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 mi^2.

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 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 (deactivated in late 1980s). 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 telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and (or) maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 24	2145	1,080	5.63
Dec 9	1100	1,620	6.88
Dec 27	0315	1,280	6.15
Mar 13	2345	*2,600	*8.08
Mar 23	0215	1,070	5.60
Mar 30	1415	1,390	6.39

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	9.8	e30	21	36	16	64	85	21	13	8.2	159	7.1
2	9.9	e19	17	30	18	62	60	20	12	8.2	15	7.3
3	14	e16	153	23	19	70	49	247	12	8.1	9.4	7.3
4	11	e13	27	21	17	62	42	37	12	8.3	7.6	7.6
5	9.8	e12	32	20	14	53	38	21	12	8.2	8.9	8.0
6	10	e16	44	19	14	44	35	17	11	7.9	7.6	8.4
7	e12	e14	21	23	13	43	33	15	11	8.1	6.9	8.8
8	e11	e12	16	18	13	48	28	20	11	8.5	6.8	8.7
9	e9.5	e12	673	17	13	47	49	15	36	9.9	6.7	9.0
10	e12	e14	92	16	16	40	28	14	55	12	6.5	8.7
11	e10	e12	37	16	22	33	24	13	13	9.9	6.5	9.5
12	e9.5	e12	26	15	18	46	22	40	11	9.1	6.9	19
13	e10	e13	166	15	16	851	21	16	21	19	8.2	53
14	e8.5	41	106	15	15	1,280	20	12	14	136	6.6	19
15	e35	20	41	15	15	244	20	11	11	14	9.7	8.2
16	23	14	29	15	22	103	28	10	10	9.0	18	52
17	20	14	24	50	16	76	56	10	64	8.7	11	18
18	21	14	21	61	15	60	22	112	11	8.6	6.8	7.2
19	9.6	18	20	24	21	49	20	45	9.8	8.2	6.6	7.0
20	8.6	96	21	18	23	43	19	21	11	8.5	6.5	7.0
21	8.7	25	20	16	21	40	20	17	9.7	7.8	6.4	7.0
22	9.1	16	19	15	19	114	19	16	24	7.7	119	7.6
23	11	14	17	15	190	413	17	18	18	14	52	11
24	242	13	16	15	230	71	16	15	9.2	8.8	12	7.6
25	167	12	17	393	113	50	149	15	9.0	21	35	7.6
26	20	13	291	95	83	61	194	15	8.7	11	10	7.2
27	50	12	576	38	55	38	100	25	8.7	7.4	8.5	42
28	278	13	75	30	47	35	35	22	8.9	7.4	7.6	14
29	62	14	45	23	---	450	27	14	10	39	7.6	9.2
30	25	19	31	18	---	692	23	13	8.1	8.9	7.4	156
31	26	---	31	17	---	238	---	13	---	6.8	7.4	---
Total	1,163.0	563	2,725	1,142	1,094	5,520	1,299	900	475.1	458.2	594.1	550.0
Mean	37.5	18.8	87.9	36.8	39.1	178	43.3	29.0	15.8	14.8	19.2	18.3
Max	278	96	673	393	230	1,280	194	247	64	136	159	156
Min	8.5	12	16	15	13	33	16	10	8.1	6.8	6.4	7.0
Cfsm	1.47	0.74	3.45	1.44	1.53	6.98	1.70	1.14	0.62	0.58	0.75	0.72
In.	1.70	0.82	3.98	1.67	1.60	8.05	1.90	1.31	0.69	0.67	0.87	0.80

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2010, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	21.6	28.3	33.6	32.5	34.7	49.5	44.6	34.4	26.7	25.9	23.3	24.0
Max	111	107	129	116	79.5	178	186	112	123	138	112	151
(WY)	(2006)	(1973)	(1984)	(1979)	(1998)	(2010)	(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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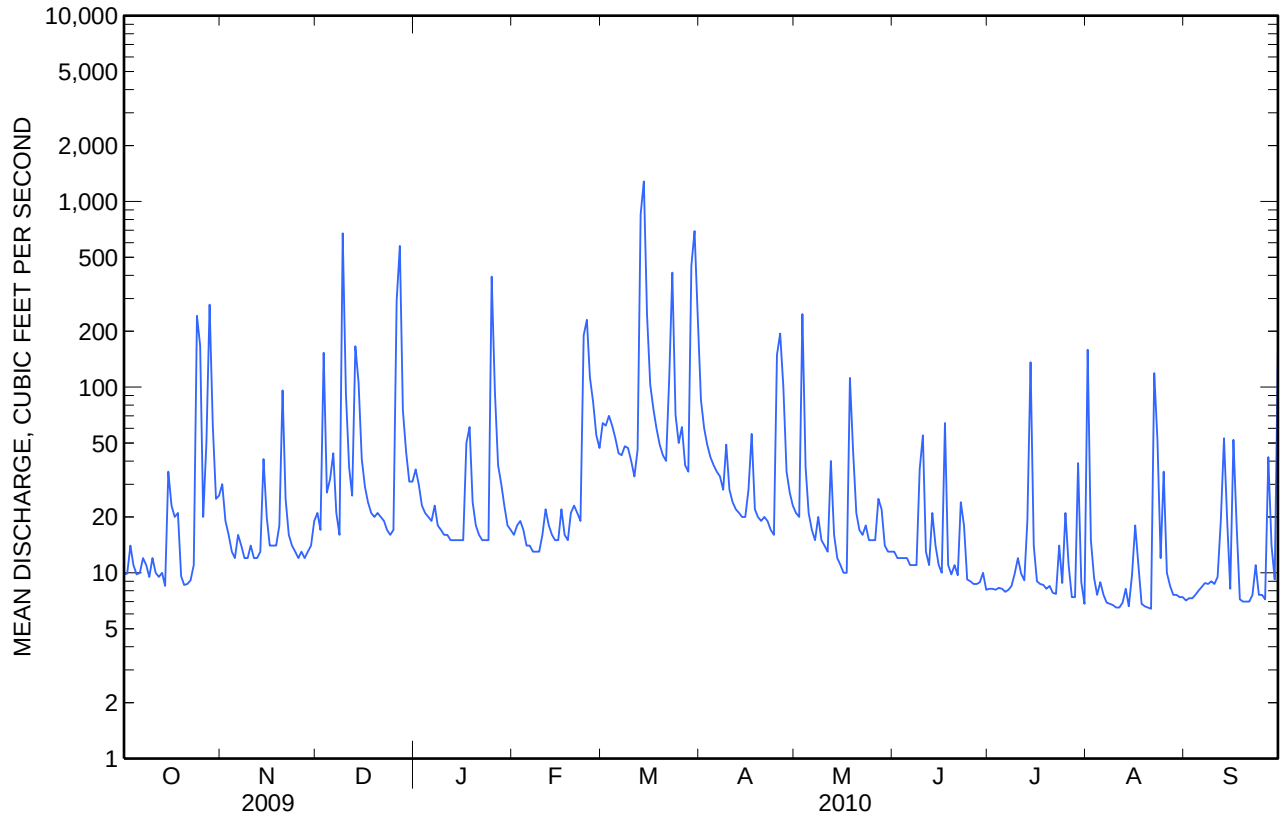
SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 1939 - 2010	
Annual total	13,833.5		16,483.4			
Annual mean	37.9		45.2		31.6	
Highest annual mean					55.9	1973
Lowest annual mean					10.0	1965
Highest daily mean	673	Dec 9	1,280	Mar 14	2,270	Sep 16, 1999
Lowest daily mean	8.0	Sep 25	6.4	Aug 21	0.40	Sep 11, 1966
Annual seven-day minimum	8.4	Sep 17	6.8	Aug 6	0.71	Oct 8, 1970
Maximum peak flow			2,600	Mar 13	[a]7,990	Sep 16, 1999
Maximum peak stage			8.08	Mar 13	10.67	Sep 16, 1999
Instantaneous low flow			6.1	Aug 21, 22	0.10	Sep 11, 1966
Annual runoff (cfsm)	1.49		1.77		1.24	
Annual runoff (inches)	20.18		24.05		16.83	
10 percent exceeds	73		79		62	
50 percent exceeds	18		16		12	
90 percent exceeds	10		8.1		3.7	

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



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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. Analysis of the split and concurrent replicate samples was performed by the Laboratory Branch of the U.S. EPA, Region II, Division of Environmental Science and Assessment.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 1 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO3, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO2, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; E, estimated]

Date	Sample start time	Medium name	Sample type	Barometric pressure, mm Hg (00025)	Temperature, air, °C (00020)	Absorbance, UV, 254 nm, 1 cm path length, water, filtered, units per centimeter (50624)	Absorbance, UV, organic constituents, 280 nm, 1 cm path length, water, filtered, units per centimeter (61726)	Discharge, instantaneous, ft³/s (00061)
11-30-2009	1015	Surface water	Regular	751	13.0	.067	.051	14
02-23-2010	1045	Surface water	Regular	756	4.0	.136	.101	68
06-10-2010	0900	Surface water	Regular	759	19.0	.198	.149	23
09-15-2010	0930	Surface water	Replicate	766	18.0	.128	.094	8.7
09-15-2010	*0930*	*QC sample - Surface water*	*Split Replicate*	--	--	--	--	--
09-15-2010	*0931*	*QC sample - Surface water*	*Concurrent Replicate*	--	--	--	--	--

01394500 RAHWAY RIVER NEAR SPRINGFIELD, NJ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 2 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO3, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO2, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; E, estimated]

Date	Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)	Specific conduc-tance, water, unfiltered, µS/cm at 25 °C (00095)	Tempera-ture, water, °C (00010)	Turbidity, water, unfiltered, broad band light source (400-680 nm), detectors at multiple angles including 90 +/- 30 degrees, ratiometric correction, NTRU (63676)	Dissolved solids dried at 180 °C, water, filtered, mg/L (70300)	Dissolved solids, water, filtered, sum of constituen ts, milligrams per liter (70301)	Hardness, water, mg/L as CaCO3 (00900)
11-30-2009	8.1	69	7.7	749	8.4	1.6	418	414	238
02-23-2010	10.0	77	7.7	1,580	4.5	17	845	E 810	161
06-10-2010	5.9	61	7.2	227	16.5	9.8	138	E 119	57.4
09-15-2010	4.8	50	7.5	479	16.7	3.9	298	262	148
09-15-2010	--	--	*7.5*	*479*	--	*3.9*	*310*	*252*	*142*
09-15-2010	--	--	*7.5*	*479*	--	*3.9*	*320*	*254*	*142*

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 3 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO3, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO2, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; E, estimated]

Date	Suspended solids, water, unfiltered, mg/L (00530)	Calcium, water, filtered, mg/L (00915)	Magne-sium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	ANC, water, unfiltered, fixed endpoint (pH 4.5) titration, laboratory, mg/L as CaCO3 (90410)	Carbon (inorganic plus organic), suspended sediment, total, mg/L (00694)	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	Inorganic carbon, suspended sediment, total, mg/L (00688)
11-30-2009	4	70.5	15.0	2.47	51.9	138	< .10	136	.14	< .06
02-23-2010	10	49.7	8.99	2.59	228	74	3.97	441	E .07	< .06
06-10-2010	10	17.8	3.17	1.66	20.0	39	1.26	34.1	E .06	E .04
09-15-2010	3	45.4	8.44	2.29	35.1	92	.38	76.0	.14	< .06
09-15-2010	*< 10*	*43.0*	*8.30*	*2.20*	*35.0*	*93*	--	*74.0*	*.18*	--
09-15-2010	*< 10*	*43.0*	*8.30*	*2.20*	*35.0*	*93*	--	*76.0*	*.18*	--

01394500 RAHWAY RIVER NEAR SPRINGFIELD, NJ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 4 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO3, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO2, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; E, estimated]

Date	Silica, water, filtered, mg/L as SiO2 (00955)	Sulfate, water, filtered, mg/L (00945)	Ammonia plus organic nitrogen, water, filtered, mg/L as N (00623)	Ammonia plus organic nitrogen, water, unfiltered, mg/L as N (00625)	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (00631)	Orthophos-phate, water, filtered, mg/L as P (00671)	Particulate nitrogen, suspended in water, mg/L (49570)	Phosphorus, water, filtered, mg/L as P (00666)
11-30-2009	17.0	32.6	.18	--	.017	1.25	.036	E .02	.036
02-23-2010	7.7	22.0	.40	--	.061	1.11	.019	.30	.026
06-10-2010	5.2	9.83	.49	--	.113	.88	--	.16	.104
09-15-2010	11.8	22.9	.38	--	.082	1.09	--	.06	.072
09-15-2010	--	*28.0*	*E .30*	*E .30*	*.099*	*1.20*	*.049*	--	*.076*
09-15-2010	--	*28.0*	*E .40*	*E .34*	*.110*	*1.20*	*.051*	--	*.074*

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 5 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO3, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO2, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; E, estimated]

Date	Phosphorus, water, unfiltered, mg/L as P (00665)	Total nitrogen, water, filtered, mg/L (00602)	Total nitrogen, water, unfiltered, mg/L (00600)	Boron, water, filtered, µg/L (01020)	Organic carbon, suspended sediment, total, mg/L (00689)	Organic carbon, water, filtered, mg/L (00681)
11-30-2009	.067	1.4	E 1.5	--	< .12	2.2
02-23-2010	.078	1.5	1.8	--	3.96	4.7
06-10-2010	.147	1.4	1.5	--	1.22	5.9
09-15-2010	.096	1.5	1.5	--	.38	3.5
09-15-2010	*.170*	*E 1.5*	*E 1.5*	*60*	--	*4.4*
09-15-2010	*.098*	*E 1.6*	*E 1.5*	*60*	--	*4.2*