



Water-Data Report 2012

**02097314 NEW HOPE CREEK NEAR BLANDS, NC**

Cape Fear Basin  
Haw Subbasin

LOCATION.--Lat 35°53'06", long 78°57'55" referenced to North American Datum of 1983, Durham County, NC, Hydrologic Unit 03030002, on right bank, 15 ft downstream of bridge on Secondary Road 1107, 0.5 mi southwest of Blands, and 2 mi downstream of Third Fork Creek.

DRAINAGE AREA.--75.9 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

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

GAGE.--Water-stage recorder. Datum of gage is 214.37 ft above North American Vertical Datum of 1988. January 3, 2005 to April 17, 2008 gage temporarily located 300 ft upstream at same datum, due to bridge replacement. Satellite telemetry at streamgage.

REMARKS.--No estimated daily discharges. Records fair. Considerable diurnal fluctuation at low flow. Water was diverted from the Neuse River Basin for Durham municipal water supply and was returned to the Cape Fear River Basin, and the Neuse River Basin. Maximum gage height for period of record occurred as a result of backwater from B. Everett Jordan Lake; maximum gage height unaffected by backwater from B. Everett Jordan Lake, 14.05 ft, September 6, 1996. Minimum discharge for period of record as a result of regulation also occurred October 5, 22, 1996. Minimum discharge unregulated prior to 1988, 4.2 ft<sup>3</sup>/s, April 28, 29, May 1, 2, and July 10, 1985. Minimum discharge for current water year as a result of regulation, also occurred on October 26. Maximum discharge for period of record 12,700 ft<sup>3</sup>/s, from rating curve extended above 3,500 ft<sup>3</sup>/s by logarithmic plotting.

## Water-Data Report 2012

02097314 NEW HOPE CREEK NEAR BLANDS, NC—Continued

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

<b>Day</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>
<b>1</b>	23	3.2	127	59	46	69	68	22	32	11	30	12
<b>2</b>	18	3.6	126	49	43	48	60	19	83	12	18	11
<b>3</b>	16	4.1	109	42	39	141	47	18	39	12	13	103
<b>4</b>	15	37	93	36	35	405	38	18	22	11	12	210
<b>5</b>	15	82	76	32	34	340	64	20	17	11	11	70
<b>6</b>	14	147	61	28	33	151	68	178	16	12	13	34
<b>7</b>	14	129	51	25	31	86	54	120	17	14	21	255
<b>8</b>	13	107	61	23	30	51	37	52	16	11	23	148
<b>9</b>	12	86	60	22	111	47	30	33	14	11	16	96
<b>10</b>	13	61	61	21	181	60	27	94	13	49	14	55
<b>11</b>	13	43	57	22	150	39	23	81	15	162	20	29
<b>12</b>	14	34	51	28	57	30	21	37	148	111	48	22
<b>13</b>	18	27	45	33	31	25	21	26	208	33	29	18
<b>14</b>	17	22	39	35	24	22	20	43	98	19	18	16
<b>15</b>	14	21	34	35	20	21	18	201	31	15	14	14
<b>16</b>	13	19	31	33	18	19	19	121	20	14	12	14
<b>17</b>	14	22	39	31	25	20	48	56	16	13	11	19
<b>18</b>	14	24	51	30	28	101	20	38	15	13	10	51
<b>19</b>	139	25	60	29	27	149	18	27	14	18	63	493
<b>20</b>	189	26	62	27	95	125	20	21	16	70	158	794
<b>21</b>	58	26	61	30	123	268	18	19	16	27	56	152
<b>22</b>	22	26	67	36	101	253	61	22	14	41	24	47
<b>23</b>	13	28	89	39	86	145	157	160	27	29	21	33
<b>24</b>	10	30	104	40	81	140	104	205	25	18	17	28
<b>25</b>	5.8	30	104	40	80	526	53	65	18	18	17	21
<b>26</b>	1.2	31	94	38	77	663	38	36	15	15	22	18
<b>27</b>	1.6	30	86	37	63	418	49	25	14	14	15	15
<b>28</b>	2.2	29	89	39	103	174	34	21	12	106	13	12
<b>29</b>	4.0	62	86	43	136	109	25	29	12	208	18	32
<b>30</b>	3.7	98	79	48	---	74	24	20	12	72	17	120
<b>31</b>	3.0	---	69	48	---	54	---	24	---	54	13	---
<b>Total</b>	722.5	1,312.9	2,222	1,078	1,908	4,773	1,284	1,851	1,015	1,224	787	2,942
<b>Mean</b>	23.3	43.8	71.7	34.8	65.8	154	42.8	59.7	33.8	39.5	25.4	98.1
<b>Max</b>	189	147	127	59	181	663	157	205	208	208	158	794
<b>Min</b>	1.2	3.2	31	21	18	19	18	18	12	11	10	11
<b>Cfsm</b>	0.31	0.58	0.94	0.46	0.87	2.03	0.56	0.79	0.45	0.52	0.33	1.29
<b>In.</b>	0.35	0.64	1.09	0.53	0.94	2.34	0.63	0.91	0.50	0.60	0.39	1.44

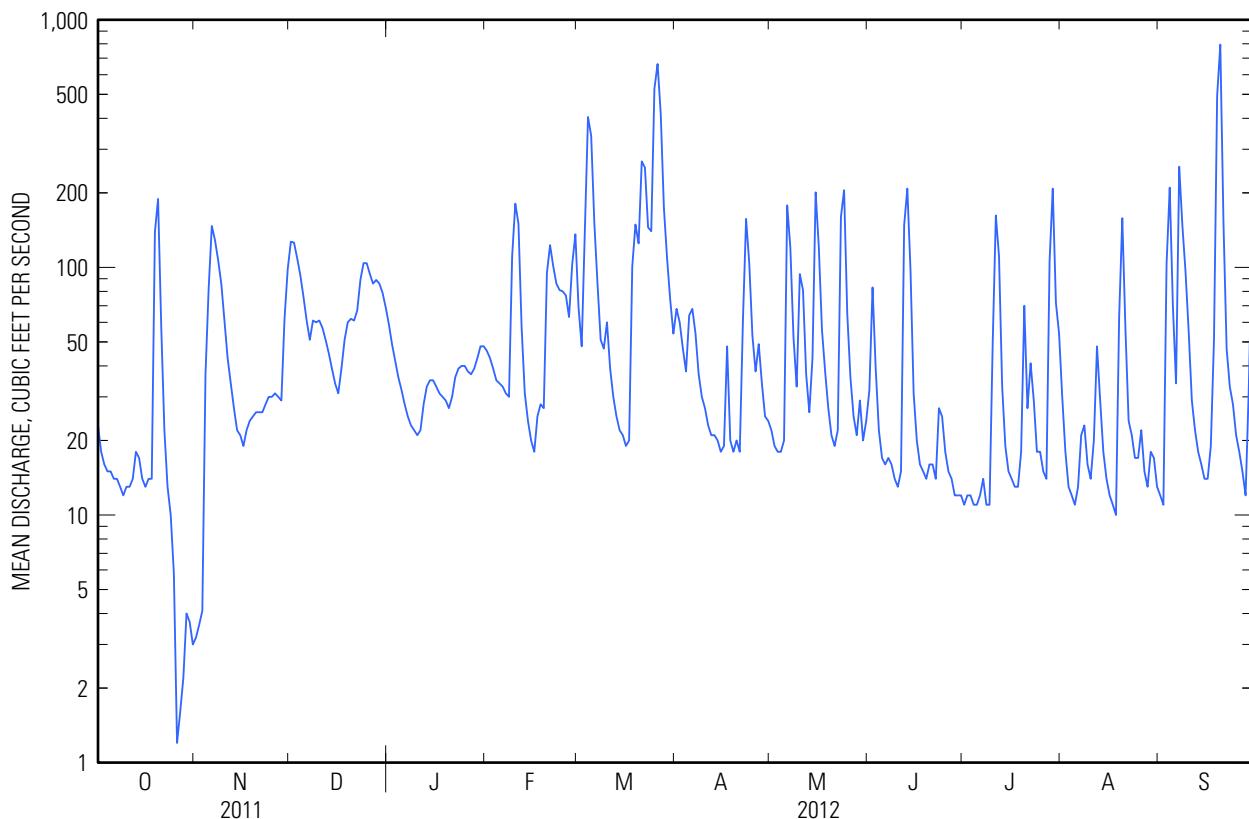
**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2012, BY WATER YEAR (WY)**

	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>
<b>Mean</b>	46.7	81.0	87.0	131	166	185	136	80.5	45.2	46.1	41.6	69.0
<b>Max</b>	231	477	264	509	463	493	618	411	154	156	121	507
(WY)	(2003)	(2007)	(1984)	(1991)	(1998)	(1998)	(1987)	(1997)	(1995)	(1995)	(2004)	(1999)
<b>Min</b>	12.8	12.6	17.0	28.1	58.2	42.0	13.5	18.1	13.1	12.9	12.4	10.8
(WY)	(1987)	(2008)	(1989)	(2011)	(2002)	(1985)	(1985)	(2002)	(2002)	(1993)	(2006)	(1984)

**02097314 NEW HOPE CREEK NEAR BLANDS, NC—Continued****SUMMARY STATISTICS**

	<b>Calendar Year 2011</b>	<b>Water Year 2012</b>		<b>Water Years 1983 - 2012</b>	
<b>Annual total</b>	18,919.4		21,119.4		
<b>Annual mean</b>	51.8		57.7		92.5
<b>Highest annual mean</b>				180	2003
<b>Lowest annual mean</b>				38.3	2002
<b>Highest daily mean</b>	710	May 28	794	Sep 20	6,300 Sep 6, 1996
<b>Lowest daily mean</b>	1.2	Oct 26	1.2	Oct 26	0.39 Dec 30, 1988
<b>Annual seven-day minimum</b>	2.7	Oct 26	2.7	Oct 26	2.7 Oct 26, 2011
<b>Maximum peak flow</b>			945	Sep 20	<sup>a</sup> 12,700 Sep 6, 1996
<b>Maximum peak stage</b>			9.06	Sep 20	<sup>a</sup> 18.96 Apr 15, 2003
<b>Instantaneous low flow</b>			<sup>a</sup> 1.1	Oct 25	<sup>a</sup> 0.00 Oct 4, 1996
<b>Annual runoff (cfsm)</b>	0.683		0.760		1.22
<b>Annual runoff (inches)</b>	9.27		10.35		16.56
<b>10 percent exceeds</b>	109		128		203
<b>50 percent exceeds</b>	25		30		33
<b>90 percent exceeds</b>	13		13		13

<sup>a</sup> See Remarks.



**02097314 NEW HOPE CREEK NEAR BLANDS, NC—Continued****WATER-QUALITY RECORDS**

PERIOD OF RECORD.--Water years 1983-86, 1989-95, 1997-99, 2001, 2004, 2006-12.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1982 to September 1985.

WATER TEMPERATURE: December 1982 to September 1985.

INSTRUMENTATION.--Water-quality monitor from October 1982 to September 1985.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 535 microsiemens, September 30, 1984; minimum, 38 microsiemens. March 6, 7, 1984.

WATER TEMPERATURE: Maximum, 27.5°C, August 23, 1983; minimum, 0.0°C, January 21, 22, 1985.

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

Part 1 of 5

[%; percent; N, nitrogen; P, phosphorus; SiO<sub>2</sub>, silicon dioxide; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter]

Date	Sample start time	Medium name	Sample type	Barometric pressure, mm Hg (00025)	Discharge, instantaneous, ft <sup>3</sup> /s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	pH, unfiltered, field, standard units (00400)	Specific conductance, water, unfiltered, µS/cm at 25°C (00095)
09-19-2012	1430	Surface water	Regular	760	479	5.9	66	6.6	78

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

Part 2 of 5

[%; percent; N, nitrogen; P, phosphorus; SiO<sub>2</sub>, silicon dioxide; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter]

Date	Sample start time	Dissolved solids		Magne-				Silica, water, filtered,		
		Tempera-ture, water, °C (00010)	dried at 180°C, water, filtered, mg/L (70300)	Calcium, water, filtered, mg/L (00915)	Sodium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	SiO <sub>2</sub> (00955)
09-19-2012	1430	21.2	62	4.81	1.43	2.78	5.66	5.15	0.07	5.26

## 02097314 NEW HOPE CREEK NEAR BLANDS, NC—Continued

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

Part 3 of 5

[%, percent; N, nitrogen; P, phosphorus; SiO<sub>2</sub>, silicon dioxide; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter]

Date	Sample start time	Ammonia		Nitrate		Orthophos-	Aluminum,	
		Sulfate, water, filtered, mg/L	plus organic nitrogen, water, unfiltered, mg/L as N (00945)	Ammonia, water, filtered, mg/L as N (00608)	nitrite, water, filtered, mg/L as N (00631)		Phosphorus, unfiltered, mg/L as P (00665)	water, recoverable, µg/L (01105)
09-19-2012	1430	6.05	0.97	0.015	0.41	0.054	0.254	1,370
								0.049

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

Part 4 of 5

[%, percent; N, nitrogen; P, phosphorus; SiO<sub>2</sub>, silicon dioxide; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter]

Date	Sample start time	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)	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)
09-19-2012	1430	2.4	1.1	5.8	2,040	4.02	162	0.026	0.28	2.4

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

Part 5 of 5

[%, percent; N, nitrogen; P, phosphorus; SiO<sub>2</sub>, silicon dioxide; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter]

Date	Sample start time	Silver, water, unfiltered, recoverable, µg/L (01077)	Zinc, water, unfiltered, recoverable, µg/L (01092)	Arsenic, water, unfiltered, recoverable, µg/L (01002)	Selenium, water, unfiltered, recoverable, µg/L (01147)	Organic carbon, water, unfiltered, µg/L (00680)
09-19-2012	1430	0.067	16.9	1.2	0.115	12.6