



Water-Data Report 2009

01394500 RAHWAY RIVER NEAR SPRINGFIELD, NJ

RAHWAY RIVER BASIN

LOCATION.--Lat 40°41'15", long 74°18'42" referenced to North American Datum of 1983, Springfield Township, Union County, NJ, Hydrologic Unit 02030104, on left bank 50 ft downstream from bridge on eastbound U.S. Highway 22, 100 ft downstream from Pope Brook, and 1.5 mi south of Springfield.

DRAINAGE AREA.--25.5 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--July 1938 to current year.

REVISED RECORDS.--WSP 1622: 1945. WDR NJ-1973: 1938(M), 1968(M), 1971(M).

GAGE.--Water-stage recorder and crest-stage gage. Former concrete control is no longer effective. Datum of gage is 66.17 ft above NGVD of 1929.

REMARKS.--Records good, except for estimated daily discharges, which are fair. Water for municipal supply diverted from river by City of Orange at Orange Reservoir upstream on the West Branch Rahway River. The flow past this station is affected by diversions by pumpage from wells by Orange, South Orange, New Jersey-American Water Company, and Springfield station of Elizabethtown Water Company (no longer active). Several measurements of water temperature were made during the year. Since 1980, the site may be affected during high flows by backwater from the Lenape Park flood control dam, about 1 mi downstream. Satellite gage-height telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 12	0545	*1,370	*6.36
No other peak greater than base discharge			

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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	e25	11	61	23	17	15	19	18	14	22	45	13
2	12	10	22	21	20	17	48	28	14	48	289	12
3	10	9.9	16	20	24	16	190	37	32	28	64	11
4	9.3	10	14	19	20	15	68	56	141	18	23	11
5	16	13	14	18	15	15	28	56	84	16	19	10
6	10	34	13	18	15	16	76	101	60	15	16	9.9
7	9.2	14	12	193	15	17	44	394	24	15	14	10
8	9.2	19	13	71	33	16	24	70	19	13	13	9.8
9	9.5	19	14	32	31	27	20	109	170	12	13	9.8
10	9.3	e12	34	25	20	18	17	43	38	12	21	9.7
11	9.2	e11	172	31	21	15	48	29	44	13	12	28
12	9.2	e10	722	23	31	14	26	26	105	36	49	38
13	9.3	e45	59	21	23	14	18	25	36	13	40	12
14	e8.5	40	32	20	20	14	20	22	47	12	19	9.4
15	e8.4	131	26	18	18	14	33	22	59	11	14	9.1
16	e8.2	110	25	16	17	14	18	21	36	11	11	8.3
17	e7.9	24	73	15	17	13	16	46	23	13	10	8.1
18	e8.2	16	36	16	20	13	15	21	410	21	10	9.6
19	e8.1	14	31	17	33	15	14	19	133	10	17	8.6
20	e8.2	15	37	17	19	15	95	17	81	9.9	10	8.1
21	e8.8	15	45	16	16	13	252	17	73	66	23	8.1
22	e8.2	15	30	15	16	13	71	16	49	14	273	8.1
23	e8.1	14	20	15	16	12	35	16	37	11	28	8.1
24	e7.6	13	78	15	15	12	27	16	35	11	15	11
25	e33	49	225	15	15	12	24	15	29	11	12	8.0
26	49	16	57	15	15	20	21	14	25	101	11	8.0
27	9.7	13	46	15	16	33	20	14	23	105	10	74
28	272	12	65	68	17	12	18	14	20	17	50	13
29	44	12	44	54	---	35	17	43	18	236	106	12
30	16	54	31	21	---	33	17	16	26	73	45	9.9
31	12	---	27	16	---	16	---	15	---	107	16	---
Total	673.1	780.9	2,094	899	555	524	1,339	1,356	1,905	1,100.9	1,298	405.6
Mean	21.7	26.0	67.5	29.0	19.8	16.9	44.6	43.7	63.5	35.5	41.9	13.5
Max	272	131	722	193	33	35	252	394	410	236	289	74
Min	7.6	9.9	12	15	15	12	14	14	14	9.9	10	8.0
Cfsm	0.85	1.02	2.65	1.14	0.78	0.66	1.75	1.72	2.49	1.39	1.64	0.53
In.	0.98	1.14	3.05	1.31	0.81	0.76	1.95	1.98	2.78	1.61	1.89	0.59

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2009, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	21.3	28.4	32.8	32.4	34.7	47.7	44.6	34.5	26.9	26.1	23.3	24.0
Max	111	107	129	116	79.5	120	186	112	123	138	112	151
(WY)	(2006)	(1973)	(1984)	(1979)	(1998)	(1994)	(2007)	(1989)	(2003)	(1975)	(1942)	(1999)
Min	2.17	2.73	4.02	4.26	6.86	8.08	7.37	6.31	4.14	2.23	2.10	2.97
(WY)	(1964)	(1950)	(1940)	(1966)	(2002)	(1981)	(1963)	(1965)	(1965)	(1966)	(1964)	(1964)

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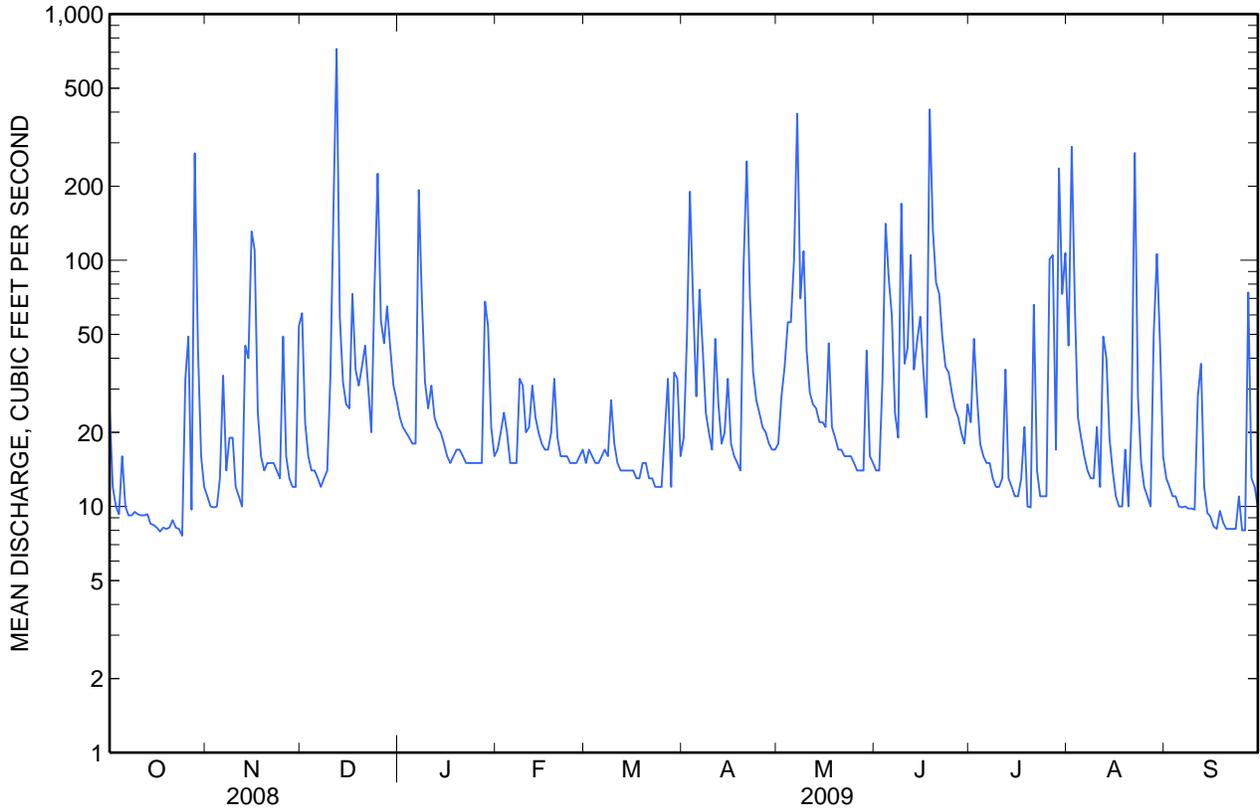
SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1939 - 2009	
Annual total	14,017.2		12,930.5			
Annual mean	38.3		35.4		31.4	
Highest annual mean					55.9	1973
Lowest annual mean					10.0	1965
Highest daily mean	722	Dec 12	722	Dec 12	2,270	Sep 16, 1999
Lowest daily mean	7.4	Sep 1	^a 7.6	Oct 24	0.40	Sep 11, 1966
Annual seven-day minimum	8.2	Oct 18	8.2	Oct 18	0.71	Oct 8, 1970
Maximum peak flow			1,370	Dec 12	^c 7,990	Sep 16, 1999
Maximum peak stage			6.36	Dec 12	10.67	Sep 16, 1999
Instantaneous low flow			b		0.10	Sep 11, 1966
Annual runoff (cfsm)	1.50		1.39		1.23	
Annual runoff (inches)	20.45		18.86		16.72	
10 percent exceeds	73		69		62	
50 percent exceeds	18		17		12	
90 percent exceeds	9.3		9.9		3.7	

^a Estimated.

^b Unknown. Occurred during period of estimated record.

^c From rating curve extended above 1,600 ft³/s on basis of slope-area measurement of peak flow.



01394500 RAHWAY RIVER NEAR SPRINGFIELD, NJ—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

REMARKS.--Cooperative Network Site Descriptor: Urban Land Use Indicator, NJ Department of Environmental Protection Watershed Management Area 7.

COOPERATION.--Physical measurements and samples for laboratory analyses were provided by personnel of the NJ Department of Environmental Protection. Determinations of dissolved ammonia, dissolved orthophosphate, and suspended residue were performed by the NJ Department of Health and Senior Services, Environmental and Chemical Laboratory.

WATER-QUALITY DATA

WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009

Part 1 of 3

[Remark codes: <, less than.]

Date	Time	Baro- metric pres- sure, mm Hg (00025)	Temper- ature, air, deg C (00020)	UV absorb- ance, 254 nm, wat flt units /cm (50624)	UV absorb- ance, 280 nm, wat flt units /cm (61726)	Instan- taneous dis- charge, ft ³ /s (00061)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	pH, water, unfltrd field, std units (00400)	Specif- ic conduc- tance, wat unf μS/cm @ 25 degC (00095)	Temper- ature, water, deg C (00010)	Turbdty white light, det ang 90+/-30 corrctd NTRU (63676)	Dis- solved solids dried @ 180degC wat flt mg/L (70300)
Dec 09...	0830	772	10.0	.056	.042	13	9.9	72	7.6	719	2.4	2.0	407
Feb 19...	0915	747	9.5	.124	.090	32	8.9	70	7.6	1,320	5.4	10	716
May 05...	0915	764	14.0	.173	.133	50	6.9	66	7.4	641	13.3	6.4	354
Aug 25...	1000	762	25.5	.099	.073	12	5.0	56	7.5	694	21.4	2.4	392

WATER-QUALITY DATA

WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009

Part 2 of 3

[Remark codes: <, less than.]

Date	Dis- solved solids, sum of consti- tuents, mg/L (70301)	Hard- ness, water, mg/L as CaCO3 (00900)	Sus- pended solids, water, unfltrd mg/L (00530)	Calcium water, fltrd, mg/L (00915)	Magnes- ium, water, fltrd, mg/L (00925)	Potas- sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Total carbon, suspnd sedimnt total, mg/L (00694)	Chlor- ide, water, fltrd, mg/L (00940)	Fluor- ide, water, fltrd, mg/L (00950)	Inor- ganic carbon, suspnd sedimnt total, mg/L (00688)	Silica, water, fltrd, mg/L as SiO2 (00955)
Dec 09...	392	230	1	70.9	13.9	2.22	50.0	131	.6	119	.21	<.04	17.9
Feb 19...	671	190	4	58.8	11.2	2.37	182	92	1.3	316	.11	<.04	10.7
May 05...	321	110	7	33.3	7.21	1.99	70.8	63	1.0	144	.13	<.04	8.7
Aug 25...	373	210	2	63.1	12.7	2.47	48.7	120	.4	123	.11	<.04	16.9

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009

Part 3 of 3

[Remark codes: <, less than.]

Date	Ammonia + org-N,		Nitrate + nitrite,		Ortho-phosphate,	Particulate nitrogen,	Phosphorus,	Phosphorus,	Total nitrogen,	Total nitrogen,	Organic carbon,	Organic carbon,
	Sulfate water, fltrd, mg/L (00945)	water, fltrd, mg/L as N (00623)	water, fltrd, mg/L as N (00608)	water, fltrd, mg/L as N (00631)								
Dec 09...	32.5	.27	.037	1.55	.039	.03	.033	.064	1.8	1.9	.58	2.1
Feb 19...	28.3	.38	.076	1.37	.018	.10	.026	.059	1.8	1.9	1.30	4.6
May 05...	14.3	.48	.110	.67	.043	.10	.054	.090	1.2	1.3	1.02	4.8
Aug 25...	27.7	.29	.072	1.21	.087	.06	.064	.098	1.5	1.6	.41	3.2