



Water-Data Report 2009

**01403540 STONY BROOK AT WATCHUNG, NJ**

RARITAN RIVER BASIN

LOCATION.--Lat 40°38'11", long 74°27'05" referenced to North American Datum of 1983, Watchung Borough, Somerset County, NJ, Hydrologic Unit 02030105, on right bank at Watchung Borough Administration Building in Watchung, 150 ft downstream from bridge on Mountain Boulevard, 400 ft downstream from East Branch Stony Brook, and 2.9 mi upstream from confluence with Green Brook.

DRAINAGE AREA.--5.51 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--October 1974 to current year.

REVISED RECORDS.--WDR NJ-86-1: 1973 (P).

GAGE.--Water-stage and precipitation recorder and crest-stage gage. Datum of gage is 162.24 ft above NGVD of 1929. Prior to Oct 1, 1996, at datum 10.00 ft higher.

REMARKS.--Records good, except estimated daily discharges, which are fair. Occasional regulation from Watchung and Best Lakes directly upstream from station and other small lakes. Several measurements of water temperature were made during the year. Channel significantly enlarged and modified in 1991, and modified again in 1997 when the right wall was replaced. Satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug 2, 1973 reached a stage of 24.5 ft (from floodmark; adjusted to current datum), discharge, 10,500 ft<sup>3</sup>/s (highest since 1896; from slope-area measurements of peak flow).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft<sup>3</sup>/s and (or) maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec 12	0500	579	12.70
May 7	0115	615	12.77
Aug 2	1330	*922	*13.31
Aug 22	0230	779	13.07

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**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	e6.0	4.0	17	8.5	5.1	4.7	6.6	7.2	3.1	4.4	8.0	3.8
2	4.0	3.5	8.4	8.5	6.4	5.0	10	9.1	3.9	5.7	66	3.3
3	3.0	3.3	6.4	7.5	7.2	4.3	43	11	4.8	4.3	8.0	3.0
4	2.1	3.0	5.6	6.8	5.8	4.2	17	21	21	3.6	6.8	2.7
5	2.1	3.2	5.2	6.7	4.7	4.1	12	21	18	3.2	5.0	2.5
6	1.9	4.9	4.8	6.3	4.5	4.7	15	44	15	2.9	3.4	2.3
7	1.8	4.0	4.6	61	4.5	5.4	14	131	7.1	2.8	2.9	2.1
8	1.6	3.1	4.0	19	17	5.2	10	25	5.4	2.7	2.5	2.2
9	1.9	3.4	3.9	12	10	6.5	8.9	22	7.7	2.5	2.6	2.2
10	1.8	3.5	7.2	9.8	7.8	6.2	8.3	14	5.7	2.4	2.6	2.1
11	1.6	3.2	87	9.8	9.4	5.5	13	15	5.6	2.5	2.3	4.1
12	1.7	3.0	172	8.4	12	4.9	12	12	6.1	7.1	16	7.7
13	1.6	5.8	17	7.6	7.7	4.6	8.9	9.7	5.6	3.1	9.5	4.4
14	1.6	9.6	11	7.2	7.2	4.5	8.8	7.2	8.5	2.5	4.6	3.1
15	1.6	38	13	6.5	6.7	4.3	13	5.9	5.4	2.3	3.1	2.6
16	1.7	21	9.6	5.8	6.1	4.2	9.3	7.2	4.8	2.2	2.6	2.5
17	1.6	8.1	19	5.5	5.8	4.1	8.1	16	4.2	3.2	2.3	2.4
18	2.3	7.6	20	5.5	5.9	3.8	7.5	7.4	72	4.9	2.2	2.3
19	2.3	5.4	16	5.5	8.4	4.1	7.1	6.3	17	2.4	2.1	2.2
20	2.3	4.8	14	5.3	6.7	4.1	25	5.5	17	2.0	2.0	2.0
21	2.5	4.3	11	4.8	5.4	3.8	35	5.0	14	7.5	5.5	1.8
22	2.4	3.8	9.9	4.6	5.4	3.7	25	4.6	10	4.1	73	1.9
23	2.4	3.6	8.9	4.4	5.4	3.5	14	5.0	7.9	2.9	8.9	1.9
24	2.5	3.7	29	4.6	4.8	3.4	9.1	3.4	7.1	2.9	5.1	2.0
25	5.3	11	75	4.2	4.6	3.3	9.9	4.2	6.2	2.5	4.7	1.9
26	6.8	6.8	18	3.9	4.6	4.1	9.2	3.9	20	3.7	3.6	1.8
27	3.0	5.1	17	3.8	4.7	6.4	8.3	3.7	9.5	9.7	3.0	9.3
28	49	4.5	18	10	5.1	4.8	7.5	3.7	5.9	3.4	17	4.1
29	10	4.1	13	11	---	10	6.9	6.1	5.1	23	11	11
30	5.7	13	11	6.3	---	13	6.3	4.3	4.6	8.7	6.2	0.26
31	5.1	---	10	5.0	---	7.1	---	3.5	---	12	4.2	---
<b>Total</b>	139.2	202.3	666.5	275.8	188.9	157.5	388.7	444.9	328.2	147.1	296.7	95.46
<b>Mean</b>	4.49	6.74	21.5	8.90	6.75	5.08	13.0	14.4	10.9	4.75	9.57	3.18
<b>Max</b>	49	38	172	61	17	13	43	131	72	23	73	11
<b>Min</b>	1.6	3.0	3.9	3.8	4.5	3.3	6.3	3.4	3.1	2.0	2.0	0.26
<b>Cfsm</b>	0.81	1.22	3.90	1.61	1.22	0.92	2.35	2.60	1.99	0.86	1.74	0.58
<b>In.</b>	0.94	1.37	4.50	1.86	1.28	1.06	2.62	3.00	2.22	0.99	2.00	0.64

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	7.05	9.27	12.4	13.3	11.9	16.6	15.8	11.2	7.04	6.16	4.27	5.56
<b>Max</b>	33.3	25.6	37.1	37.5	24.8	45.0	45.4	37.8	29.1	32.1	18.4	30.8
<b>(WY)</b>	(2006)	(1996)	(1984)	(1979)	(2008)	(1994)	(2007)	(1989)	(2003)	(1975)	(2000)	(1999)
<b>Min</b>	0.81	1.48	1.21	1.08	1.86	4.03	3.89	2.83	1.80	0.55	0.75	0.87
<b>(WY)</b>	(1995)	(2002)	(1999)	(1981)	(2002)	(2006)	(1985)	(2005)	(1999)	(1999)	(1998)	(1983)

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SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1975 - 2009	
<b>Annual total</b>	4,071.70		3,331.26			
<b>Annual mean</b>	11.1		9.13		10.0	
<b>Highest annual mean</b>					16.0	1984
<b>Lowest annual mean</b>					3.96	2002
<b>Highest daily mean</b>	207	Feb 13	172	Dec 12	814	Sep 16, 1999
<b>Lowest daily mean</b>	0.92	Jun 28	0.26	Sep 30	0.00	Sep 18, 1982
<b>Annual seven-day minimum</b>	1.2	Jun 28	1.6	Oct 11	0.06	Sep 13, 1982
<b>Maximum peak flow</b>			<sup>a</sup> 922	Aug 2	<sup>a</sup> 5,380	Sep 16, 1999
<b>Maximum peak stage</b>			13.31	Aug 2	<sup>b</sup> 20.40	Jul 14, 1975
<b>Instantaneous low flow</b>			0.10	Sep 29	0.00	Sep 13, 1982
<b>Annual runoff (cfsm)</b>	2.02		1.66		1.82	
<b>Annual runoff (inches)</b>	27.49		22.49		24.77	
<b>10 percent exceeds</b>	21		17		20	
<b>50 percent exceeds</b>	6.1		5.4		4.7	
<b>90 percent exceeds</b>	1.6		2.3		1.2	

<sup>a</sup> From rating curve extended above 500 ft<sup>3</sup>/s on basis of step-backwater computation of peak flow.

<sup>b</sup> Adjusted to current datum.

