

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 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1934 to current year. Gage-height records collected in vicinity of Mayós 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 ft³/s to 90 ft³/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 ft³/s, includes canal flow. Minimum daily discharge of James River and James River and Kanawha Canal combined, 214 ft³/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 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb 2	0345	66,100	14.95
May 10	0030	*66,700	*15.00

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1,780	3,870	1,750	3,960	53,200	7,400	6,590	6,320	4,370	7,800	4,510	3,480
2	1,800	2,790	1,710	3,630	58,700	7,040	6,490	5,760	4,020	8,960	5,030	7,030
3	1,960	2,280	1,720	3,300	29,900	6,540	6,530	5,600	3,880	7,980	5,220	5,010
4	2,780	2,080	1,710	3,170	18,700	5,850	6,450	5,440	3,930	15,800	4,060	3,920
5	2,610	1,920	1,710	3,000	13,900	5,270	7,620	5,060	4,200	16,600	3,510	3,350
6	2,360	1,840	1,710	2,810	11,200	5,910	9,250	4,770	3,700	31,600	3,360	2,850
7	2,220	1,720	1,700	2,740	9,410	10,200	8,800	5,490	6,270	19,900	3,890	2,780
8	2,360	1,690	1,870	2,660	8,460	13,200	8,560	24,700	34,500	13,600	6,760	2,700
9	1,970	1,670	1,830	2,590	7,710	12,300	9,160	61,400	21,300	10,500	3,910	2,340
10	1,760	1,660	1,830	2,510	7,190	11,200	8,220	57,100	17,900	9,430	3,790	2,240
11	1,740	1,640	1,800	2,200	6,380	9,500	7,550	34,800	29,200	11,100	4,910	2,050
12	1,720	1,630	1,730	2,350	5,820	8,730	7,290	25,400	34,400	15,200	5,550	1,850
13	1,690	1,640	1,710	2,390	5,410	17,700	8,480	20,000	33,700	35,200	5,580	2,030
14	1,590	1,670	1,670	2,410	4,980	27,900	14,200	16,600	23,200	21,100	4,330	2,040
15	1,570	1,830	1,610	2,900	4,670	23,200	16,400	13,100	18,500	15,400	3,820	1,930
16	1,550	2,080	1,640	5,720	4,490	16,500	13,000	10,700	14,800	11,600	3,350	1,850
17	1,510	2,170	1,680	17,400	4,350	14,300	11,800	9,510	12,100	9,160	3,080	1,820
18	1,520	2,140	1,680	38,800	4,250	13,400	11,600	9,030	10,700	7,730	3,250	1,770
19	1,620	2,080	1,710	36,500	4,050	13,900	11,000	8,920	18,000	7,340	5,430	1,730
20	1,670	2,080	1,720	22,800	3,820	14,600	10,700	8,780	16,800	6,490	7,330	1,590
21	2,090	2,040	1,920	16,200	3,790	13,100	12,200	8,450	16,200	5,980	5,480	1,720
22	e1,990	1,940	1,990	12,100	3,670	12,300	13,600	e8,650	13,100	6,400	4,300	1,910
23	e1,880	1,930	2,680	9,740	3,570	11,400	13,000	8,400	10,600	6,600	4,370	1,950
24	1,630	1,910	2,710	8,180	3,460	10,100	10,800	7,640	8,750	6,540	5,810	2,110
25	1,540	1,870	2,380	6,980	3,330	9,330	9,490	8,040	7,450	7,460	5,370	2,260
26	1,510	1,840	2,570	5,970	3,320	9,230	8,400	8,940	6,660	7,340	4,560	2,140
27	1,490	1,830	4,040	5,380	4,050	9,340	7,500	7,590	6,920	6,100	3,730	2,010
28	1,530	1,810	7,490	5,080	8,300	8,790	6,780	6,720	7,300	5,120	3,340	1,880
29	1,620	1,760	6,150	4,770	---	7,890	6,430	5,820	6,020	5,060	3,120	2,060
30	2,100	1,750	5,100	4,670	---	7,270	6,390	5,270	5,170	4,780	3,020	1,710
31	3,060	---	4,550	6,450	---	6,930	---	4,800	---	4,450	3,050	---
Total	58,220	59,160	76,070	249,360	300,080	350,320	284,280	418,800	403,640	348,320	136,820	74,110
Mean	1,878	1,972	2,454	8,044	10,720	11,300	9,476	13,510	13,450	11,240	4,414	2,470
Max	3,060	3,870	7,490	38,800	58,700	27,900	16,400	61,400	34,500	35,200	7,330	7,030
Min	1,490	1,630	1,610	2,200	3,320	5,270	6,390	4,770	3,700	4,450	3,020	1,590
Cfsm	0.28	0.29	0.36	1.19	1.59	1.67	1.40	2.00	1.99	1.66	0.65	0.37
In.	0.32	0.33	0.42	1.37	1.65	1.93	1.57	2.31	2.22	1.92	0.75	0.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	4,018	4,992	7,199	9,004	10,350	12,610	10,830	7,961	5,653	3,236	3,412	3,388
Max	19,090	30,480	26,480	25,300	34,960	32,740	35,900	24,280	30,910	11,300	21,710	18,390
(WY)	(1938)	(1986)	(1949)	(1937)	(1998)	(1993)	(1987)	(1989)	(1972)	(1972)	(1969)	(1996)
Min	177	338	450	837	1,652	2,988	2,766	2,137	904	76.1	149	125
(WY)	(1942)	(1942)	(1966)	(1966)	(2002)	(1981)	(1966)	(1941)	(1964)	(1966)	(1966)	(1963)

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SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1937 - 2013	
Annual total	1,979,110		2,759,180			
Annual mean	5,407		7,559		6,869	
Highest annual mean					13,540	1973
Lowest annual mean					2,110	2002
Highest daily mean	41,500	Mar 3	61,400	May 9	^a 296,000 Jun 23, 1972	
Lowest daily mean	1,310	Jul 3	1,490	Oct 27	^b 10	Many days ^c
Annual seven-day minimum	1,390	Jul 3	1,580	Oct 14	10	Many days
Maximum peak flow			66,700	May 10	313,000	Jun 23, 1972
Maximum peak stage			15.00	May 10	28.62	Jun 23, 1972
Instantaneous low flow			1,470	Oct 26 ^d	(e)	
Annual runoff (cfsm)	0.801		1.12		1.02	
Annual runoff (inches)	10.90		15.20		13.82	
10 percent exceeds	10,500		16,200		15,000	
50 percent exceeds	3,040		5,060		4,120	
90 percent exceeds	1,580		1,720		1,010	

^a Includes canal flow.

^b Result of diversion.

^c In September 1966, September and October 1968, and October 1970.

^d Also Oct. 27, 2012.

^e Not determined.

