

Water-Data Report 2008

02085000 ENO RIVER AT HILLSBOROUGH, NC

Neuse Basin
Upper Neuse Subbasin

LOCATION.--Lat 36°04'16", long 79°05'44" referenced to North American Datum of 1983, Orange County, NC, Hydrologic Unit 03020201, on left bank 900 ft downstream of bridge on North Carolina Highway 86 at Hillsborough, and 2 mi downstream of Sevenmile Creek.

DRAINAGE AREA.--66 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1927 to September 1971, October 1985 to current year.

REVISED RECORDS.--WDR NC-96-1: 1945(M).

GAGE.--Water-stage recorder. Datum of gage is 487.44 ft above NGVD of 1929. Telephone and satellite telemetry at station.

REMARKS.--No estimated daily discharges. Records fair. Diversions upstream from station of 0.21 ft³/s by Orange-Alamance Water System, Inc. and 1.8 ft³/s by town of Hillsborough for municipal supply, part of which is returned downstream of station as treated effluent. Maximum gage height for period of record, 21.13 ft, from high-water mark in gage shelter. No flow for part of September 13, 2002.

02085000 ENO RIVER AT HILLSBOROUGH, NC—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1.6	1.7	0.69	19	11	7.5	112	57	11	15	3.8	16
2	1.6	1.9	0.76	8.2	19	6.2	55	35	10	6.2	4.0	7.0
3	1.3	1.4	1.0	5.7	12	5.6	32	25	6.6	2.6	5.3	4.6
4	0.92	2.8	1.2	4.1	8.1	37	86	19	4.8	3.0	4.5	3.7
5	1.3	2.1	0.70	4.2	6.9	289	308	15	3.8	23	3.1	3.9
6	3.1	1.8	0.74	3.5	6.1	59	155	13	2.9	54	2.9	1,900
7	3.7	2.7	0.76	3.0	5.7	80	101	11	3.6	18	3.1	371
8	2.6	2.8	0.89	2.3	5.1	157	64	9.9	3.0	8.7	3.5	109
9	2.2	3.3	1.2	1.9	4.7	52	44	12	2.7	5.1	3.6	39
10	2.1	2.7	1.1	3.2	4.2	29	32	11	2.2	6.5	5.1	22
11	1.6	2.4	1.0	3.8	3.4	19	25	23	2.6	5.7	4.0	26
12	1.5	2.5	0.96	2.9	4.7	15	22	36	4.0	4.3	3.2	22
13	2.2	2.4	0.96	2.4	33	11	20	18	4.5	4.9	2.7	15
14	3.6	2.3	1.3	2.2	27	9.9	16	12	5.9	6.0	2.7	10
15	3.4	2.4	2.2	2.1	18	14	14	9.9	6.5	4.7	2.8	7.1
16	3.6	2.4	5.0	2.0	15	38	12	23	6.5	2.7	2.9	24
17	3.8	2.0	2.0	7.1	11	25	10	24	5.9	2.0	2.8	44
18	2.3	1.9	0.75	7.6	9.6	15	9.5	13	3.5	2.3	2.6	21
19	2.3	2.0	0.61	8.2	7.9	14	10	19	3.3	3.2	1.7	11
20	2.2	1.9	0.75	7.0	6.8	20	29	18	3.5	3.6	2.8	7.6
21	2.0	1.6	0.98	5.3	5.8	16	51	35	3.1	3.1	6.3	6.2
22	2.0	1.6	0.97	4.2	7.2	12	30	20	38	2.9	2.9	4.4
23	2.0	1.4	1.8	4.2	7.0	10	22	12	50	2.8	2.1	3.3
24	4.6	1.4	2.0	4.0	6.8	9.1	16	8.7	9.7	3.7	1.7	3.3
25	5.3	1.3	2.4	3.8	6.7	8.0	13	7.3	4.5	3.2	1.4	2.9
26	30	0.92	8.1	3.7	10	7.8	11	6.1	4.6	4.3	1.9	125
27	31	0.67	3.4	3.4	14	6.8	15	4.5	4.0	4.2	171	85
28	6.6	1.0	2.1	3.3	12	6.3	252	10	3.5	3.8	199	45
29	3.2	1.0	2.1	2.8	8.8	6.8	323	14	4.1	3.0	23	23
30	3.3	0.73	34	2.8	---	7.4	108	9.3	54	3.7	9.8	13
31	2.3	---	59	3.1	---	27	---	6.6	---	3.4	7.6	---
Total	139.22	57.02	141.42	141.0	297.5	1,020.4	1,997.5	537.3	272.3	219.6	493.8	2,975.0
Mean	4.49	1.90	4.56	4.55	10.3	32.9	66.6	17.3	9.08	7.08	15.9	99.2
Max	31	3.3	59	19	33	289	323	57	54	54	199	1,900
Min	0.92	0.67	0.61	1.9	3.4	5.6	9.5	4.5	2.2	2.0	1.4	2.9
Cfsm	0.07	0.03	0.07	0.07	0.16	0.50	1.01	0.26	0.14	0.11	0.24	1.50
In.	0.08	0.03	0.08	0.08	0.17	0.58	1.13	0.30	0.15	0.12	0.28	1.68

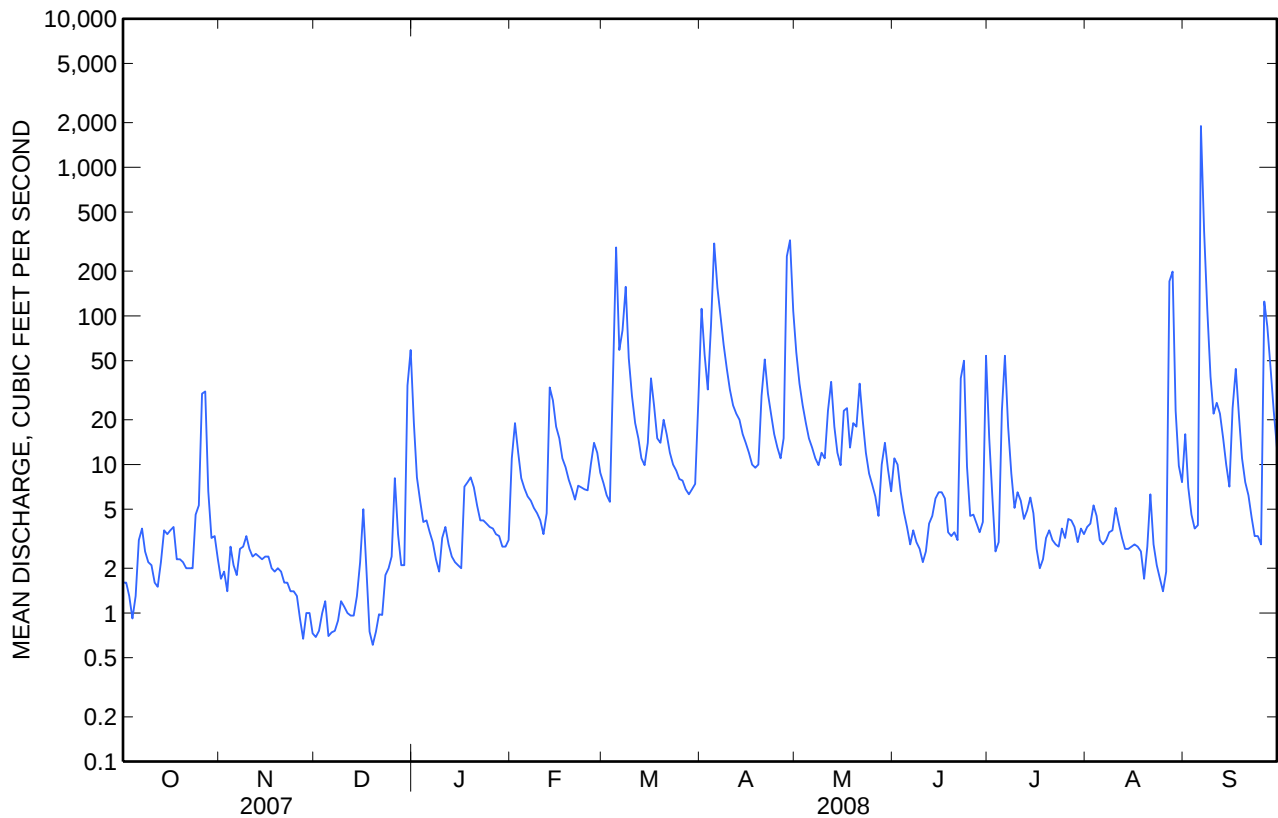
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2008^a, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	28.1	43.8	56.2	86.9	107	117	93.8	49.4	37.8	36.4	31.6	38.0
Max	181	213	183	326	311	354	304	175	210	359	256	342
(WY)	(1930)	(1986)	(2003)	(1936)	(1998)	(1998)	(2003)	(2003)	(1995)	(1938)	(1939)	(1945)
Min	0.63	0.82	3.64	4.55	10.3	15.7	12.4	4.17	1.75	1.28	0.85	0.28
(WY)	(1987)	(1942)	(1942)	(2008)	(2008)	(2006)	(2002)	(2002)	(1986)	(1986)	(1987)	(1954)

02085000 ENO RIVER AT HILLSBOROUGH, NC—Continued

SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1928 - 2008 ^a	
Annual total	11,070.06		8,292.06			
Annual mean	30.3		22.7		60.2	
Highest annual mean					154	2003
Lowest annual mean					9.67	2002
Highest daily mean	748	Apr 15	1,900	Sep 6	4,600	Sep 6, 1996
Lowest daily mean	0.61	Dec 19	0.61	Dec 19	0.02	Jul 10, 1986
Annual seven-day minimum	0.82	Nov 26	0.82	Nov 26	0.10	Oct 6, 1954
Maximum peak flow			4,530	Sep 6	10,800	Sep 6, 1996
Maximum peak stage			16.57	Sep 6	^b 21.13	Sep 6, 1996
Instantaneous low flow			0.24	Nov 27	^b 0.00	Sep 13, 2002
Annual runoff (cfs)	0.460		0.343		0.913	
Annual runoff (inches)	6.24		4.67		12.40	
10 percent exceeds	63		35		114	
50 percent exceeds	5.0		5.1		25	
90 percent exceeds	1.4		1.6		3.8	

^aSee Period of Record.^bSee Remarks.

02085000 ENO RIVER AT HILLSBOROUGH, NC—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1990 to current year.

REMARKS.--Station operated to define water quality as part of a regional surface-water quality assessment.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 1 of 5

[QC, quality control sample. Remark codes: <, less than; E, estimated.]

Date	Time	Sample medium and type	Instantaneous discharge, cfs (00061)	Color, water, ftrd, Pt-Co units (00080)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unf 25 degC (00095)
Oct									
02...	1145	Surface water, regular	1.6	20	758	6.9	73	7.1	93
Dec									
03...	1045	Surface water, regular	.83	30	749	8.8	75	6.7	104
Feb									
06...	1345	Surface water, regular	7.6	35	744	10.7	100	7.0	112
06...	1346	QC - Surface water, replicate	--	30	--	--	--	--	--
Apr									
02...	0930	Surface water, regular	60	70	757	9.6	92	6.9	79
Jun									
02...	0945	Surface water, regular	9.7	70	750	6.2	72	7.0	94
Aug									
04...	0900	Surface water, regular	4.5	50	751	4.9	60	7.0	102

02085000 ENO RIVER AT HILLSBOROUGH, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 2 of 5

[QC, quality control sample. Remark codes: <, less than; E, estimated.]

Date	Temperature, water, deg C (00010)	Hard- ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf infl pt titr., field, mg/L as CaCO3 (00419)	Bicar- bonate, wat unf infl pt titr., field, mg/L (00450)	Chlor- ide, water, fltrd, mg/L (00940)	Fluor- ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L as SiO2 (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)
Oct 02...	18.0	32	7.67	3.21	1.98	5.33	30	37	4.95	E.09	8.85	3.65	67
Dec 03...	8.0	42	10.4	3.75	2.23	5.86	37	45	6.33	E.08	8.24	7.20	81
Feb 06...	11.5	35	8.82	3.19	1.82	6.99	22	27	9.44	<.12	9.11	12.5	74
06...	--	36	9.03	3.17	1.80	6.93	23	32	9.43	<.12	9.23	12.4	74
Apr 02...	12.9	23	5.68	2.22	1.37	5.76	14	18	6.89	<.12	9.14	8.45	71
Jun 02...	21.9	31	7.55	2.88	1.77	5.75	24	29	6.59	E.07	9.22	8.31	73
Aug 04...	24.1	34	8.35	3.14	1.86	5.48	30.7	37.5	5.31	E.06	9.04	5.60	74

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 3 of 5

[QC, quality control sample. Remark codes: <, less than; E, estimated.]

Date	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrate + nitrite water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, unfltrd mg/L as P (00665)	Organic carbon, water, fltrd, mg/L (00681)	Organic carbon, water, unfltrd mg/L (00680)	Alum- inum, water, unfltrd recover- able, µg/L (01105)	Arsenic water, unfltrd µg/L (01002)	Cadmium water, unfltrd µg/L (01027)	Chrom- ium, water, unfltrd recover- able, µg/L (01034)	Cobalt water, unfltrd recover- able, µg/L (01037)
Oct 02...	.39	<.020	.067	E.001	E.004	.013	5.4	6.0	32	E.35	<.01	<.40	.13
Dec 03...	.34	E.013	.036	<.002	E.004	.017	5.4	6.4	--	--	--	--	--
Feb 06...	.34	E.012	.205	.002	E.005	.021	4.3	5.2	--	--	--	--	--
06...	.35	E.014	.205	.002	E.005	.020	4.4	5.0	--	--	--	--	--
Apr 02...	.49	E.014	.195	E.002	E.006	.041	6.9	8.3	231	E.38	<.01	.56	.42
Jun 02...	.46	.031	.221	.004	.007	.035	5.4	5.9	--	--	--	--	--
Aug 04...	.40	E.020	.133	.002	.009	.018	6.3	6.6	--	--	--	--	--

02085000 ENO RIVER AT HILLSBOROUGH, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 4 of 5

[QC, quality control sample. Remark codes: <, less than; E, estimated.]

Date	Copper, water, unfltrd recover- able, µg/L (01042)	Iron, water, unfltrd recover- able, µg/L (01045)	Lead, water, unfltrd recover- able, µg/L (01051)	Mangan- ese, water, unfltrd recover- able, µg/L (01055)	Mercury water, unfltrd recover- able, µg/L (71890)	Mercury water, unfltrd recover- able, µg/L (71900)	Molyb- denum, water, unfltrd recover- able, µg/L (01062)	Nickel, water, unfltrd recover- able, µg/L (01067)	Selen- ium, water, unfltrd recover- able, µg/L (01147)	Silver, water, unfltrd recover- able, µg/L (01077)	Zinc, water, unfltrd recover- able, µg/L (01092)	Sus- pended sedi- ment concen- tration mg/L (80154)	Data base number
Oct 02...	E.99	307	.11	70.7	<.010	<.010	.1	.23	.10	<.02	E1.3	1	01
Dec 03...	--	--	--	--	<.010	E.009	--	--	--	--	--	5	01
Feb 06...	--	--	--	--	<.010	<.010	--	--	--	--	--	4	01
06...	--	--	--	--	<.010	<.010	--	--	--	--	--	6	04
Apr 02...	2.1	1,060	.44	116	<.010	<.010	E.1	.49	.13	<.02	3.9	10	01
Jun 02...	--	--	--	--	<.010	<.010	--	--	--	--	--	7	01
Aug 04...	--	--	--	--	<.010	<.010	--	--	--	--	--	3	01

**WATER-QUALITY
DATA
WATER YEAR
OCTOBER 2007 TO
SEPTEMBER 2008**

Part 5 of 5

[QC, quality control
sample. Remark
codes: <, less than;
E, estimated.]

Date	Medium code
Oct 02...	WS
Dec 03...	WS
Feb 06...	WS
06...	WSQ
Apr 02...	WS
Jun 02...	WS
Aug 04...	WS