

Water-Data Report 2011

01381800 WHIPPANY RIVER NEAR PINE BROOK, NJ

PASSAIC RIVER BASIN

LOCATION.--Lat 40°50'42", long 74°20'50" referenced to North American Datum of 1983, Parsip-Troy Hills Twp, Morris County, NJ, Hydrologic Unit 02030103, on left upstream wingwall of former bridge on Edwards Road, 200 ft downstream from bridges of Interstate 280, 0.4 mi upstream from Rockaway River, and 1.2 mi southwest of Pine Brook.

DRAINAGE AREA.--68.5 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Low-flow partial-record station water years 1963-69, 1973, 1979-96. November 1992 to September 1996 (gage height and discharge measurements only), October 1996 to current year.

GAGE.--Water-stage, velocity, and water temperature recorder and crest-stage gage. Datum of gage is 162 ft above NGVD of 1929 (from Corps of Engineers' topographic map).

REMARKS.--Records fair, except for estimated daily discharges which are poor. Flow includes sewage effluent from several treatment plants upstream of gage. Discharges may be affected by backwater from the Passaic River when it reaches high stages. Records computed using a stage-discharge rating prior to Mar 17, 2005. Records for Mar 17, 2005 and thereafter, computed using an index-velocity rating. Water diverted upstream at Clyde Potts Reservoir on Harmony Brook for municipal supply by the Southeast Morris County Municipal Utilities Authority. Several measurements of water temperature were made during the year. Satellite telemetry at station.

01381800 WHIPPANY RIVER NEAR PINE BROOK, NJ—Continued

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

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	318	30	107	e47	61	323	122	244	159	72	61	e1,330
2	575	30	262	e58	83	278	124	199	138	67	54	e1,080
3	493	36	321	e77	105	218	108	169	111	113	52	930
4	382	e77	270	66	89	162	107	158	96	142	86	742
5	281	e130	197	64	87	133	108	170	92	97	63	552
6	180	e91	139	61	122	132	94	152	89	77	56	397
7	101	e70	96	59	131	487	113	142	85	76	88	484
8	72	56	66	59	160	554	107	129	82	105	72	636
9	57	51	51	56	154	610	100	116	79	164	94	681
10	47	47	44	56	130	581	95	106	102	106	217	725
11	47	44	43	54	104	612	91	97	131	83	134	825
12	75	42	113	54	91	415	108	92	137	72	79	795
13	55	41	253	57	81	656	179	88	107	64	64	e663
14	47	42	287	57	96	884	245	86	103	61	204	e525
15	92	44	233	55	156	814	223	153	162	57	376	e393
16	54	41	155	51	124	669	169	213	110	54	460	279
17	49	119	100	49	126	528	440	269	165	52	428	201
18	44	127	73	75	181	392	565	410	225	52	366	159
19	42	76	60	156	227	277	625	665	184	52	304	135
20	42	59	51	145	213	196	590	655	137	51	335	120
21	39	53	48	118	167	164	488	656	103	51	313	113
22	36	49	46	96	138	186	361	566	99	50	308	114
23	35	48	44	83	116	184	284	448	213	48	290	123
24	33	46	43	76	105	226	296	356	210	52	229	159
25	33	43	42	73	158	254	283	321	159	83	179	220
26	33	50	38	70	339	235	245	279	123	130	185	213
27	35	49	46	76	374	198	206	225	124	74	168	173
28	41	40	49	76	327	164	195	187	106	59	746	149
29	36	37	49	69	---	141	265	172	90	84	e1,470	142
30	32	37	47	64	---	127	282	171	80	82	e1,660	137
31	31	---	47	62	---	119	---	180	---	59	e1,510	---
Total	3,437	1,705	3,420	2,219	4,245	10,919	7,218	7,874	3,801	2,389	10,651	13,195
Mean	111	56.8	110	71.6	152	352	241	254	127	77.1	344	440
Max	575	130	321	156	374	884	625	665	225	164	1,660	1,330
Min	31	30	38	47	61	119	91	86	79	48	52	113

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2011, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	134	120	210	162	165	215	213	155	145	87.5	106	117
Max	459	265	696	281	282	416	347	274	436	202	344	440
(WY)	(2006)	(2004)	(1997)	(2006)	(2008)	(2010)	(2005)	(1998)	(2003)	(2004)	(2011)	(2011)
Min	28.7	32.8	33.6	43.3	39.7	65.4	97.6	69.4	37.7	23.7	30.8	30.2
(WY)	(2002)	(2002)	(1999)	(2002)	(2002)	(2009)	(2002)	(2005)	(1999)	(1999)	(2005)	(2005)

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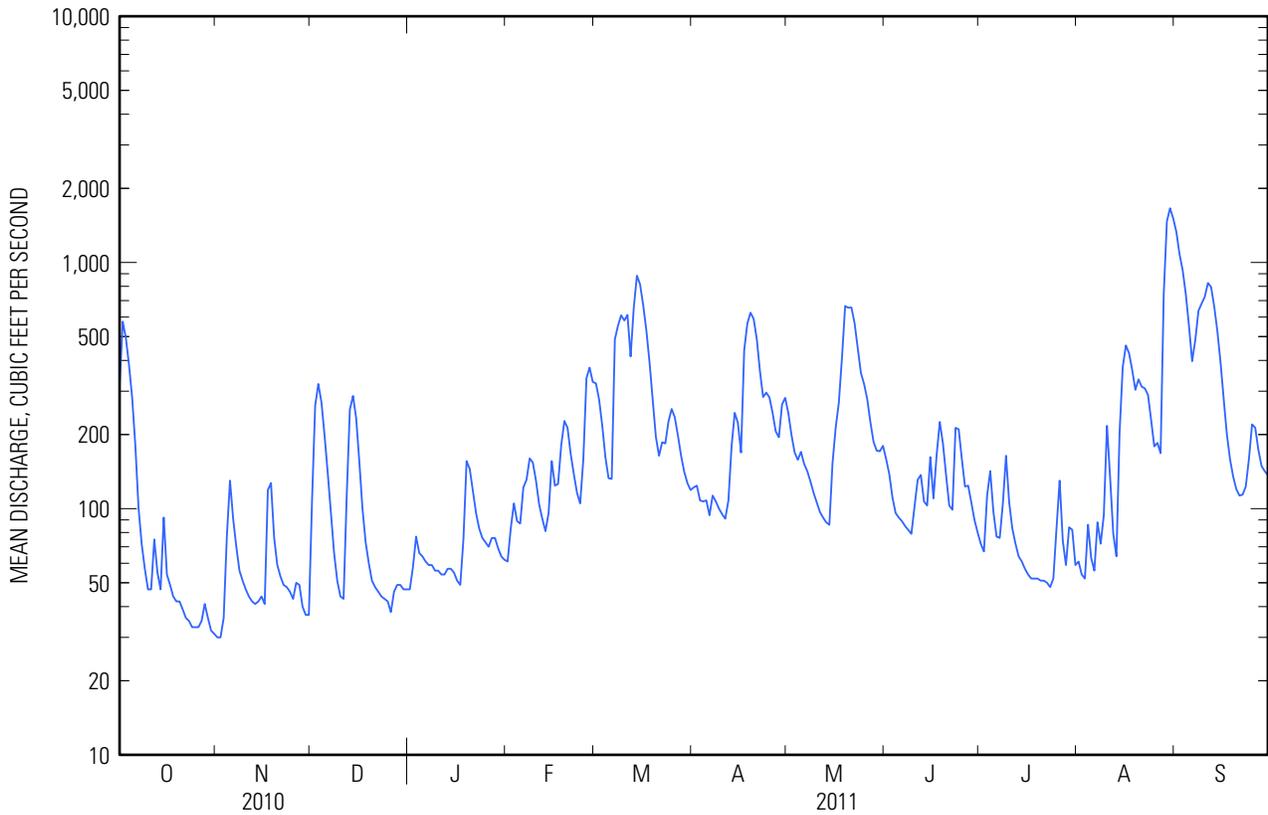
SUMMARY STATISTICS

	Calendar Year 2010		Water Year 2011		Water Years 1997 - 2011	
Annual total	46,220		71,073			
Annual mean	127		195		152	
Highest annual mean					236	1997
Lowest annual mean					68.7	2002
Highest daily mean	1,300	Mar 17	^a 1,660 Aug 30		^a 1,820 Oct 20, 1996	
Lowest daily mean	26	Sep 3	30 Nov 1		17 Aug 2, 1999	
Annual seven-day minimum	29	Aug 7	34 Oct 27		17 Aug 2, 1999	
Maximum peak flow			^a 1,700 Aug 30		^a 2,080 Oct 20, 1996	
Maximum peak stage			^b 12.54 Aug 30		^{b,c} 12.54 Aug 30,	
					2011	
10 percent exceeds	306		485		346	
50 percent exceeds	67		113		93	
90 percent exceeds	33		47		33	

^a Estimated.

^b From high-water mark.

^c Stage on Oct 20, 1996 may have been higher.



01381800 WHIPPANY RIVER NEAR PINE BROOK, NJ—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year.

REMARKS.--Cooperative Network Site Descriptor: Watershed Integrator, NJ Department of Environmental Protection Watershed Management Area 6.

COOPERATION.--Physical measurements and samples for laboratory analyses were provided by personnel of the NJ Department of Environmental Protection. Determination of concentrations of ammonia in filtered water was performed by the NJ Department of Health and Senior Services, Environmental and Chemical Laboratory (DHSS-ECL) except during the period May 12 through August 25, 2011 when the determination was performed by the National Water-Quality Laboratory. Determination of concentrations of suspended solids in unfiltered water was performed by the DHSS-ECL except during the period June 17 through August 25, 2011 when samples could not be accepted.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

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; <, less than]

Date	Sample start time	Barometric pressure, mm Hg (00025)	Temperature, air, °C (00020)	Absorbance, UV, 254 nm, 1 cm path length, water, filtered, units per cm (50624)	Absorbance, UV, organic constituents, 280 nm, 1 cm path length, water, filtered, units per cm (61726)	Discharge, instantaneous, ft ³ /s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)
11-15-2010	1100	760	16.5	0.145	0.112	45	9.3	83	8.0
02-15-2011	1030	767	.7	.166	.127	162	10.8	79	7.3
05-04-2011	1100	758	14.1	.235	.181	157	5.5	57	7.3
08-04-2011	1100	756	24.8	.127	.094	93	6.4	76	7.7

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 2 of 5

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Date	Sample start time	Specific conductance, water, unfiltered, μS/cm at 25°C (00095)	Temperature, 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 constituents, mg/L (70301)	Hardness, water, mg/L as CaCO ₃ (00900)	Suspended solids, water, unfiltered, mg/L (00530)	Calcium, water, filtered, mg/L (00915)
11-15-2010	1100	777	9.1	4.3	413	403	200	3	51.5
02-15-2011	1030	1,360	1.2	13	732	698	170	12	46.4
05-04-2011	1100	593	16.4	7.1	345	307	136	16	35.4
08-04-2011	1100	691	23.1	7.5	406	365	176	--	43.9

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

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; <, less than]

Date	Sample start time	Magnesium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	ANC, water, unfiltered, fixed endpoint titration, laboratory, mg/L as CaCO ₃ (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)	Silica, water, filtered, mg/L as SiO ₂ (00955)
11-15-2010	1100	17.4	3.74	65.4	98.0	0.44	156	0.09	< .03	13.0
02-15-2011	1030	13.2	2.72	191	64.4	1.02	370	.09	< .03	9.47
05-04-2011	1100	11.6	2.53	57.2	69.6	2.74	127	.08	.04	9.65
08-04-2011	1100	16.2	3.46	58.5	87.6	.56	143	.06	< .03	14.1

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 4 of 5

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Date	Sample start time	Sulfate, water, filtered, mg/L (00945)	Ammonia plus organic nitrogen, water, filtered, mg/L as N (00623)	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (00631)	Particulate nitrogen, suspended in water, mg/L (49570)	Phosphorus, water, filtered, mg/L as P (00666)	Phosphorus, water, unfiltered, mg/L as P (00665)	Total nitrogen, water, filtered, mg/L (00602)	Total nitrogen, water, unfiltered, mg/L (00600)
11-15-2010	1100	25.9	0.43	0.094	2.58	0.072	0.07	0.15	3.0	3.1
02-15-2011	1030	20.4	.41	.044	1.39	.090	.03	.09	1.8	1.9
05-04-2011	1100	15.5	.55	.095	1.28	.282	.05	.12	1.8	2.1
08-04-2011	1100	22.3	.41	.058	2.48	.056	.09	.18	2.9	2.9

01381800 WHIPPANY RIVER NEAR PINE BROOK, NJ—Continued**WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER
2011**

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; <, less than]

Date	Sample start time	Organic carbon, suspended sediment, total, mg/L (00689)	Organic carbon, water, filtered, mg/L (00681)
11-15-2010	1100	0.44	4.03
02-15-2011	1030	1.02	4.34
05-04-2011	1100	2.70	4.68
08-04-2011	1100	.56	3.98