

Water-Data Report 2012

02097464 MORGAN CREEK NEAR WHITE CROSS, NC

Cape Fear Basin
Haw Subbasin

LOCATION.--Lat 35°55'25", long 79°06'54" referenced to North American Datum of 1983, Orange County, NC, Hydrologic Unit 03030002, at downstream side of culvert on North Carolina Highway 54, 2 mi upstream from University Lake, and 3.5 mi east of White Cross.

DRAINAGE AREA.--8.35 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--November 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 410.13 ft above North American Vertical Datum of 1988. Satellite telemetry at streamgage.

REMARKS.--Records poor. Maximum discharge for period of record from rating curve extended above 2,700 ft³/s, by logarithmic plotting. No flow occurs at times most years.

02097464 MORGAN CREEK NEAR WHITE CROSS, NC—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES
[*e*, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.02	0.06	e2.8	e1.6	e1.7	e3.3	3.4	1.1	0.73	0.00	0.09	0.08
2	0.02	0.05	e1.5	e1.5	e1.7	e2.9	2.6	0.92	1.0	0.00	0.06	0.11
3	0.01	0.04	e1.2	e1.3	e1.5	e27	1.7	0.80	0.63	0.00	0.06	1.9
4	0.01	2.4	e1.0	e1.2	e1.4	e9.9	1.5	0.72	0.58	0.00	0.06	5.2
5	0.01	0.63	e0.92	e1.2	e1.7	e5.9	e2.1	e0.80	0.55	0.00	0.04	0.86
6	0.01	0.24	e0.84	e1.1	e1.6	e4.2	1.9	e3.0	0.57	0.00	0.03	102
7	0.00	e0.25	e1.7	e1.0	e1.6	e3.5	1.2	1.6	0.60	0.00	0.04	14
8	0.00	e0.22	e6.5	e1.0	e1.4	e3.1	0.96	1.1	0.55	0.00	0.05	2.7
9	0.00	e0.18	e2.8	e1.1	e1.2	e3.3	0.72	8.1	0.52	0.00	0.05	2.3
10	0.00	e0.15	e1.7	e1.2	e1.2	e3.1	0.48	8.5	0.51	0.00	0.16	1.0
11	0.00	e0.16	e1.2	e1.5	e1.2	e2.6	0.35	2.3	0.49	0.20	0.35	0.66
12	0.00	e0.16	e1.0	e3.5	e1.2	e2.3	0.26	1.3	0.57	0.01	1.5	0.51
13	0.00	e0.16	e0.92	e2.8	e1.1	e2.2	0.21	1.2	0.55	0.00	0.34	0.54
14	0.00	e0.15	e0.85	e1.8	e1.1	e2.0	0.17	3.5	0.50	0.00	0.19	0.63
15	0.00	e0.16	e0.82	e1.4	e1.1	e1.7	0.05	10	0.47	0.00	0.15	0.70
16	0.00	e0.18	e0.88	e1.2	e0.96	e1.7	0.00	3.9	0.44	0.00	0.12	0.91
17	0.00	e0.42	e6.2	e1.2	e1.3	e1.8	0.00	2.4	0.42	0.00	0.13	1.3
18	0.00	e1.2	e3.8	e1.4	e1.2	e5.1	0.00	1.5	0.41	0.00	0.12	27
19	0.14	e0.35	e2.3	e1.3	e1.6	e3.7	0.00	1.1	0.41	0.00	1.5	64
20	0.09	e0.25	e1.5	e1.2	e8.4	e2.8	0.00	0.87	0.41	0.00	0.74	8.2
21	0.07	e0.23	e7.2	e2.0	e6.2	e17	0.14	0.78	0.41	0.00	0.48	3.0
22	0.05	e0.21	e11	e3.5	e3.7	e6.2	29	0.76	0.41	0.00	0.34	1.7
23	0.04	e0.25	e8.6	e2.9	e4.6	e4.1	20	1.4	0.40	0.00	0.28	1.3
24	0.03	e0.24	e4.2	e2.7	e5.2	e28	6.1	3.1	0.38	0.00	0.25	0.89
25	0.03	e0.21	e2.9	e2.2	e9.4	e50	3.2	1.2	0.38	0.00	0.23	0.75
26	0.02	e0.20	e2.3	e1.7	e4.2	e12	2.7	0.85	0.36	0.00	0.20	0.67
27	0.02	e0.20	e3.7	e5.2	e3.3	e6.0	2.5	0.74	0.35	0.00	0.18	0.62
28	0.02	e0.20	e5.1	e4.8	e3.6	e4.1	1.6	0.71	0.33	0.05	0.16	0.80
29	0.10	e29	e3.4	e3.1	e3.1	e3.2	1.4	0.67	0.02	5.3	0.15	1.2
30	0.12	e6.5	e2.7	e2.4	---	e2.6	1.2	0.71	0.01	0.28	0.12	1.6
31	0.08	---	e2.0	e2.0	---	e2.6	---	0.68	---	0.14	0.10	---
Total	0.89	44.65	93.53	62.0	77.46	227.9	85.44	66.31	13.96	5.98	8.27	247.13
Mean	0.03	1.49	3.02	2.00	2.67	7.35	2.85	2.14	0.47	0.19	0.27	8.24
Max	0.14	29	11	5.2	9.4	50	29	10	1.0	5.3	1.5	102
Min	0.00	0.04	0.82	1.0	0.96	1.7	0.00	0.67	0.01	0.00	0.03	0.08
Cfsm	0.00	0.18	0.36	0.24	0.32	0.88	0.34	0.26	0.06	0.02	0.03	0.99
In.	0.00	0.20	0.42	0.28	0.35	1.02	0.38	0.30	0.06	0.03	0.04	1.10

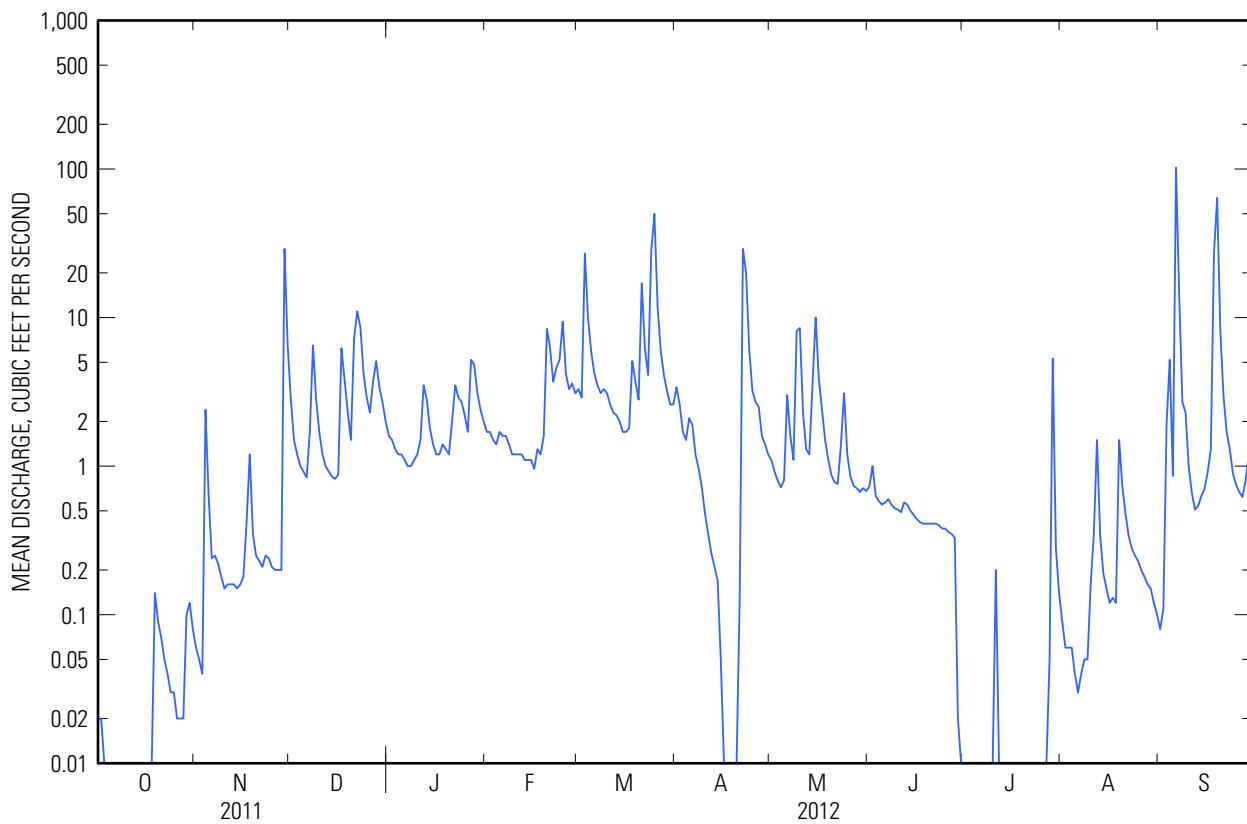
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	2.65	4.15	5.46	9.48	11.0	15.4	9.31	5.14	3.40	2.30	2.10	5.12
Max	13.1	16.0	18.7	33.4	39.7	53.0	38.6	30.1	19.9	12.3	18.7	40.4
(WY) (1990)	(2007)	(2010)	(1998)	(1998)	(1998)	(2003)	(1989)	(1989)	(1995)	(2000)	(1995)	(1999)
Min	0.01	0.00	0.18	0.37	1.26	1.67	1.95	0.72	0.03	0.04	0.00	0.00
(WY)	(2008)	(2008)	(2008)	(2008)	(2008)	(2006)	(2002)	(2002)	(2002)	(2002)	(2007)	(2007)

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	Calendar Year 2011	Water Year 2012	Water Years 1989 - 2012	
Annual total	472.28	933.52		
Annual mean	1.29	2.55	6.10	
Highest annual mean			12.5	1998
Lowest annual mean			1.06	2011
Highest daily mean	29 Nov 29	102 Sep 6	737 Sep 6	1996
Lowest daily mean	0.00 Jul 25	0.00 Oct 7	0.00 Jun 16,	2002
Annual seven-day minimum	0.00 Jul 25	0.00 Oct 7	0.00 Aug 8,	2002
Maximum peak flow		1,110 Sep 6	a3,100 Aug 27, 1995	
Maximum peak stage		8.63 Sep 6	11.20	Aug 27, 1995
Instantaneous low flow		a0.00 Oct 6	a0.00	Jun 16, 2002
Annual runoff (cfsm)	0.155	0.305	0.731	
Annual runoff (inches)	2.10	4.16	9.93	
10 percent exceeds	2.8	4.9	12	
50 percent exceeds	0.44	0.86	2.0	
90 percent exceeds	0.00	0.00	0.10	

^a See Remarks.



02097464 MORGAN CREEK NEAR WHITE CROSS, NC—Continued**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--Water years 1989 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 2002 to November 2003.

REMARKS.--Station operated as part of a regional surface-water quality assessment. August 2002 to November 2003, station was also part of the NAWQA Urban Land Use Gradient study.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 27.6°C, August 30, 2003; minimum recorded, 0.0°C, January 19, 23-26, 28, 2003.

**WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 1 of 6

[%; percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than]

Date	Sample start time	Medium name	Sample type	Barometric pressure, mm Hg (00025)	Discharge instantaneous, ft ³ /s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)	Specific conductance, water, unfiltered, µS/cm at 25°C (00095)
11-04-2011	1130	Surface water	Regular	745	4.3	9.3	85	6.9	72
12-29-2011	1015	Surface water	Regular	760	3.4	11.5	88	7.0	126
02-01-2012	1300	Surface water	Regular	754	1.7	11.5	97	7.7	116
04-25-2012	1330	Surface water	Regular	751	3.1	10.6	102	7.2	102
08-21-2012	1045	Surface water	Regular	754	.51	6.0	68	6.9	104

**WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 2 of 6

[%; percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than]

Date	Sample start time	Turbidity, water, unfiltered, broad band light source (400-680 nm), detectors at multiple angles including 90 +/- 30 degrees, ratiometric correction, NTRU (63676)			Dissolved solids dried at 180°C, water, filtered, mg/L (70300)	Calcium, water, filtered, mg/L (00915)	Magnesium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	ANC, water, unfiltered, inflection-point, incremental titration method, field, mg/L as CaCO ₃ (00419)
		Temper-ature, water, °C (00010)	ratio-metric correc-tion, NTRU (63676)							
11-04-2011	1130	10.6	--	68	6.91	2.85	3.28	4.30	--	
12-29-2011	1015	4.2	--	70	11.0	3.73	3.42	7.70	--	
02-01-2012	1300	7.9	--	48	9.75	3.28	2.10	6.94	31.9	
04-25-2012	1330	13.1	--	68	8.58	3.18	2.04	6.23	25.5	
08-21-2012	1045	21.0	7.1	81	10.0	3.21	3.56	5.40	32.9	

02097464 MORGAN CREEK NEAR WHITE CROSS, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 3 of 6

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than]

Date	Sample start time	Bi-carbonate, water, unfiltered, inflection-point, incremental titration method, field, mg/L (00450)				Silica, water, filtered, mg/L as SiO ₂ (00955)	Sulfate, water, filtered, mg/L (00945)	Ammonia plus organic nitrogen, water, unfiltered, mg/L as N (00625)		Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus ammonia, water, filtered, mg/L as N (00631)
		Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)					Ammonia, water, filtered, mg/L as N (00608)	Nitrate, water, filtered, mg/L as N (00631)		
11-04-2011	1130	--	6.29	<.04	13.3	4.27	0.58	0.014	0.28		
12-29-2011	1015	--	11.9	.06	10.6	9.39	.34	<.010	.22		
02-01-2012	1300	38.9	11.5	<.04	7.40	8.51	.29	.011	.28		
04-25-2012	1330	31.0	8.70	.05	11.8	5.58	.39	.021	.34		
08-21-2012	1045	40.0	6.23	.06	10.9	4.44	.48	.030	.09		

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 4 of 6

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than]

Date	Sample start time	Orthophosphate, water, filtered, mg/L as P (00671)		Aluminum, water, unfiltered, recoverable, µg/L (01105)	Cadmium, water, unfiltered, recoverable, µg/L (01027)	Chromium, water, unfiltered, recoverable, µg/L (01034)	Cobalt, water, unfiltered, recoverable, µg/L (01037)	Copper, water, unfiltered, recoverable, µg/L (01042)	Iron, water, unfiltered, recoverable, µg/L (01045)
		Phosphorus, water, unfiltered, mg/L as P (00665)							
11-04-2011	1130	0.068	0.156	687	<.016	0.62	0.64	2.2	1,190
12-29-2011	1015	.005	.021	--	--	--	--	--	--
02-01-2012	1300	.007	.019	--	--	--	--	--	--
04-25-2012	1330	.019	.057	132	<.016	.35	.22	2.0	1,020
08-21-2012	1045	.036	.070	--	--	--	--	--	--

02097464 MORGAN CREEK NEAR WHITE CROSS, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 5 of 6

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than]

Date	Sample start time	Lead, water, unfiltered, recoverable, µg/L (01051)	Manganese, water, unfiltered, recoverable, µg/L (01055)	Mercury, water, unfiltered, recoverable, µg/L (71900)	Molybdenum, water, unfiltered, recoverable, µg/L (01062)	Nickel, water, unfiltered, recoverable, µg/L (01067)	Silver, water, unfiltered, recoverable, µg/L (01077)	Zinc, water, unfiltered, recoverable, µg/L (01092)	Arsenic, water, unfiltered, µg/L (01002)	Selenium, water, unfiltered, µg/L (01147)
11-04-2011	1130	0.91	95.9	0.006	0.07	0.58	<.015	5.3	0.74	0.054
12-29-2011	1015	--	--	--	--	--	--	--	--	--
02-01-2012	1300	--	--	--	--	--	--	--	--	--
04-25-2012	1330	.34	31.8	<.005	.11	.51	<.015	90.8	.66	.112
08-21-2012	1045	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER
2012

Part 6 of 6

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than]

Date	Sample start time	Organic carbon, water, unfiltered, mg/L (00680)	Suspended sediment concentration, mg/L (80154)
11-04-2011	1130	11.4	39
12-29-2011	1015	5.0	7
02-01-2012	1300	4.8	5
04-25-2012	1330	7.2	4
08-21-2012	1045	6.5	4