



Water-Data Report 2010

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. Several measurements of water temperature were made during the year. Satellite telemetry at station.

Water-Data Report 2010

01381800 WHIPPANY RIVER NEAR PINE BROOK, NJ—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
DAILY MEAN VALUES
[*e*, estimated]

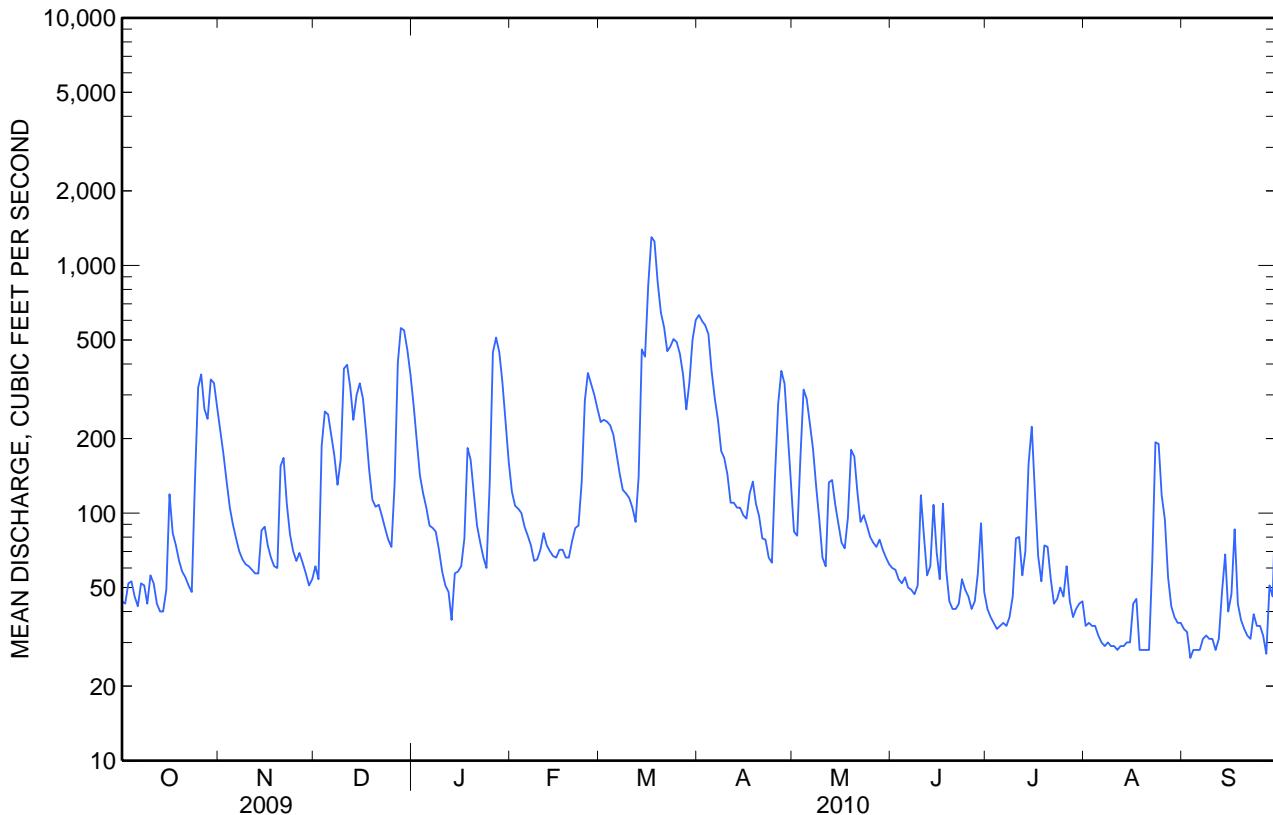
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	44	216	61	271	122	233	630	84	60	41	35	34
2	43	173	54	197	107	238	596	81	59	38	36	33
3	52	134	187	142	104	234	573	167	54	36	35	26
4	53	105	257	e120	100	226	528	e315	52	34	35	e28
5	46	90	250	e105	88	207	e375	e290	55	35	32	e28
6	42	79	206	89	81	173	e290	e230	50	e36	30	e28
7	52	70	171	87	74	145	237	181	49	e35	29	e31
8	51	65	130	84	64	124	178	127	47	e38	30	32
9	43	62	165	71	65	e120	167	93	51	e46	29	e31
10	56	61	383	e58	71	e115	143	66	118	e79	29	e31
11	52	59	397	e51	83	e105	110	61	81	80	28	e28
12	43	57	324	e48	74	e92	e110	133	56	56	29	e31
13	40	57	238	37	70	e140	e105	136	61	70	29	e48
14	40	85	299	57	67	458	e105	108	108	158	30	68
15	49	88	334	58	66	428	e98	90	69	223	30	40
16	119	74	290	61	71	834	e95	76	54	120	43	e47
17	83	66	214	79	71	1,300	e120	72	109	67	45	e86
18	74	61	149	183	66	1,250	134	96	59	53	28	43
19	64	60	113	164	66	855	109	180	44	74	28	37
20	58	155	106	120	77	646	97	169	e41	73	28	34
21	55	167	108	89	87	563	79	122	e41	54	28	32
22	51	109	97	76	89	450	78	92	43	43	e63	31
23	48	82	87	66	133	470	66	98	e54	45	193	39
24	135	70	78	60	285	504	63	89	e49	50	190	35
25	321	64	73	131	368	490	140	e80	e46	46	118	35
26	363	69	132	444	332	439	276	e76	41	61	94	32
27	263	63	405	511	300	361	375	e73	44	44	55	27
28	240	57	559	447	263	262	333	78	57	38	42	e51
29	346	51	546	340	---	336	e210	71	91	41	38	46
30	335	54	458	e235	---	502	e135	e66	48	43	36	138
31	269	---	362	161	---	602	---	62	---	44	36	---
Total	3,530	2,603	7,233	4,642	3,444	12,902	6,555	3,662	1,791	1,901	1,531	1,230
Mean	114	86.8	233	150	123	416	218	118	59.7	61.3	49.4	41.0
Max	363	216	559	511	368	1,300	630	315	118	223	193	138
Min	40	51	54	37	64	92	63	61	41	34	28	26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2010, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	136	125	217	169	166	205	211	148	146	88.2	89.0	93.6
Max	459	265	696	281	282	416	347	274	436	202	255	258
(WY)	(2006)	(2004)	(1997)	(2006)	(2008)	(2010)	(2005)	(1998)	(2003)	(2004)	(2000)	(1999)
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)

01381800 WHIPPANY RIVER NEAR PINE BROOK, NJ—Continued**SUMMARY STATISTICS**

	Calendar Year 2009	Water Year 2010			Water Years 1997 - 2010	
Annual total	46,078		51,024			
Annual mean	126		140		149	
Highest annual mean					236	1997
Lowest annual mean					68.7	2002
Highest daily mean	559	Dec 28	1,300	Mar 17	1,820	Oct 20, 1996
Lowest daily mean	39	Sep 8	26	Sep 3	17	Aug 2, 1999
Annual seven-day minimum	42	Sep 20	29	Aug 7	17	Aug 2, 1999
Maximum peak flow			1,470	Mar 18	^a 2,080	Oct 20, 1996
Maximum peak stage				10.06	Mar 16	^b 10.09
10 percent exceeds	280		338		342	
50 percent exceeds	84		77		91	
90 percent exceeds	49		35		32	

^a Estimated.^b Stage on Oct 20, 1996 was probably 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. 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 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; <, less than; E, estimated]

Date	Sample start time	Barometric pressure, mm Hg (00025)	Tempera-ture, air, °C (00020)	filtered, units per centimeter (50624)	Absorbance, UV, 254 nm, 1 cm path length, water, water, filtered, units per centimeter (61726)	Discharge, instantane-ous, ft ³ /s (00061)	Absorbance, UV, organic constituents, 280 nm, 1 cm path length, water, water, filtered, units per centimeter (000300)		Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)
							Absorbance, UV, 254 nm, 1 cm path length, water, water, filtered, units per centimeter (61726)	Dissolved oxygen, water, unfiltered, mg/L (00300)			
11-30-2009	1100	748	13.4	.143	.108	50	9.9	84	7.6		
03-10-2010	1120	760	12.0	.136	.105	E 115	10.5	89	7.6		
05-27-2010	1030	754	24.1	.139	.106	E 73	6.1	72	7.5		
08-23-2010	1030	754	20.8	.168	.129	193	5.6	66	7.5		

**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; <, less than; E, estimated]

Date	Specific conduc-tance, water, unfiltered, µS/cm at 25 °C (00095)	Tempera-ture, water, °C (00010)	including 90 +/- 30 degrees, ratiometric correction, NTRU (63676)	Turbidity, water, unfiltered, broad band light source (400-680 nm), detectors at multiple angles	Dissolved solids, dried at 180 °C, water, filtered, milligrams per liter (70300)	Dissolved solids, sum of constituents, milligrams per liter (70301)	Dissolved solids, water, filtered, sum of constituents, milligrams per liter (70301)		Suspended solids, water, unfiltered, mg/L as CaCO ₃ (00900)	Calcium, water, filtered, mg/L (00530)	Magne-sium, water, filtered, mg/L (00915)
							Hardness, water, mg/L as CaCO ₃ (00900)	Solids, water, unfiltered, mg/L (00530)			
11-30-2009	693	7.9	7.0	387	367	191	13	47.9	17.3		
03-10-2010	801	7.0	3.9	448	E 397	134	3	34.3	11.7		
05-27-2010	718	22.7	8.9	410	E 383	184	22	46.7	16.4		
08-23-2010	380	21.8	19	213	E 188	87.7	39	22.7	7.51		

01381800 WHIPPANY RIVER NEAR PINE BROOK, NJ—Continued
**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; <, less than; E, estimated]

Date	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 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)	Sulfate, water, filtered, mg/L (00945)	Ammonia plus organic nitrogen, water, filtered, mg/L as N (00623)
11-30-2009	3.54	57.9	96	.94	134	.10	< .06	14.5	22.9	.40
03-10-2010	2.49	84.0	66	.72	191	E .07	< .06	9.8	18.0	.30
05-27-2010	3.23	62.5	87	1.32	155	E .08	< .06	16.0	21.0	.40
08-23-2010	3.04	30.3	42	2.92	74.3	E .04	< .06	7.9	13.7	.51

**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; <, less than; E, estimated]

Date	Nitrate plus nitrite, water, filtered, mg/L as N (00608)	Orthophos- phate, water, filtered, mg/L as P (00631)	Particulate nitrogen, suspended filtered, mg/L (00671)	Phosphorus, in water, as P (49570)	Phosphorus, water, filtered, mg/L as P (00666)	Phosphorus, water, unfiltered, mg/L as P (00665)	nitrogen, water, unfiltered, mg/L (00602)	Total nitrogen, water, unfiltered, mg/L (00600)	Total nitrogen, water, unfiltered, mg/L (00600)	Organic carbon, suspended sediment, total, mg/L (00689)
11-30-2009	.084	2.42	.040	.12	.05	.05	2.8	2.9	.94	
03-10-2010	.011	1.31	.025	.11	< .04	.08	1.6	1.7	.72	
05-27-2010	.098	2.08	--	.20	.08	.20	2.5	2.7	1.32	
08-23-2010	.175	.78	--	.25	.13	.27	1.3	1.5	2.91	

01381800 WHIPPANY RIVER NEAR PINE BROOK, NJ—Continued

**WATER-QUALITY DATA
WATER YEAR OCTOBER
2009 TO SEPTEMBER
2010**

Part 5 of 5
 [%; percent; ANC, acid
 neutralizing capacity;
 CaCO_3 , calcium carbonate;
 N, nitrogen; NTRU,
 nephelometric turbidity
 ratio unit; P, phosphorus;
 SiO_2 , silicon dioxide; cm,
 centimeter; ft^3/s , cubic
 feet per second; mg/L,
 milligrams per liter; mm
 Hg, millimeters of
 mercury; nm, nanometers;
 °C, degrees Celsius;
 $\mu\text{S}/\text{cm}$, microsiemens per
 centimeter; <, less than; E,
 estimated]

Date	Organic carbon, water, filtered,	mg/L (00681)
11-30-2009		3.8
03-10-2010		3.5
05-27-2010		3.9
08-23-2010		4.3