
18	137	307	e490	e200	1,370	1,030	842	3,380	118	39	82	48
19	127	597	e440	e210	2,500	1,030	807	2,590	107	39	64	48
20	108	412	e410	e220	2,940	1,000	1,230	1,790	99	39	54	47
21	108	286	e380	e230	3,690	841	1,890	1,480	92	37	51	51
22	116	230	e350	e215	3,200	934	2,520	1,040	276	38	53	53
23	131	271	e320	e200	1,840	1,080	2,000	775	478	35	58	49
24	194	668	e300	e195	1,100	876	1,600	659	585	33	79	61
25	172	842	e270	e190	867	784	1,700	754	681	36	79	66
26	164	633	e250	e200	749	724	2,320	825	446	110	84	51
27	170	533	e240	e205	667	639	2,750	1,500	386	78	157	48
28	205	589	e225	e210	838	571	2,980	1,900	257	57	115	50
29	326	478	e215	e210	---	520	2,130	1,760	190	56	78	56
30	233	411	e210	e205	---	505	1,460	1,680	156	59	63	74
31	199	---	264	e205	---	585	---	1,200	---	49	55	---
Total	6,361	8,810	20,848	13,844	23,983	52,619	39,292	41,938	8,740	2,012	3,002	1,968
Mean	205	294	673	447	857	1,697	1,310	1,353	291	64.9	96.8	65.6
Max	609	842	2,580	1,840	3,690	3,930	2,980	3,380	881	151	348	157
Min	102	110	210	190	195	505	484	348	92	33	49	44
Cfsm	0.59	0.84	1.93	1.28	2.45	4.86	3.75	3.88	0.83	0.19	0.28	0.19
In.	0.68	0.94	2.22	1.48	2.56	5.61	4.19	4.47	0.93	0.21	0.32	0.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 2011, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	185	326	551	573	683	1,021	894	425	214	108	93.8	112
Max	1,424	1,239	1,276	1,581	1,392	1,697	1,534	1,353	1,372	511	601	704
(WY)	(2007)	(1986)	(2009)	(1998)	(2009)	(2011)	(1960)	(2011)	(1989)	(1998)	(1992)	(2004)
Min	14.8	25.7	23.3	29.4	103	452	334	144	45.6	26.1	15.9	10.0
(WY)	(1965)	(1961)	(1961)	(1961)	(1963)	(1981)	(1995)	(1993)	(1965)	(1991)	(1991)	(1991)

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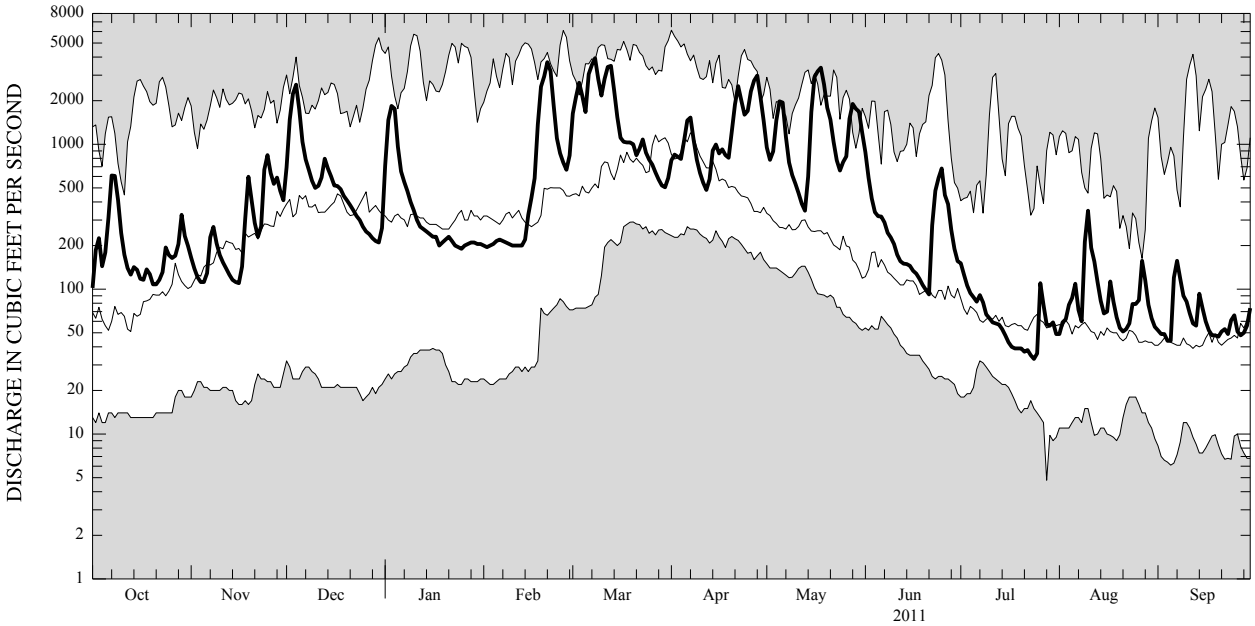
SUMMARY STATISTICS

	Calendar Year 2010		Water Year 2011		Water Years 1955 - 2011	
Annual total	148,918		223,417			
Annual mean	408		612		431	
Highest annual mean					625	2007
Lowest annual mean					255	1965
Highest daily mean	4,520	Mar 15	3,930	Mar 8	6,130	Apr 1, 1960
Lowest daily mean	39	Sep 4	33	Jul 24	4.8	Jul 28, 1983
Annual seven-day minimum	43	Sep 1	37	Jul 19	6.8	Sep 1, 1991
Annual runoff (cfsm)	1.17		1.75		1.24	
Annual runoff (inches)	15.87		23.81		16.79	
10 percent exceeds	808		1,760		1,110	
50 percent exceeds	235		240		212	
90 percent exceeds	52		57		34	



CURRENT WATER YEAR DAILY MEAN DISCHARGE (BOLD) WITH DAILY MEDIAN FOR PERIOD OF RECORD.
SHADED AREAS SHOW HIGHEST AND LOWEST DAILY MEAN FOR PERIOD OF RECORD THROUGH PREVIOUS WATER YEAR.

04218000 TONAWANDA CREEK AT RAPIDS, NY—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 2011 to September 2011.
INORGANIC DATA: Water year 2011 (a).
ORGANIC DATA: Water year 2011 (a).

COOPERATION.--In cooperation with the U.S. Environmental Protection Agency's Great Lakes Restoration Initiative (GLRI).

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 1 of 9
[ft, feet; ft³/s, cubic feet per second; µg/L, micrograms per liter; <, less than; E, estimated]

Date	Sample start time	Discharge, instantaneous, ft³/s (00061)	Gage height, ft (00065)	Bisphenol A-d3, surrogate, Schedule 4433 and Labcode 8033 (WWWW), water, unfiltered, percent recovery (62839)	Caffeine-13C, surrogate, Schedule 4433 and Labcode 8033 (WWWW), water, unfiltered, percent recovery (62840)	Deca-fluoro-biphenyl, surrogate, Schedule 4433 and Labcode 8033 (WWWW), water, unfiltered, percent recovery (62841)	Fluor-anthene-d10, surrogate, Schedule 4433 and Labcode 8033 (WWWW), water, unfiltered, percent recovery (62842)	Sample volume, Schedule 4433 and Labcode 8033 (WWWW), milliliters (99963)	Sampling method (82398)	1,4-Dichloro-benzene, water, unfiltered, recover-able, µg/L (34571)
08-02-2011	**1310**	60	1.36	99.3	89.0	58.6	92.7	917	EWI	< .08

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 2 of 9
[ft, feet; ft³/s, cubic feet per second; µg/L, micrograms per liter; <, less than; E, estimated]

Date	Sample start time	Atrazine, water, unfiltered, recover-able, µg/L (39630)	Bromacil, water, unfiltered, recover-able, µg/L (30234)	Camphor, water, unfiltered, recover-able, µg/L (62817)	Carbaryl, water, unfiltered, recover-able, µg/L (39750)	Carbazole, water, unfiltered, recover-able, µg/L (77571)	Chlor-pyrifos, water, unfiltered, recover-able, µg/L (38932)	DEET, water, unfiltered, recover-able, µg/L (61947)	Diazinon, water, unfiltered, recover-able, µg/L (39570)	Dichlor-vos, water, unfiltered, recover-able, µg/L (30218)
08-02-2011	**1310**	.055	< .16	.015	< .06	.007	< .32	.110	< .32	< .08

04218000 TONAWANDA CREEK AT RAPIDS, NY—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 3 of 9
[ft, feet; ft³/s, cubic feet per second; µg/L, micrograms per liter; <, less than; E, estimated]

Date	Sample start time	Metalaxyl, water, unfiltered, recoverable, µg/L (04254)	Metolachlor, water, unfiltered, recoverable, µg/L (82612)	p-Cresol, water, unfiltered, recoverable, µg/L (77146)	Pentachlorophenol, water, unfiltered, recoverable, µg/L (39032)	Prometon, water, unfiltered, recoverable, µg/L (39056)	1-Methylnaphthalene, water, unfiltered, recoverable, µg/L (81696)	2,6-Dimethylnaphthalene, water, unfiltered, recoverable, µg/L (62805)	2-Methylnaphthalene, water, unfiltered, recoverable, µg/L (30194)	3,4-Dichlorophenyl isocyanate, water, unfiltered, recoverable, µg/L (63145)
08-02-2011	1310	< .16	.019	< .08	< 1.60	< .16	< .04	< .04	< .04	< .32

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 4 of 9
[ft, feet; ft³/s, cubic feet per second; µg/L, micrograms per liter; <, less than; E, estimated]

Date	Sample start time	3-beta-Coprostanol, water, unfiltered, recoverable, µg/L (62806)	3-Methyl-1H-indole, water, unfiltered, recoverable, µg/L (62807)	3-tert-Butyl-4-hydroxyanisole, water, unfiltered, recoverable, µg/L (61702)	4-Cumylphenol, water, unfiltered, recoverable, µg/L (62808)	4-n-Octylphenol, water, unfiltered, recoverable, µg/L (62809)	4-Nonylphenol (sum of all isomers), water, unfiltered, recoverable, µg/L (62829)	4-Nonylphenol diethoxylate (sum of all isomers), water, unfiltered, recoverable, µg/L (61703)	4-Nonylphenol monoethoxylate (sum of all isomers), water, unfiltered, recoverable, µg/L (61704)	4-tert-Octylphenol diethoxylate, water, unfiltered, recoverable, µg/L (62486)
08-02-2011	1310	< 1.6	< .04	< .16	< .04	< .02	< 1.6	< 1.60	< 1.6	< .20

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 5 of 9
[ft, feet; ft³/s, cubic feet per second; µg/L, micrograms per liter; <, less than; E, estimated]

Date	Sample start time	4-tert-Octylphenol monoethoxylate, water, unfiltered, recoverable, µg/L (62485)	4-tert-Octylphenol, water, unfiltered, recoverable, µg/L (62810)	5-Methyl-1H-benzotriazole, water, unfiltered, recoverable, µg/L (61944)	9,10-Anthraquinone, water, unfiltered, xxx (62813)	Acetophenone, water, unfiltered, recoverable, µg/L (62811)	Acetyl hexamethyl tetrahydronaphthalene, water, unfiltered, recoverable, µg/L (62812)	Anthracene, water, unfiltered, recoverable, µg/L (34220)	BDE congener 47, water, unfiltered, recoverable, µg/L (63147)	Benzo[a]pyrene, water, unfiltered, recoverable, µg/L (34247)
08-02-2011	1310	< .60	< .4	< .32	< .04	< .4	< .04	< .02	< .04	< .02

04218000 TONAWANDA CREEK AT RAPIDS, NY—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 6 of 9
[ft, feet; ft³/s, cubic feet per second; µg/L, micrograms per liter; <, less than; E, estimated]

Date	Sample start time	Benzophenone, water, unfiltered, recoverable, µg/L (62814)	beta-Sitosterol, water, unfiltered, recoverable, µg/L (62815)	beta-Stigmastanol, water, unfiltered, recoverable, µg/L (61948)	Bis(2-ethylhexyl) phthalate, water, unfiltered, recoverable, µg/L (39100)	Bisphenol A, water, unfiltered, recoverable, µg/L (62816)	Caffeine, water, unfiltered, recoverable, µg/L (81436)	Cholesterol, water, unfiltered, recoverable, µg/L (62818)	Cotinine, water, unfiltered, recoverable, µg/L (61945)	Diethyl phthalate, water, unfiltered, recoverable, µg/L (34336)
08-02-2011	1310	< .08	< 1.6	< 1.60	< 2	< .04	E .033	E .31	E .026	< .4

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 7 of 9
[ft, feet; ft³/s, cubic feet per second; µg/L, micrograms per liter; <, less than; E, estimated]

Date	Sample start time	D-Limonene, water, unfiltered, recoverable, µg/L (62819)	Fluoranthene, water, unfiltered, recoverable, µg/L (34376)	Hexahydrohexamethyl cyclopentabenzopyran, water, unfiltered, recoverable, µg/L (62823)	Indole, water, unfiltered, recoverable, µg/L (62824)	Isoborneol, water, unfiltered, recoverable, µg/L (62825)	Isophorone, water, unfiltered, recoverable, µg/L (34408)	Isopropylbenzene, water, unfiltered, recoverable, µg/L (77223)	Isoquinoline, water, unfiltered, recoverable, µg/L (62826)	Menthol, water, unfiltered, recoverable, µg/L (62827)
08-02-2011	1310	< .16	E .005	< .04	< .04	< .08	< .04	< .04	< .04	< .32

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 8 of 9
[ft, feet; ft³/s, cubic feet per second; µg/L, micrograms per liter; <, less than; E, estimated]

Date	Sample start time	Methyl salicylate, water, unfiltered, recoverable, µg/L (62828)	Naphthalene, water, unfiltered, recoverable, µg/L (34696)	Phenanthrene, water, unfiltered, recoverable, µg/L (34461)	Phenol, water, unfiltered, recoverable, µg/L (34694)	Pyrene, water, unfiltered, recoverable, µg/L (34469)	Tetrachloroethene, water, unfiltered, recoverable, µg/L (34475)	Tribromomethane, water, unfiltered, recoverable, µg/L (32104)	Tributyl phosphate, water, unfiltered, recoverable, µg/L (62832)	Triclosan, water, unfiltered, recoverable, µg/L (61708)
08-02-2011	1310	< .08	< .02	< .02	< .16	.004	< .16	< .16	< .04	< .32

04218000 TONAWANDA CREEK AT RAPIDS, NY—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 9 of 9
[ft, feet; ft³/s, cubic feet per second; µg/L, micrograms per liter; <, less than; E, estimated]

Date	Sample start time	Triethyl citrate, water, unfiltered, recoverable, µg/L (62833)	Triphenyl phosphate, water, unfiltered, recoverable, µg/L (62834)	Tris(2-butoxyethyl) phosphate, water, unfiltered, recoverable, µg/L (62830)	Tris(2-chloroethyl) phosphate, water, unfiltered, recoverable, µg/L (62831)	Tris(dichloroisopropyl) phosphate, water, unfiltered, recoverable, µg/L (61707)
08-02-2011	**1310**	< .04	< .08	E .164	< .16	< .32