01389500 PASSAIC RIVER AT LITTLE FALLS, NJ

PASSAIC RIVER BASIN

LOCATION.--Lat 40°53′05″, long 74°13′34″ referenced to North American Datum of 1983, Totowa Borough, Passaic County, NJ, Hydrologic Unit 02030103, on left bank 0.6 mi downstream from Beatties Dam in Little Falls, and 1.0 mi upstream from Peckman River.

DRAINAGE AREA.--762 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--September 1897 to current year. Monthly discharge only for September 1897, published in WSP 1302. Published as "at Paterson", September 1897 to September 1955.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 120.00 ft above NGVD of 1929 (levels by Passaic Valley Water Commission). Prior to Jan 8, 1933, nonrecording gage operated by the Society for Establishing Useful Manufacturers and data were reviewed by the USGS. From Jan 8, 1933, to Sep 30, 1955, water-stage recorder, at site 3.7 mi downstream at NGVD of 1929 (levels from New Jersey Geological Survey benchmark).

COOPERATION.--Gage-height record collected in cooperation with the Passaic Valley Water Commission.

REMARKS.--Records good, except for estimated daily discharges, which are fair. Significant fluctuations at medium and low flow due to operation of hydroelectric plant at Beatties Dam. Flow regulated by reservoirs in Rockaway (see 01379990 and 01380900), Pequannock (see 01382100, 01382200, 01382300, 01382380, and 01382400), Wanaque (see 01383000, 01384002, and 01386990), and Ramapo River subbasins. Large diversions for municipal supply from Passaic River above Beatties Dam (see 01389490), and from Rockaway (see 01380800), Pequannock (see 01382370), Pompton (see 01388980, 01388981, 01388982), Ramapo (see 01387990), and Wanaque (see 01386980) Rivers. In addition, the New Jersey-American Water Company (formerly Commonwealth Water Company) diverts from Canoe Brook near Summit (see 01379529) and from Passaic River near Summit (see 01379510); that company, the city of East Orange, and others also divert water for municipal supply by pumping wells in the basin. Several measurements of water temperature were made during the year. National Weather Service rain gage and gage-height telephone telemetry and USGS satellite gage-height telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,400 ft^3/s and (or) maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 14	0000	*5,780	*6.39
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	e320	1,170	920	2,440	693	641	931	541	362	1,480	1,460	818
2	e235	1,040	1,110	2,170	631	657	1,070	576	318	1,460	1,690	679
3	133	877	1,070	1,930	646	644	1,310	599	340	1,640	2,260	517
4	83	733	989	1,720	665	600	1,790	646	735	1,590	2,090	377
5	97	606	873	1,510	621	555	1,840	783	975	1,410	1,920	325
6	115	564	762	1,320	546	543	1,840	1,080	1,150	1,150	1,810	302
7	146	564	673	1,590	496	568	1,930	2,250	1,100	898	1,640	284
8	204	545	584	1,950	583	631	1,800	2,620	1,030	841	1,410	275
9	190	514	504	1,860	773	762	1,540	2,620	1,510	769	1,190	261
10	173	465	537	1,740	894	960	1,280	2,570	1,690	636	1,090	246
11	152	389	1,020	1,660	926	1,010	1,150	2,400	1,770	532	965	299
12	138	349	4,130	1,530	1,140	919	1,070	2,170	2,150	566	861	546
13	128	363	5,470	1,350	1,360	827	908	1,900	2,180	547	875	668
14	124	577	5,650	1,180	1,360	741	723	1,630	2,070	474	954	578
15	121	996	5,050	1,020	1,250	672	679	1,410	2,340	368	889	466
16	125	1,590	4,420	809	1,120	644	672	1,250	2,980	355	715	374
17	113	1,560	3,940	622	1,010	600	636	1,360	2,570	347	538	319
18	106	1,450	3,480	663	912	558	571	1,420	2,780	833	432	297
19	100	1,320	3,080	660	966	551	494	1,210	3,550	761	370	275
20	93	1,170	2,820	652	1,000	563	445	1,010	3,410	601	340	254
21	95	1,020	2,540	604	923	547	830	851	3,460	738	364	237
22	102	881	2,270	575	832	516	1,010	690	3,530	903	1,060	232
23	103	742	1,970	551	776	482	1,140	599	3,340	765	1,260	229
24	97	614	1,860	538	719	447	1,220	524	2,920	620	1,240	e200
25	149	741	2,360	498	646	406	1,110	475	2,480	e485	1,210	e180
26	575	880	2,580	463	596	402	982	417	2,150	e530	1,130	171
27	640	882	2,590	447	567	530	851	351	1,920	e710	987	340
28	1,010	772	2,720	536	601	561	731	377	1,700	677	887	460
29	1,610	638	2,940	866	---	620	638	490	1,430	942	868	428
30	1,550	624	2,910	942	---	887	585	545	1,420	1,030	912	337
31	1,310	---	2,710	812	---	997	---	483	---	1,170	908	---
Total	10,137	24,636	74,532	35,208	23,252	20,041	31,776	35,847	59,360	25,828	34,325	10,974
Mean	327	821	2,404	1,136	830	646	1,059	1,156	1,979	833	1,107	366
Max	1,610	1,590	5,650	2,440	1,360	1,010	1,930	2,620	3,550	1,640	2,260	818
Min	83	349	504	447	496	402	445	351	318	347	340	171

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 2009, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	648	949	1,302	1,354	1,414	2,298	2,056	1,281	804	534	545	537
Max	5,613	4,757	4,497	4,039	3,787	6,755	5,761	4,554	4,290	3,124	2,859	3,561
(WY)	(1904)	(1908)	(1903)	(1979)	(1973)	(1936)	(1983)	(1989)	(1972)	(1945)	(1942)	(1971)
Min	44.5	56.5	44.8	42.3	31.0	131	167	227	64.5	60.3	30.4	28.9
(WY)	(1931)	(1999)	(1999)	(2002)	(2002)	(2002)	(2002)	(1965)	(1999)	(1954)	(1923)	(1964)

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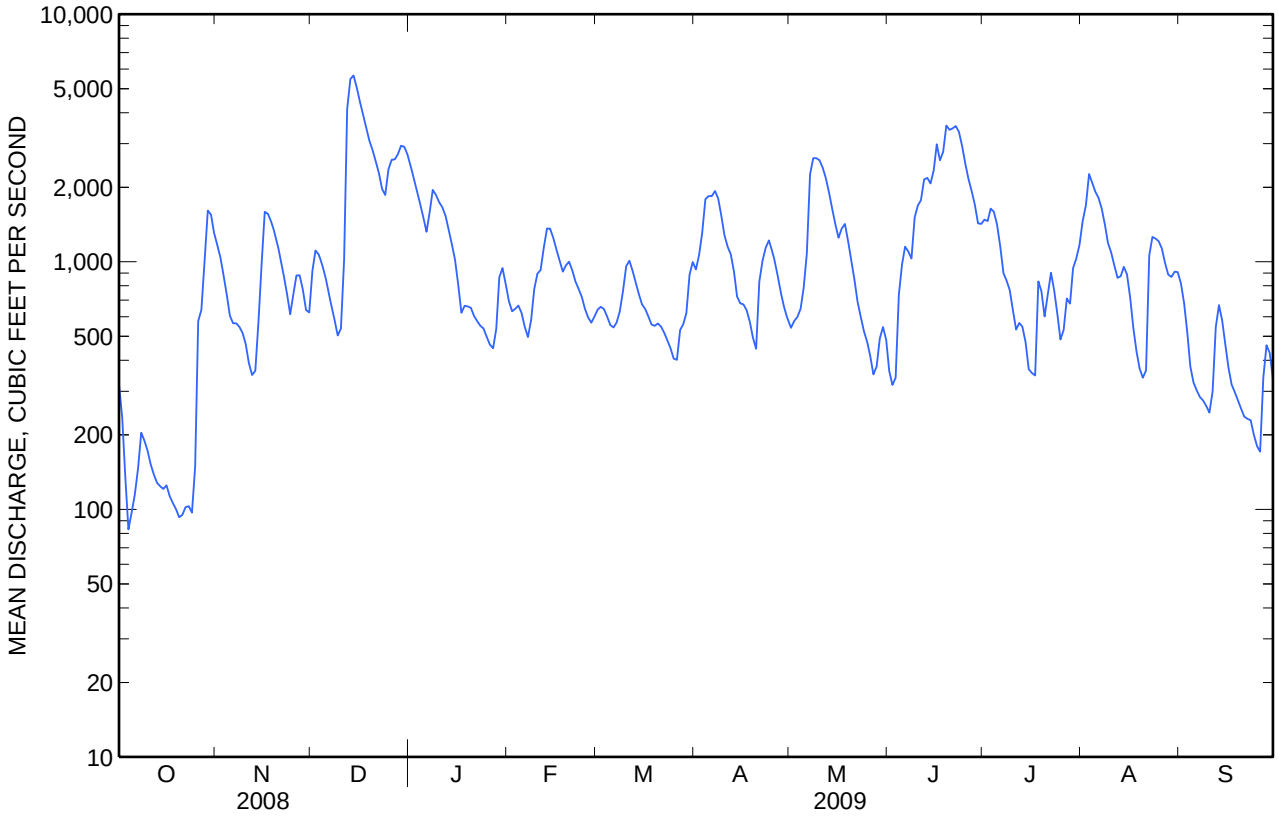
SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1898 - 2009	
Annual total	473,232		385,916			
Annual mean	1,293		1,057		1,142	
Highest annual mean					2,394	1903
Lowest annual mean					199	2002
Highest daily mean	7,460	Mar 10	5,650	Dec 14	28,000	Oct 10, 1903
Lowest daily mean	83	Oct 4	83	Oct 4	0.00	Jul 3, 1904
Annual seven-day minimum	99	Oct 18	99	Oct 18	13	Sep 19, 1932
Maximum peak flow			5,780	Dec 14	[a]31,700	Oct 10, 1903
Maximum peak stage			6.39	Dec 14	[b]12.91	Apr 7, 1984
Instantaneous low flow			67	Oct 4	0.00	Jul 3, 1904
10 percent exceeds	3,070		2,210		2,750	
50 percent exceeds	816		783		641	
90 percent exceeds	128		292		120	

[a] Maximum discharge recorded at present site, no peak stage available.

[b] Maximum stage recorded since 1956, at present site.



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963-96, 1998 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1980 to November 1986.
WATER TEMPERATURE: Water years 1963 to 1980 (once daily), September 1980 to November 1986.
DISSOLVED OXYGEN: October 1970 to September 1980 (once daily).
SUSPENDED-SEDIMENT DISCHARGE: August 1963 to July 1965.

REMARKS.--Cooperative Network Site Descriptor: Urban Land Use Indicator, NJ Department of Environmental Protection Watershed Management Area 4.

COOPERATION.--Physical measurements and samples for laboratory analysis were collected in cooperation with 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; E, estimated.]

Date	Time	Barometric pressure, mm Hg (00025)	Temperature, air, deg C (00020)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Instantaneous discharge, ft^3/s (00061)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unf µS/cm @ 25 degC (00095)	Temperature, water, deg C (00010)	Turbdty white light, det ang 90+/-30 corrctd NTRU (63676)	Dissolved solids dried @ 180degC wat flt mg/L (70300)
Nov													
25...	1200	744	7.0	.207	.161	769	12.5	97	7.3	431	4.7	6.5	249
Feb													
19...	1240	744	8.0	.110	.084	993	14.7	110	7.6	671	2.5	4.7	355
May													
20...	1045	769	28.5	.158	.120	1,020	8.8	89	7.3	457	16.0	10	292
Aug													
06...	1130	756	22.0	.299	.231	1,810	7.0	82	7.1	314	23.0	12	181

WATER-QUALITY DATA
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009
Part 2 of 3
[Remark codes: <, less than; E, estimated.]

Date	Dissolved solids, sum of constituents, mg/L (70301)	Hardness, water, mg/L as CaCO3 (00900)	Suspended solids, water, unfltrd mg/L (00530)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, 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)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Silica, water, fltrd, mg/L as SiO2 (00955)
Nov													
25...	228	100	4	26.8	8.14	2.81	38.0	63	.5	72.2	.12	<.04	11.9
Feb													
19...	E347	120	2	32.0	9.40	2.43	82.7	55	.8	151	E.09	<.04	8.7
May													
20...	E233	100	16	27.2	8.02	2.11	43.3	58	1.4	85.6	E.07	<.04	8.9
Aug													
06...	E163	73	12	19.6	5.81	2.21	29.2	52	.9	51.5	E.06	<.04	9.7

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009
Part 3 of 3
[Remark codes: <, less than; E, estimated.]

Date	Sulfate water, fltrd, mg/L (00945)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Nitrate + nitrite water, fltrd, mg/L as N (00631)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Partic-ulate nitro-gen, susp, water, mg/L (49570)	Phos-phorus, water, fltrd, mg/L as P (00666)	Phos-phorus, water, unfltrd mg/L as P (00665)	Total nitro-gen, water, fltrd, mg/L (00602)	Total nitro-gen, water, unfltrd mg/L (00600)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
Nov												
25...	21.6	.48	.091	1.92	.195	.05	.20	.263	2.4	2.4	.53	5.3
Feb												
19...	20.5	.31	.029	1.57	.097	.06	.12	.15	1.9	1.9	.74	3.5
May												
20...	17.0	.43	.100	1.32	.040	.16	.14	.23	1.8	1.9	1.42	4.2
Aug												
06...	10.5	.49	.056	.59	.136	.11	.16	.22	1.1	1.2	.89	6.5