

Water-Data Report 2011

**01589100 EAST BRANCH HERBERT RUN AT ARBUTUS, MD**

Upper Chesapeake Basin  
Gunpowder-Patapsco Subbasin

LOCATION.--Lat 39°14'24.0", long 76°41'31.9" referenced to North American Datum of 1983, Baltimore County, MD, Hydrologic Unit 02060003, on left bank 50 ft upstream from bridge on Tom Day Boulevard at U.S. Route 1 in Arbutus, 0.5 mi upstream from mouth, and 2 mi south of Baltimore City limits.

DRAINAGE AREA.--2.47 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--August 1957 to September 1989, October 1998 to current year.

REVISED RECORDS.--WDR MD-DE-81: 1979.

GAGE.--Water-stage recorder, V-notch sharp crested weir, and crest-stage gage. Elevation of gage is 45 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to August 1981 at site 100 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good except those above 100 ft<sup>3</sup>/s, which are fair. Slight regulation at low flow from unknown source upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location. U.S. Geological Survey satellite collection platform at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft<sup>3</sup>/s and (or) maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jun 12	1645	545	4.63
Jul 7	1930	586	4.86
Jul 7	2050	462	4.17
Aug 15	0805	745	5.73
Aug 21	1435	428	4.03
Sep 7	1245	*856	*6.31
Sep 7	2330	489	4.31
Sep 23	1210	616	5.03

Minimum discharge, 0.22 ft<sup>3</sup>/s, July 29.

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**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**  
**DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	23	0.55	19	0.84	1.0	2.4	3.6	1.6	0.68	0.57	2.4	1.2
2	3.9	0.55	1.4	1.1	28	1.6	2.0	1.4	0.68	0.67	0.83	2.2
3	4.0	0.55	0.71	0.74	3.9	1.2	1.7	1.2	0.72	4.0	8.2	1.5
4	13	21	0.56	0.73	2.1	1.2	2.0	8.3	0.71	0.80	1.9	1.1
5	2.5	2.2	0.54	0.73	7.5	1.2	6.6	1.5	0.72	0.71	0.63	12
6	1.6	1.0	0.68	0.68	4.4	21	1.8	1.3	0.65	0.59	6.1	28
7	1.2	0.88	0.73	0.63	2.7	6.7	1.4	1.2	0.51	44	4.4	100
8	0.92	0.88	0.73	0.58	2.2	2.1	6.4	1.0	0.51	10	0.78	89
9	0.82	0.77	0.75	0.52	1.4	1.6	2.3	0.97	1.1	1.5	0.61	22
10	0.78	0.85	0.71	0.55	1.2	100	1.5	0.90	7.5	0.67	0.56	6.1
11	0.99	0.81	0.74	0.60	1.1	12	1.5	0.85	1.5	0.54	0.49	7.2
12	1.8	0.79	17	1.2	1.1	4.8	6.3	0.84	18	0.56	0.50	4.6
13	1.4	0.73	3.0	0.69	1.1	2.9	6.0	0.85	2.5	0.88	12	2.9
14	14	0.70	1.2	0.58	1.4	2.3	1.9	5.7	0.94	0.45	17	2.6
15	1.8	0.69	0.96	0.58	1.4	2.6	1.5	9.5	0.84	0.42	61	2.5
16	0.81	3.6	0.93	0.57	1.4	14	21	2.1	1.1	0.38	2.4	2.1
17	0.85	4.3	1.1	0.55	1.2	2.6	5.3	1.6	1.1	0.37	1.0	1.9
18	0.99	0.80	0.93	6.0	1.2	2.1	2.4	3.9	0.94	0.35	0.80	1.8
19	6.3	0.63	0.86	2.0	1.1	1.8	3.6	2.0	0.81	0.57	0.81	1.7
20	0.96	0.67	0.84	0.79	1.1	1.7	2.0	1.3	1.0	0.43	0.78	1.9
21	0.79	0.69	0.82	1.2	1.3	5.8	1.6	0.94	1.2	0.33	22	1.7
22	1.5	0.75	0.82	0.53	4.0	2.5	2.9	0.93	0.94	0.35	2.2	2.9
23	2.1	0.74	0.75	0.52	2.0	6.3	4.0	0.92	0.78	0.56	1.1	63
24	2.2	0.73	0.74	0.51	2.3	3.5	13	0.92	0.73	0.50	0.92	7.1
25	2.6	0.81	0.73	0.56	17	1.7	5.1	0.83	0.68	5.2	5.0	3.4
26	2.7	0.79	0.75	4.3	2.4	1.5	2.2	0.80	0.68	0.61	1.3	2.9
27	11	0.72	0.74	5.9	1.6	1.4	1.7	0.74	0.71	0.34	63	2.5
28	2.9	0.69	0.74	2.7	9.6	1.4	2.6	0.77	0.94	0.33	59	9.5
29	2.7	0.69	0.74	1.5	---	1.3	1.4	0.72	0.59	0.37	4.1	4.3
30	1.6	1.5	0.75	1.4	---	2.0	1.3	0.64	0.53	0.40	2.2	2.3
31	0.62	---	0.78	1.0	---	2.3	---	0.59	---	0.39	1.5	---
<b>Total</b>	112.33	51.06	61.73	40.78	106.7	215.5	116.6	56.81	50.29	77.84	285.51	391.9
<b>Mean</b>	3.62	1.70	1.99	1.32	3.81	6.95	3.89	1.83	1.68	2.51	9.21	13.1
<b>Max</b>	23	21	19	6.0	28	100	21	9.5	18	44	63	100
<b>Min</b>	0.62	0.55	0.54	0.51	1.0	1.2	1.3	0.59	0.51	0.33	0.49	1.1
<b>Cfsm</b>	1.47	0.69	0.81	0.53	1.54	2.81	1.57	0.74	0.68	1.02	3.73	5.29
<b>In.</b>	1.69	0.77	0.93	0.61	1.61	3.25	1.76	0.86	0.76	1.17	4.30	5.90

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 – 1989, 1999 – 2011, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	2.63	2.88	3.48	3.22	3.94	4.31	3.80	3.47	3.15	2.96	3.04	3.89
<b>Max</b>	8.91	8.39	10.4	13.4	11.0	10.7	11.8	10.6	13.5	10.2	13.5	15.7
<b>(WY)</b>	(2006)	(1973)	(2010)	(1979)	(1979)	(1958)	(1983)	(1989)	(1972)	(1975)	(1979)	(1979)
<b>Min</b>	0.58	0.63	0.70	0.56	0.73	0.85	1.20	0.89	0.95	0.78	0.70	0.59
<b>(WY)</b>	(2001)	(1982)	(1981)	(1981)	(2002)	(2006)	(1985)	(1986)	(1986)	(1966)	(2006)	(2005)

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SUMMARY STATISTICS

	Calendar Year 2010		Water Year 2011		Water Years 1957 – 1989, 1999 - 2011	
<b>Annual total</b>	1,439.10		1,567.05			
<b>Annual mean</b>	3.94		4.29		3.39	
<b>Highest annual mean</b>					6.85 1979	
<b>Lowest annual mean</b>					1.87 2002	
<b>Highest daily mean</b>	150	Sep 30	100	Mar 10	200	Jun 22, 1972
<b>Lowest daily mean</b>	0.54	Dec 5	0.33	Jul 21 <sup>a</sup>	0.21	Aug 10, 1999
<b>Annual seven-day minimum</b>	0.67	Dec 3	0.40	Jul 16	0.24	Aug 6, 1999
<b>Maximum peak flow</b>			856	Sep 7	<sup>b</sup> 2,460	Sep 6, 1979
<b>Maximum peak stage</b>			6.31	Sep 7	<sup>c</sup> 13.70	Sep 6, 1979
<b>Instantaneous low flow</b>			0.22	Jul 29	0.16	Aug 7, 1999 <sup>d</sup>
<b>Annual runoff (cfsm)</b>	1.60		1.74		1.37	
<b>Annual runoff (inches)</b>	21.67		23.60		18.67	
<b>10 percent exceeds</b>	7.6		7.5		6.2	
<b>50 percent exceeds</b>	1.8		1.2		1.4	
<b>90 percent exceeds</b>	0.78		0.57		0.61	

<sup>a</sup> July 21, 28.

<sup>b</sup> From rating curve extended above 280 ft<sup>3</sup>/s on basis of culvert measurement at gage height 5.0 ft, present site, and culvert and flow-over-road measurement of peak flow at gage height 13.7 ft, present site.

<sup>c</sup> From floodmarks.

<sup>d</sup> Aug. 7, 10, 1999.

