

Water-Data Report 2007

**02097517 MORGAN CREEK NEAR CHAPEL HILL, NC**

Cape Fear Basin  
Haw Subbasin

LOCATION.--Lat 35°53'36", long 79°01'11" referenced to North American Datum of 1983, Orange County, NC, Hydrologic Unit 03030002, on left bank 2.5 mi southeast of Chapel Hill, and 3.8 mi downstream of U.S. Highway 501.

DRAINAGE AREA.--41 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--November 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 239.02 ft above NGVD of 1929. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges which are poor. The City of Chapel Hill diverted an average of 13.5 ft<sup>3</sup>/s for water supply upstream of station, and an average of 12.1 ft<sup>3</sup>/s was returned as treated effluent upstream of station. Considerable diurnal fluctuation and occasional slight regulation caused by small reservoir and treated effluent outfall upstream from station. Maximum discharge for period of record from rating curve extended above 1,700 ft<sup>3</sup>/s, by logarithmic plotting; maximum gage height, 16.18 ft, from floodmark.

## 02097517 MORGAN CREEK NEAR CHAPEL HILL, NC—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**  
**DAILY MEAN VALUES**

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	9.2	14	39	48	23	24	17	14	10	10	9.4	8.2
2	9.7	15	31	50	32	e400	17	15	10	9.4	8.5	7.9
3	9.2	12	25	34	29	151	16	15	53	9.2	8.8	7.7
4	8.7	9.9	23	28	23	76	14	14	17	8.8	8.8	8.3
5	10	10	20	27	20	53	15	15	14	10	7.2	8.4
6	12	11	18	278	18	43	14	14	23	9.7	6.9	8.2
7	13	108	18	124	17	37	15	15	13	9.0	6.9	9.1
8	45	95	17	274	17	34	15	15	12	9.9	7.7	9.2
9	16	59	16	127	16	31	15	57	12	10	7.5	7.8
10	12	38	16	69	14	29	16	24	14	28	7.6	8.3
11	11	30	16	46	14	29	19	17	13	19	7.4	8.7
12	11	212	16	38	15	27	220	74	12	15	6.9	10
13	11	97	16	33	19	25	65	36	23	11	7.7	9.0
14	9.0	51	15	29	181	24	38	20	17	9.7	8.0	24
15	8.5	37	14	27	79	24	453	18	13	9.6	8.8	18
16	9.1	208	14	26	47	e90	486	17	12	9.0	8.6	9.8
17	42	109	13	22	36	e85	123	17	11	11	9.1	8.9
18	56	52	14	23	34	e60	65	17	11	18	8.0	7.8
19	15	37	15	27	32	e50	47	14	12	11	8.2	7.8
20	15	29	14	23	28	41	40	13	14	10	8.6	9.1
21	12	58	13	26	25	36	31	13	13	8.5	11	9.5
22	13	e600	e16	139	25	32	27	14	11	8.0	13	9.0
23	14	e260	e30	73	23	30	25	12	9.8	9.8	14	8.1
24	12	95	20	46	19	27	21	11	11	9.4	11	7.6
25	12	58	400	36	36	25	19	13	13	9.4	9.5	8.1
26	12	44	261	29	48	23	19	11	11	9.1	8.8	8.6
27	17	35	88	26	33	22	17	11	11	12	9.6	9.1
28	68	32	49	24	26	20	16	11	12	13	9.6	8.0
29	18	34	36	23	---	21	15	11	12	10	10	7.1
30	15	31	30	20	---	21	15	11	12	10	11	6.8
31	14	---	26	18	---	18	---	11	---	9.2	10	---
<b>Total</b>	539.4	2,480.9	1,339	1,813	929	1,608	1,915	570	431.8	345.7	278.1	278.1
<b>Mean</b>	17.4	82.7	43.2	58.5	33.2	51.9	63.8	18.4	14.4	11.2	8.97	9.27
<b>Max</b>	68	600	400	278	181	400	486	74	53	28	14	24
<b>Min</b>	8.5	9.9	13	18	14	18	14	11	9.8	8.0	6.9	6.8
<b>Cfsm</b>	0.42	2.02	1.05	1.43	0.81	1.27	1.56	0.45	0.35	0.27	0.22	0.23
<b>In.</b>	0.49	2.25	1.21	1.64	0.84	1.46	1.74	0.52	0.39	0.31	0.25	0.25

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2007, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	24.6	35.7	37.0	62.4	71.7	90.2	57.5	31.2	24.4	21.4	22.1	31.7
<b>Max</b>	54.9	141	105	184	206	226	194	91.2	84.9	53.8	65.0	272
<b>(WY)</b>	(2003)	(1986)	(1984)	(1998)	(1998)	(1993)	(2003)	(1990)	(1992)	(2003)	(1985)	(1999)
<b>Min</b>	12.9	10.5	12.9	13.3	17.2	18.0	16.8	11.7	11.1	8.93	8.97	8.77
<b>(WY)</b>	(1999)	(1983)	(1989)	(2004)	(1991)	(1988)	(2006)	(2006)	(1986)	(1988)	(2007)	(1983)

02097517 MORGAN CREEK NEAR CHAPEL HILL, NC—Continued

SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 1983 - 2007	
<b>Annual total</b>	9,352.1		12,528.0			
<b>Annual mean</b>	25.6		34.3		41.7	
<b>Highest annual mean</b>					80.2	2003
<b>Lowest annual mean</b>					18.7	2006
<b>Highest daily mean</b>	600	Nov 22	600	Nov 22	2,600	Sep 6, 1996
<b>Lowest daily mean</b>	6.7	Jul 3	6.8	Sep 30	0.60	Nov 26, 1982
<b>Annual seven-day minimum</b>	8.0	Jun 29	7.3	Aug 6	2.1	Nov 22, 1982
<b>Maximum peak flow</b>			Not Determined		<sup>a</sup> 4,210	Sep 6, 1996
<b>Maximum peak stage</b>			Not Determined		<sup>a</sup> 16.18	Sep 6, 1996
<b>Instantaneous low flow</b>			1.9 Aug 19		Not Determined	
<b>Annual runoff (cfsm)</b>	0.625		0.837		1.02	
<b>Annual runoff (inches)</b>	8.49		11.37		13.82	
<b>10 percent exceeds</b>	38		58		76	
<b>50 percent exceeds</b>	16		16		19	
<b>90 percent exceeds</b>	9.2		8.7		12	

<sup>a</sup> See Remarks.

