



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.

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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)

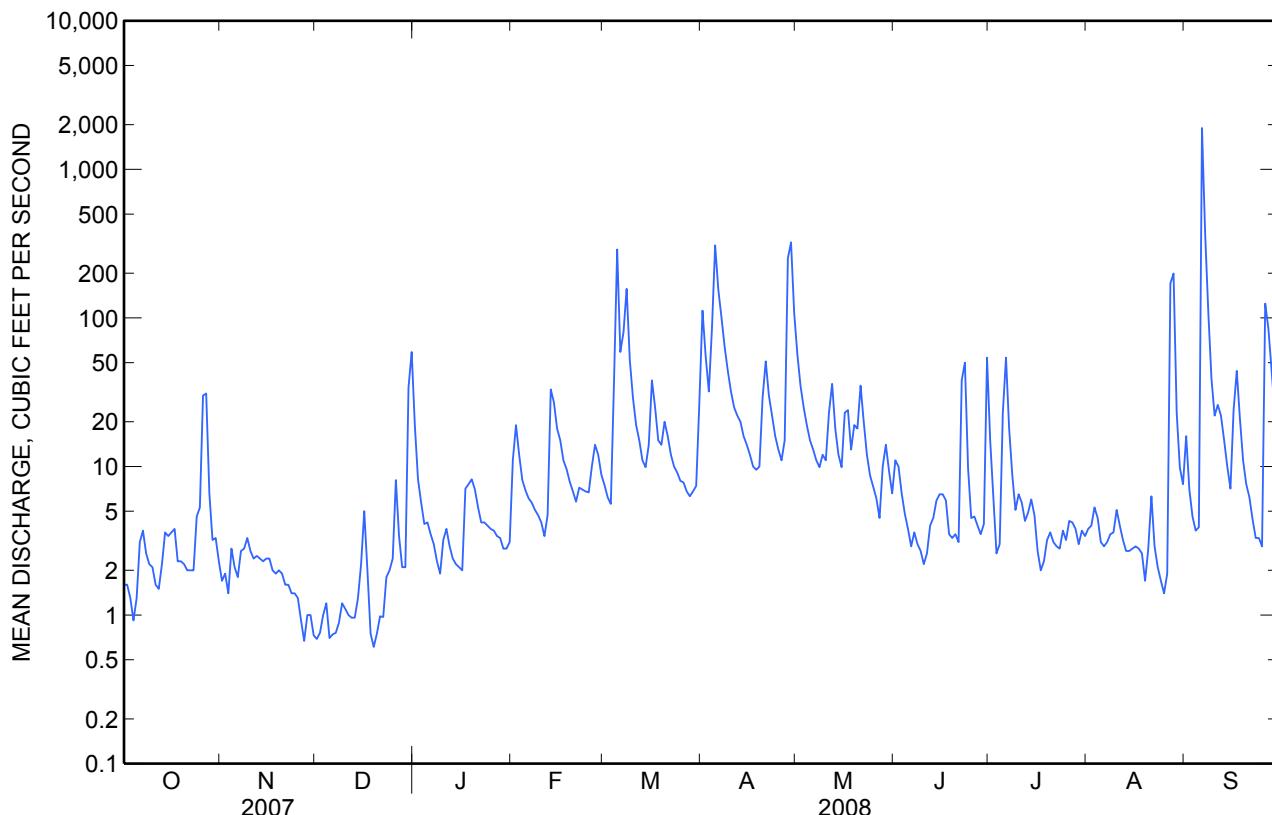
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SUMMARY STATISTICS

	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
Lowest annual mean			9.67
Highest daily mean	748	Apr 15	4,600
Lowest daily mean	0.61	Dec 19	0.02
Annual seven-day minimum	0.82	Nov 26	0.10
Maximum peak flow		4,530	10,800
Maximum peak stage		16.57	b21.13
Instantaneous low flow		0.24	b0.00
Annual runoff (cfsm)	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	Instan- taneous dis- charge, cfs (00061)	Color, water, filtrd, Pt-Co units (00080)	Baro- metric pres- sure, mm Hg (00025)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	pH, water, unfiltrd field, std units (00400)	Specif- ic conduc- tance, wat unf μS/cm 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	<i>QC - Surface water, replicate</i>	--	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

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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	Temper- ature, water, deg C (00010)	Hard- ness, water, mg/L as CaCO ₃ (00900)	Calcium water, mg/L (00915)	Magnes- ium, water, mg/L (00925)	Potas- sium, water, mg/L (00935)	Sodium, water, mg/L (00930)	ANC, wat unf infl pt titr., field, mg/L as CaCO ₃ (00419)	Bicar- bonate, wat unf infl pt titr., field, mg/L (00450)	Chlor- ide, water, mg/L (00940)	Fluor- ide, water, mg/L (00950)	Silica, water, mg/L as SiO ₂ (00955)	Sulfate water, 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, unfiltrd mg/L as N (00625)	Ammonia water, filtrd, mg/L as N (00608)	Nitrate + nitrite water filtrd, mg/L as N (00631)	Nitrite water, filtrd, mg/L as N (00613)	Ortho- phosphate, water, filtrd, mg/L as P (00671)	Phos- phorus, water, filtrd, mg/L as P (00665)	Organic carbon, water, filtrd, mg/L (00681)	Organic carbon, water, unfiltrd mg/L (00680)	Alum- inum, water, unfiltrd recover -able, μg/L (01105)	Arsenic water, unfiltrd μg/L (01002)	Cadmium water, unfiltrd μg/L (01027)	Chrom- ium, water, unfiltrd recover -able, μg/L (01034)	Cobalt water, unfiltrd 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, unfiltrd recover -able, µg/L (01042)	Iron, water, unfiltrd recover -able, µg/L (01045)	Lead, water, unfiltrd recover -able, µg/L (01051)	Mangan- ese, water, unfiltrd recover -able, µg/L (01055)	Mercury Mercury water, filtrd, recover -able, µg/L (71890)	Mercury water, unfiltrd recover -able, µg/L (71900)	Molyb- denum, water, unfiltrd recover -able, µg/L (01062)	Nickel, water, unfiltrd recover -able, µg/L (01067)	Selen- ium, water, unfiltrd recover -able, µg/L (01147)	Silver, water, unfiltrd recover -able, µg/L (01077)	Zinc, water, unfiltrd recover -able, µg/L (01092)	Sus- pended sediment concentra- tion 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.]

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