

# 03460795 PIGEON RIVER BELOW POWER PLANT NEAR WATERVILLE, NC

French Broad-Holston Basin Pigeon Subbasin

LOCATION.--Lat 35°47'01", long 83°06'43" referenced to North American Datum of 1983, Haywood County, NC, Hydrologic Unit 06010106, on left bank, 550 ft upstream of Browns Bridge on Waterville Road, 0.9 mi downstream of North Carolina and Tennessee state lines, 1.0 mi northwest of Waterville, and at river mile 25.

DRAINAGE AREA.--538 mi<sup>2</sup>.

### SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1997 to current year.

REVISED RECORDS.--WDR NC-04-1: 1997-1998 (annual maximum discharge), 2003 (annual maximum discharge).

- GAGE.--Water-stage recorder. Elevation of gage is 1,360 ft above National Geodetic Vertical Datum of 1929, from topographic map. Satellite telemetry at streamgage.
- REMARKS.--Records fair except those for estimated daily discharges, which are poor. Considerable regulation, caused by Walters Hydroelectric Plant, 1.0 mi upstream. Maximum discharge for period of record from rating curve extended above 11,000 ft<sup>3</sup>/s on basis of slope-conveyance measurement of peak flow. Minimum discharge for period of record and current water year affected by regulation.

# 03460795 PIGEON RIVER BELOW POWER PLANT NEAR WATERVILLE, NC—Continued

### DISCHARGE, CUBIC FEET PER SECOND WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010 DAILY MEAN VALUES

	[e, estimated]													
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
1	1,040	2,460	1,080	1,750	2,050	1,250	1,420	1,250	674	546	185	489		
2	664	2,070	1,230	1,570	2,340	1,070	1,270	1,470	673	201	174	473		
3	666	1,500	3,030	1,390	2,360	1,130	1,150	2,750	818	538	512	158		
4	815	1,230	2,100	1,300	2,360	1,530	871	2,150	608	170	491	491		
5	982	958	1,670	1,290	3,570	573	1,410	1,630	820	174	527	151		
6	995	1,240	1,450	1,220	6,000	340	1,150	1,200	593	483	592	146		
7	712	950	1,310	1,170	3,920	888	1,150	1,280	519	476	541	464		
8	694	908	1,240	1,160	2,800	827	1,230	946	559	461	212	361		
9	1,100	914	9,220	1,050	2,670	1,430	1,620	454	678	142	201	224		
10	803	1,770	4,240	1,020	2,550	1,490	1,470	957	582	480	490	160		
11	212	7,350	2,680	970	2,480	1,270	1,210	880	570	201	492	433		
12	686	5,470	2,220	1,010	2,450	1,620	1,570	1,040	514	387	488	1,020		
13	683	3,210	2,190	938	2,420	2,310	1,450	708	244	544	174	983		
14	e776	2,590	2,260	922	1,850	1,760	815	858	611	516	475	183		
15	1,060	2,160	1,920	909	1,820	1,720	1,140	917	722	473	173	260		
16	876	1,650	1,720	893	1,840	1,650	1,140	1,040	685	177	161	166		
17	1,060	2,140	1,580	1,820	1,850	1,600	758	957	568	761	472	207		
18	851	1,710	1,630	2,220	1,800	1,610	965	843	511	651	505	182		
19	929	2,380	1,740	1,780	1,300	1,070	897	752	531	600	544	156		
20	898	1,420	1,540	1,640	1,140	1,600	317	729	153	662	198	158		
21	808	1,500	1,400	1,680	908	856	277	661	277	633	506	155		
22	769	1,470	1,350	2,080	1,680	2,660	1,540	164	558	580	509	e153		
23	802	1,320	1,340	1,930	1,620	2,290	1,070	699	493	519	521	e155		
24	1,590	2,160	1,390	2,550	1,420	1,860	922	463	702	535	501	e153		
25	675	1,350	6,780	8,610	1,590	1,760	1,330	795	550	212	514	158		
26	1,010	1,120	5,660	4,350	1,320	1,730	1,580	559	541	174	500	982		
27	1,040	1,050	3,280	2,940	836	1,590	1,430	608	400	524	167	368		
28	2,470	992	2,590	1,890	395	1,680	1,560	732	934	551	527	767		
29	1,420	949	2,140	1,830		2,100	1,300	612	738	524	179	655		
30	1,820	946	1,880	2,550		1,620	1,070	424	535	202	176	853		
31	1,690		1,790	2,170		1,210		491		497	477			
Total	30,596	56,937	75,650	58,602	59,339	46,094	35,082	29,019	17,361	13,594	12,184	11,264		
Mean	987	1,898	2,440	1,890	2,119	1,487	1,169	936	579	439	393	375		
Max	2,470	7,350	9,220	8,610	6,000	2,660	1,620	2,750	934	761	592	1,020		
Min	212	908	1,080	893	395	340	277	164	153	142	161	146		

### STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2010, BY WATER YEAR (WY)

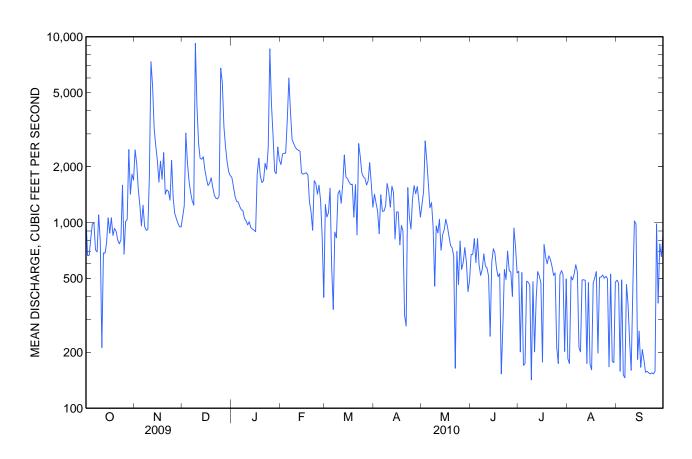
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	515	795	1,071	1,287	1,402	1,524	1,398	1,159	817	732	546	784
Max	1,462	1,898	2,440	2,187	3,096	3,505	2,540	2,835	1,742	1,860	1,203	4,517
(WY)	(2005)	(2010)	(2010)	(1998)	(1998)	(1997)	(1998)	(2003)	(2005)	(2005)	(2005)	(2004)
Min	153	234	499	703	593	762	785	483	365	290	293	172
(WY)	(1999)	(2009)	(2008)	(2008)	(2009)	(2006)	(2007)	(2007)	(2008)	(2008)	(2008)	(2007)

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		SOIMIMART SI	AUSUCS			
	Calendar Y	Calendar Year 2009 Water Year 2010 Wa				s 1997 - 2010
Annual total	413,438		445,722			
Annual mean	1,133		1,221		978	
Highest annual mean					1,553	2005
Lowest annual mean					582	2008
Highest daily mean	9,220	Dec 9	9,220	Dec 9	22,500	Sep 8, 2004
Lowest daily mean	130	Aug 31	142	Jul 9	74	Nov 19, 2000
Annual seven-day minimum	146	Sep 6	155	Sep 19	117	Oct 2, 1998
Maximum peak flow			15,900	Dec 9	<sup>a</sup> 39,000	Sep 17, 2004
Maximum peak stage			12.79	Dec 9	18.88	Sep 17, 2004
Instantaneous low flow			<sup>a</sup> 139	Jul 9	<sup>a</sup> 24	Jun 23, 2002
10 percent exceeds	2,120		2,270		1,930	
50 percent exceeds	914		957		758	
90 percent exceeds	285		212		176	

# SUMMARY STATISTICS

<sup>a</sup> See Remarks.



#### 03460795 PIGEON RIVER BELOW POWER PLANT NEAR WATERVILLE, NC—Continued

#### WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1997 to current year.

PERIOD OF DAILY RECORD .--

WATER TEMPERATURE: Water years 1997 to current year. DISSOLVED OXYGEN: Water years 1997 to current year.

INSTRUMENTATION .-- Water-quality monitor since May 1997.

REMARKS.--Data were collected during the current year for the months of May through September 2010.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 25.5°C, August 27, 2007, August 13, 2010; minimum recorded, 6.8°C, June 2, 2001. DISSOLVED OXYGEN: Maximum recorded, 15.8 mg/L, July 21, 2007; minimum recorded, 3.1 mg/L, November 1, 1998.

EXTREMES FOR CURRENT YEAR .--

WATER TEMPERATURE: Maximum recorded, 25.5°C, August 13; minimum recorded, 17.6°C, September 30. DISSOLVED OXYGEN: Maximum recorded, 8.9 mg/L, June 3; minimum recorded, 4.8 mg/L, September 13.

### TEMPERATURE, WATER, DEGREES CELSIUS WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Day	Max	Min	Mean									
		October			Novembe	r		Decembe	er		January	
1												
2												
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Month												

# 03460795 PIGEON RIVER BELOW POWER PLANT NEAR WATERVILLE, NC—Continued

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		February	/		March			April			May	
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15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26										19.0	18.0	18.5
27										19.5	17.9	18.6
28										19.9	18.4	18.9
29										19.6	18.5	18.9
30										19.7	18.3	18.9
31										19.7	18.5	19.0
											10.7	17.0
onth												

# TEMPERATURE, WATER, DEGREES CELSIUS WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

# 03460795 PIGEON RIVER BELOW POWER PLANT NEAR WATERVILLE, NC—Continued

	WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010													
Day	Max	Min	Mean	Мах	Min	Mean	Max	Min	Mean	Max	Min	Mean		
		June			July			August			Septembe	r		
1	19.8	18.7	19.3	23.6	21.4	22.5	24.9	23.3	23.9	24.1	22.6	23.4		
2	19.8	18.8	19.3	23.4	21.3	22.3	25.2	23.2	24.1	24.1	22.7	23.5		
3	20.1	18.3	19.2	23.7	21.6	22.7	25.0	23.4	24.1	24.4	22.8	23.5		
4	19.9	19.0	19.4	24.0	22.1	22.9	25.4	23.8	24.4	23.9	22.1	22.9		
5				24.3	21.9	22.9	25.1	22.6	24.4	23.6	21.8	22.6		
6	20.3			24.1	22.0	23.0	24.1	22.6	23.2	23.7	21.7	22.5		
7	20.3	18.8	19.6	24.3	22.4	23.3	24.2	22.5	23.4	23.4	21.5	22.4		
8	20.7	18.6	19.6	24.7	22.8	23.5	24.6	22.6	23.5	23.1	22.3	22.6		
9	20.6	19.1	19.9	24.7	23.0	23.5	24.5	22.9	23.6	22.9	21.9	22.5		
10	20.8	19.4	20.1	24.2	22.6	23.3	24.8	23.1	23.8	23.1	21.8	22.3		
11	21.0	19.6	20.4	24.8	22.8	23.6		23.4		22.4	21.7	21.9		
12	21.2	20.1	20.6	23.6	22.0	22.9	25.1			22.6	20.4	21.6		
13	21.8	20.2	20.9	23.7	21.8	22.7	25.5	23.7	24.5	22.6	19.8	21.5		
14	21.8	20.4	21.0	23.9	22.2	23.1	24.9	23.8	24.2	22.0	20.5	21.2		
15	21.8	20.3	20.9	24.3	22.2	23.2	25.3	23.4	24.2	22.1	20.5	21.2		
16	21.6	20.4	21.0	24.4	22.8	23.4	25.2	23.6	24.2	22.0	20.9	21.4		
17	21.9	20.5	21.1	23.8	22.2	23.0	24.6	23.5	24.0	21.7	20.7	21.1		
18	22.1	20.2	21.1	23.6	21.3	22.6	24.5	23.3	23.9	22.1	20.4	21.2		
19	22.3	20.8	21.4	23.1	20.8	21.8	24.3	23.4	23.8	22.3	20.6	21.3		
20	23.1	20.9	21.8	23.5	21.1	22.1	24.8	22.8	23.8	22.3	20.7	21.4		
21	22.5	20.6	21.5	23.6	21.0	22.2	24.4	23.2	23.7	22.5	20.8	21.4		
22	23.2	21.0	21.8	23.8	21.7	22.7	24.4	23.0	23.6	22.4				
23	22.8	21.5	22.0	24.5	21.9	23.0	24.2	22.7	23.5	22.4				
24	22.8	21.2	21.9	24.5	22.5	23.5	24.1	22.6	23.4	22.6				
25	23.0			24.6	22.9	23.6	24.2	22.8	23.5	21.9	21.0	21.3		
26	23.5	21.0	22.1	25.0	23.0	23.7	24.3	22.7	23.6	21.5	20.2	21.0		
27	23.5	21.6	22.5		22.9		24.6	22.8	23.6	21.0	19.0			
28	23.5	21.6	22.7	24.7			24.2	22.8	23.5	20.4				
29	23.2	21.4	22.4	24.8	23.2	23.9	24.6	22.9	23.6	20.8	17.7	18.9		
30	23.4	21.4	22.3	25.3			24.5	22.9	23.5	20.4	17.6	19.3		
31				24.3	23.2	23.7	24.1	22.7	23.4					
Nonth										24.4				

### TEMPERATURE, WATER, DEGREES CELSIUS WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

# 03460795 PIGEON RIVER BELOW POWER PLANT NEAR WATERVILLE, NC—Continued

# DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Day	Мах	Min	Mean	Max	Min	Mean	Max	Min	Mean	Мах	Min	Mean
		October			Novembe	r		Decembe	r		January	
1												
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25 30												
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# 03460795 PIGEON RIVER BELOW POWER PLANT NEAR WATERVILLE, NC—Continued

Day	Мах	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		February			March			April			May	
1												
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21												
22												
23												
24												
25												
26										9.2	7.8	8.3
27										8.9	7.4	8.1
28										8.5	6.8	7.6
29										8.6	7.2	7.7
30										8.6	7.3	8.0
31										8.6	7.3	7.9
onth												

# DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

# 03460795 PIGEON RIVER BELOW POWER PLANT NEAR WATERVILLE, NC—Continued

Day	Мах	Min	Mean	Max	Min	Mean	Max	Min	Mean	Мах	Min	Mean
Duy	Mux		Moun	mux		Mean	mux					
		June			July			August			Septembe	)r
1	8.6	7.1	7.7	8.1	5.8	6.9	7.8	6.3	6.9	7.6	5.1	6.0
2	8.6	7.3	7.7	8.0	6.7	7.2	7.6	6.0	6.8	7.5	5.3	6.1
3	8.9	7.0	7.8	8.1	5.9	6.9	7.3	5.3	6.2	7.4	5.9	6.5
4	8.4	7.0	7.8	8.2	6.6	7.2	7.4	5.2	6.0	7.8	5.3	6.3
5				8.3	6.8	7.3	7.3	5.1	6.0	7.7	6.2	6.6
6		7.0		8.1	5.9	6.8	7.9	5.9	6.8	7.7	6.2	6.7
7	8.2	6.7	7.6	8.1	5.8	6.6	8.0	5.7	6.7	7.9	5.3	6.3
8	8.6	6.8	7.8	7.9	5.7	6.5	7.8	6.5	7.0	7.2	5.6	6.1
9	8.7	6.6	7.6	8.1	6.2	6.9	7.8	6.7	7.1	7.6	5.5	6.4
10	8.6	6.9	7.6	8.2	5.9	6.7	7.6	5.7	6.5	7.6	6.1	6.5
11	8.2	6.9	7.5	7.8	6.1	6.9	7.6	5.8		7.2	5.5	6.4
12	8.3	7.1	7.6	7.4	6.1	6.7	7.6	5.2		7.7	5.4	6.4
13	8.3	7.2	7.6	8.0	5.6	6.8	7.3	6.0	6.5	7.1	4.8	6.0
14	8.1	6.3	7.3	8.0	5.9	6.6	7.4	5.5	6.2	7.3	6.1	6.6
15	8.2	6.2	7.2	7.7	5.6	6.5	7.8	6.2	6.8	7.5	5.9	6.5
16	8.1	6.6	7.2	7.7	6.4	6.9	7.5	5.8	6.7	7.5	6.2	6.6
17	8.2	6.4	7.2	7.6	5.5	6.6	7.5	5.5	6.2	7.8	6.3	7.0
18	7.9	6.4	7.3	8.0	5.6	7.0	7.3	5.4	6.2	7.9	6.5	7.0
19	8.0	5.9	7.1	8.1	6.1	7.2	7.4	5.5	6.3	8.0	6.5	6.9
20	8.3	6.9	7.5	8.1	5.6	7.0	7.4	6.4	6.8	8.0	6.5	6.9
21	7.8	6.3	7.2	8.1	5.7	7.1	7.0	5.5	6.4	8.0	6.4	6.9
22	7.9	6.0	6.9	7.8	5.6	6.7	7.8	5.7	6.5	8.1		
23	8.0	5.8	6.9	7.9	5.3	6.7	7.7	5.6	6.5	7.9	6.4	
24	7.8	5.8	6.9	7.9	5.2	6.4	7.7	5.6	6.4	7.9	6.3	
25	8.4	5.9		8.0	6.2	6.8	7.7	5.4	6.4	7.8	6.4	6.8
26	8.1	5.7	7.0	8.0	6.6	7.1	7.6	5.5	6.3	7.6	5.6	6.4
27	7.9	5.8	7.1	7.8	5.8	6.7	7.7	6.3	6.8	8.2		
28	7.1	5.9	6.6	7.7	5.4		7.8	5.6	6.4		6.5	
29	7.9	5.8	6.9	7.4	5.4	6.4	7.9	6.3	6.9	8.3	6.1	7.6
30	7.5	5.8	6.9	7.7			7.9	6.1	6.9	8.2	6.4	7.2
31				7.1	5.3	6.3	7.8	5.4	6.2			
lonth				8.3			8.0	5.1				

## DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010