

**02037500 JAMES RIVER NEAR RICHMOND, VA**

James Basin  
Middle James-Willis Subbasin

LOCATION.--Lat 37°33'47", long 77°32'50" referenced to North American Datum of 1927, Henrico County, VA, Hydrologic Unit 02080205, on left bank 0.2 mi upstream from Huguenot Memorial Bridge, 0.5 mi southwest of Richmond city limits, 1.7 mi downstream from Boshier Dam, 3.3 mi upstream from Powhite Creek, and at mile 116.6.

DRAINAGE AREA.--6,753 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--October 1934 to current year. Gage-height records collected in vicinity of Mayó's Bridge, at mile 109.5, 1876-1956, and at mile 108.7 since 1957, are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 972: 1936(M). WSP 1433: 1951(M). OFR 2006-1308: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 98.82 ft NGVD of 1929.

COOPERATION.--Records were provided by the Virginia Department of Environmental Quality - Water Division.

REMARKS.--Records good. Diversion from 40 ft<sup>3</sup>/s to 90 ft<sup>3</sup>/s from river downstream from gage except during periods of low flow. Flow regulated by powerplants upstream from station. Above 18.2 ft stage, there is interchange of flow with James River and Kanawha Canal. Records of daily discharge include diversion by city of Richmond but do not include flow in James River and Kanawha Canal (station 02037000) which diverts around station. National Weather Service gage-height telemeter at station. Maximum discharge, 313,000 ft<sup>3</sup>/s, includes canal flow. Minimum daily discharge of James River and James River and Kanawha Canal combined, 214 ft<sup>3</sup>/s, Oct. 5, 1941, caused by recharging of the pool above Boshier Dam after the canal gates were closed. Since 1982, low flows during summer months are augmented by releases from Lake Moomaw, station 02011795. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50,000 ft<sup>3</sup>/s and (or) maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec 9	0800	*68,600	*15.51

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**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	3,300	4,380	21,800	11,300	8,790	15,900	11,600	9,860	4,650	1,760	1,530	1,820
2	2,800	3,670	20,500	10,100	8,330	21,400	10,400	8,670	5,680	1,600	1,730	1,630
3	2,840	3,450	12,700	8,800	8,610	41,500	9,170	7,870	6,340	1,310	1,720	1,680
4	2,610	3,310	9,120	7,620	8,460	36,900	8,010	7,340	5,240	1,360	1,710	1,960
5	2,290	3,160	7,180	7,000	7,780	33,500	7,430	6,950	4,490	1,390	1,540	2,120
6	2,160	3,090	6,090	6,550	7,240	27,500	7,140	6,870	3,900	1,380	1,660	2,300
7	2,120	3,080	5,900	6,330	6,800	21,300	6,560	6,440	3,630	1,460	1,620	2,220
8	1,970	2,840	46,000	5,980	6,450	16,700	6,190	5,940	3,540	1,450	1,470	2,390
9	1,880	2,740	67,400	5,760	6,340	13,800	5,860	5,810	3,470	1,360	1,770	2,140
10	1,800	2,700	48,200	5,800	6,150	12,000	5,590	6,870	3,340	1,400	2,300	2,090
11	1,820	2,690	24,500	5,520	5,840	11,000	5,310	7,810	3,140	1,340	2,090	2,010
12	1,990	2,650	16,800	7,180	5,450	9,820	4,960	7,800	2,980	1,570	1,890	1,770
13	7,140	2,450	12,600	15,700	5,170	8,760	4,800	7,000	3,270	1,670	2,310	1,720
14	27,900	2,400	10,200	13,900	4,750	8,180	4,650	6,210	4,500	1,380	2,340	1,560
15	13,900	2,380	8,710	14,700	4,720	7,670	4,550	5,870	4,710	1,410	2,000	1,450
16	8,850	2,530	7,660	15,100	4,630	7,330	4,470	24,000	3,870	1,430	1,690	1,420
17	6,320	4,880	7,560	12,400	4,590	7,030	4,340	26,500	3,380	1,500	1,490	1,370
18	5,040	8,090	7,380	10,500	4,670	6,680	4,220	16,900	3,110	1,580	1,550	1,360
19	4,490	6,120	6,570	8,990	4,850	6,210	4,190	12,600	3,020	1,960	1,770	1,480
20	5,080	4,900	5,940	8,430	5,120	6,010	4,410	10,400	2,520	1,700	1,690	2,020
21	5,630	4,300	5,750	8,930	5,660	6,590	4,610	9,620	2,670	1,620	1,640	5,490
22	4,480	3,850	5,610	9,910	6,000	7,510	4,780	8,020	2,680	1,490	1,650	6,960
23	3,820	4,010	7,200	10,300	6,550	9,120	5,490	e7,320	2,980	1,590	1,820	4,540
24	3,440	7,490	16,400	13,200	9,030	9,160	5,700	8,870	2,850	1,880	2,140	3,370
25	3,180	7,910	21,400	12,500	9,710	16,300	5,850	9,340	2,550	1,990	2,000	2,690
26	3,090	6,240	19,500	11,500	10,500	40,600	5,890	8,220	2,390	1,810	2,090	2,320
27	2,940	6,180	15,100	10,600	9,260	35,600	6,300	7,050	2,270	1,810	7,550	2,010
28	2,820	5,520	16,000	10,200	8,430	25,300	8,490	6,040	2,170	1,770	5,340	1,800
29	3,150	5,070	17,000	11,100	8,180	19,600	14,900	5,290	1,960	1,620	3,390	1,710
30	3,960	7,270	14,000	10,300	---	16,100	11,900	4,720	1,860	1,550	2,430	1,860
31	5,210	---	12,700	9,550	---	13,500	---	4,330	---	1,470	2,040	---
<b>Total</b>	148,020	129,350	503,470	305,750	198,060	518,570	197,760	276,530	103,160	48,610	67,960	69,260
<b>Mean</b>	4,775	4,312	16,240	9,863	6,830	16,730	6,592	8,920	3,439	1,568	2,192	2,309
<b>Max</b>	27,900	8,090	67,400	15,700	10,500	41,500	14,900	26,500	6,340	1,990	7,550	6,960
<b>Min</b>	1,800	2,380	5,610	5,520	4,590	6,010	4,190	4,330	1,860	1,310	1,470	1,360
<b>Cfsm</b>	0.71	0.64	2.40	1.46	1.01	2.48	0.98	1.32	0.51	0.23	0.32	0.34
<b>In.</b>	0.82	0.71	2.77	1.68	1.09	2.86	1.09	1.52	0.57	0.27	0.37	0.38

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	4,046	5,032	7,262	9,017	10,340	12,630	10,850	7,888	5,550	3,131	3,399	3,400
<b>Max</b>	19,090	30,480	26,480	25,300	34,960	32,740	35,900	24,280	30,910	11,300	21,710	18,390
<b>(WY)</b>	(1938)	(1986)	(1949)	(1937)	(1998)	(1993)	(1987)	(1989)	(1972)	(1972)	(1969)	(1996)
<b>Min</b>	177	338	450	837	1,652	2,988	2,766	2,137	904	76.1	149	125
<b>(WY)</b>	(1942)	(1942)	(1966)	(1966)	(2002)	(1981)	(1966)	(1941)	(1964)	(1966)	(1966)	(1963)

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SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1937 - 2012	
<b>Annual total</b>	2,718,204		2,566,500			
<b>Annual mean</b>	7,447		7,012		6,860	
<b>Highest annual mean</b>					13,540	1973
<b>Lowest annual mean</b>					2,110	2002
<b>Highest daily mean</b>	67,400	Dec 9	67,400	Dec 9	<sup>a</sup> 296,000	Jun 23, 1972
<b>Lowest daily mean</b>	929	Aug 7	1,310	Jul 3	<sup>b</sup> 10	Many days <sup>c</sup>
<b>Annual seven-day minimum</b>	1,040	Aug 7	1,390	Jul 3	10	Many days
<b>Maximum peak flow</b>			68,600	Dec 9	313,000	Jun 23, 1972
<b>Maximum peak stage</b>			15.51	Dec 9	28.62	Jun 23, 1972
<b>Instantaneous low flow</b>			1,210	Jul 3 <sup>d</sup>	(e)	
<b>Annual runoff (cfsm)</b>	1.10		1.04		1.02	
<b>Annual runoff (inches)</b>	14.97		14.14		13.80	
<b>10 percent exceeds</b>	17,400		13,900		15,000	
<b>50 percent exceeds</b>	3,930		5,220		4,120	
<b>90 percent exceeds</b>	1,510		1,650		1,000	

<sup>a</sup> Includes canal flow.

<sup>b</sup> Result of diversion.

<sup>c</sup> In September 1966, September and October 1968, and October 1970.

<sup>d</sup> Also July 4, 2012.

<sup>e</sup> Not determined.

