

Water-Data Report 2011

01367800 PAPAKATING CREEK AT PELLETTOWN, NJ

HUDSON RIVER BASIN

LOCATION.--Lat 41°09'46", long 74°40'31" referenced to North American Datum of 1983, Frankford Township, Sussex County, NJ, Hydrologic Unit 02020007, on upstream left wingwall of bridge on County Route 565 (Pellettown Road) in Pellettown, 1.5 mi southeast of Wykertown, 3.9 mi northeast of Branchville, and 4.5 mi upstream of West Branch Papakating Creek.

DRAINAGE AREA.--15.8 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1959-64, 1999-2003. October 2003 to current year.

GAGE.--Water-stage, precipitation, and air temperature recorder and crest-stage gage. Datum of gage is 414 ft above NAVD of 1988 (levels from New Jersey Geological Survey benchmark).

REMARKS.--Records fair, except for estimated daily discharges, which are poor. Beaver dam construction frequently affects flows. Several measurements of water temperature were made during the year. Satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s (revised) and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct 1	0945	398	5.80
Mar 7	0415	798	7.28
Mar 11	0530	508	6.32
May 18	2145	439	6.01
Aug 28	1130	*2,750	*10.00
Sep 7	0730	650	6.87
Sep 8	0830	1,870	9.17
Sep 28	1230	1,050	7.94

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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	240	e10	e110	e14	e9.0	e141	44	32	20	9.6	6.8	69
2	69	e9.0	e142	e21	e11	e79	43	30	17	9.0	5.4	58
3	25	e9.0	e45	e27	e11	e66	32	28	15	46	5.1	52
4	17	e19	e37	e17	e9.0	e50	32	43	14	51	13	48
5	22	e40	e30	e14	e11	e54	50	39	14	22	10	75
6	20	e19	e27	e12	e14	e213	47	27	13	15	9.1	337
7	16	e15	e25	e12	e14	541	53	25	12	12	78	521
8	14	e14	e19	e11	e15	175	43	23	11	46	45	969
9	e11	e14	e15	e11	e14	112	37	20	11	75	20	309
10	e9.5	e14	e14	e9.0	e14	170	33	18	13	26	16	140
11	e10	e13	e17	e10	e12	393	33	16	18	18	12	94
12	e13	e10	e33	e11	e13	167	40	15	15	15	9.0	78
13	e10	e9.5	e58	e10	e12	111	86	15	23	13	7.6	67
14	e9.0	e9.5	e29	e10	e12	83	61	14	19	11	35	56
15	e13	e9.0	e19	e11	e17	67	44	21	24	9.9	104	62
16	e12	e14	e17	e11	e13	78	65	70	16	9.5	132	55
17	e8.5	e32	e16	e11	e15	66	184	67	33	10	58	45
18	e7.5	e22	e15	e14	e32	52	87	171	22	9.9	32	41
19	e6.5	e15	e15	e17	e65	45	68	237	15	11	25	38
20	e6.5	e13	e14	e14	e37	39	67	93	11	9.3	22	38
21	e7.0	e12	e14	e12	e35	49	53	68	8.9	8.4	21	38
22	e6.0	e12	e14	e10	e29	56	43	60	12	7.0	25	59
23	e5.0	e14	e13	e10	e23	52	78	58	56	6.0	18	85
24	e5.0	e13	e13	e11	e29	54	65	68	86	8.0	15	133
25	e4.0	e12	e13	e12	e88	52	48	44	35	16	15	65
26	e4.6	e13	e12	e10	e94	44	42	36	22	22	15	51
27	e16	e13	e13	e14	e63	39	43	43	16	24	20	46
28	e19	e12	e13	e12	e116	35	65	31	13	13	1,380	494
29	e12	e10	e13	e11	---	33	56	26	12	11	361	394
30	e10	e16	e12	e10	---	31	39	32	11	9.5	138	221
31	e10	---	e13	e9.0	---	31	---	25	---	7.4	89	---
Total	638.1	437.0	840	388.0	827.0	3,178	1,681	1,495	607.9	560.5	2,742.0	4,738
Mean	20.6	14.6	27.1	12.5	29.5	103	56.0	48.2	20.3	18.1	88.5	158
Max	240	40	142	27	116	541	184	237	86	75	1,380	969
Min	4.0	9.0	12	9.0	9.0	31	32	14	8.9	6.0	5.1	38
Cfsm	1.30	0.92	1.71	0.79	1.87	6.49	3.55	3.05	1.28	1.14	5.60	10.0
In.	1.50	1.03	1.98	0.91	1.95	7.48	3.96	3.52	1.43	1.32	6.46	11.16

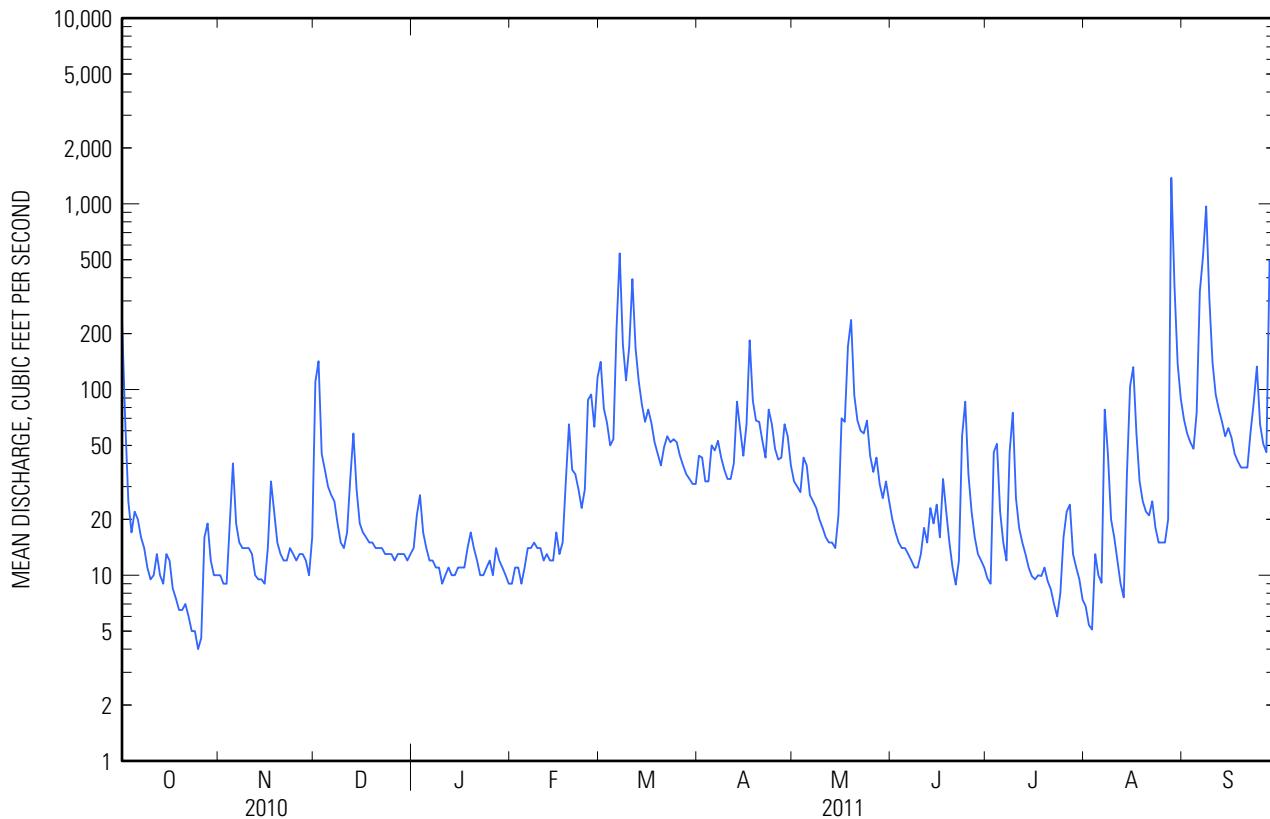
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2003 - 2011, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	33.5	30.4	48.0	38.3	36.5	63.1	45.5	24.3	21.2	11.8	22.1	34.4
Max	97.5	55.0	76.2	77.0	103	120	90.7	48.2	66.3	25.7	88.5	158
(WY)	(2006)	(2007)	(2004)	(2006)	(2008)	(2010)	(2007)	(2011)	(2006)	(2006)	(2011)	(2011)
Min	15.0	14.3	27.1	12.5	12.0	15.7	20.2	12.8	5.65	2.46	1.95	1.44
(WY)	(2010)	(2010)	(2011)	(2011)	(2007)	(2006)	(2009)	(2007)	(2005)	(2010)	(2005)	(2005)

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	Calendar Year 2010	Water Year 2011	Water Years 2003 - 2011	
Annual total	9,211.12	18,132.5		
Annual mean	25.2	49.7	34.1	
Highest annual mean			49.7	2011
Lowest annual mean			25.7	2009
Highest daily mean	521	Mar 14	1,380	Aug 28, 2011
Lowest daily mean	0.71	Sep 3	^a 4.0	Oct 25
Annual seven-day minimum	0.83	Aug 29	5.4	Oct 20
Maximum peak flow			2,750	Aug 28, 2011
Maximum peak stage			10.00	Aug 28, 2011
Instantaneous low flow			Unknown	0.68 Sep 1-3, 2010
Annual runoff (cfsm)	1.60	3.14		2.16
Annual runoff (inches)	21.69	42.69		29.31
10 percent exceeds	51	86		66
50 percent exceeds	14	19		19
90 percent exceeds	1.6	9.5		3.7

^a Estimated.



01367800 PAPAKATING CREEK AT PELLETTOWN, NJ—Continued**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--Water years 1959-63, 1999 to current year.

REMARKS.--Cooperative Network Site Descriptor: Agricultural Land Use Indicator, NJ Department of Environmental Protection Watershed Management Area 2.

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**

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[%, 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)	Temperature, air, °C (00020)	Tempera-ture, water, filtered, units per centimeter (50624)	Absorbance, UV, 254 nm, 1 cm path length, water, filtered, units per centimeter (61726)	Discharge, instantaneous, ft ³ /s (00061)	Absorbance, UV, organic constituents, 280 nm, 1 cm path length, water, filtered, units per centimeter (61726)		Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, mg/L (00300)	pH, water, unfiltered, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)
							Absorbance, UV, organic constituents, 280 nm, 1 cm path length, water, filtered, units per centimeter (61726)	Dissolved oxygen, water, unfiltered, mg/L (00300)				
11-09-2010	0915	751	8.0	.168	.127	E 14	10.5	82	7.6			
03-01-2011	0845	759	7.0	.160	.125	E 141	12.5	86	7.4			
06-20-2011	1130	748	23.7	.182	.137	11	8.8	95	8.0			
09-13-2011	1145	750	21.8	.221	.168	68	7.8	84	7.8			

**WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

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[%, 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	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, water, dried at 180 °C, filtered, mg/L (70300)	Dissolved solids, water, sum of constituents, mg/L (70301)	Dissolved solids, water, sum of constituents, mg/L			Hardness, water, mg/L as CaCO ₃ (00900)	Suspended solids, water, unfiltered, mg/L (00530)	Calcium, water, filtered, mg/L (00915)
							Solids, water, filtered, mg/L (70301)	mg/L as CaCO ₃ (00900)	mg/L (00530)			
11-09-2010	0915	327	5.0	1.6	196	181	99.6	3	32.4			
03-01-2011	0845	212	.3	20	120	112	51.0	13	16.1			
06-20-2011	1130	356	17.9	3.1	203	194	118	--	38.1			
09-13-2011	1145	257	17.5	3.2	165	138	75.3	5	23.9			

01367800 PAPAKATING CREEK AT PELLETTOWN, NJ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

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[%, 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	Magne-		Potassium,		Sodium,	titration, laboratory, mg/L as CaCO ₃	ANC, water, unfiltered, fixed endpoint (pH 4.5)	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)
		sium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	mg/L (90410)	Chloride, water, filtered, mg/L (00940)			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)	
11-09-2010	0915	4.52	1.80	20.9	62	.18	43.1	.06	<.03	8.5			
03-01-2011	0845	2.63	1.47	19.2	29	1.12	33.9	.04	<.03	6.3			
06-20-2011	1130	5.41	1.10	22.7	101	.31	40.3	.07	<.03	8.9			
09-13-2011	1145	3.80	1.60	18.2	68	.25	26.8	.09	<.03	10.4			

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

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[%, 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	Ammonia		Nitrate		Phos- phorus, water, unfiltered, 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)
		Sulfate, water, filtered, mg/L (00945)	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus organic nitrogen, water, filtered, mg/L as N (00631)	Particulate nitrite, water, filtered, mg/L as N (49570)			Total nitrogen, water, filtered, mg/L (00602)	Total nitrogen, water, unfiltered, mg/L (00600)
11-09-2010	0915	31.2	.28	.010	.26	.03	.016	.021	.54
03-01-2011	0845	11.8	.29	.026	.67	.12	.027	.077	.96
06-20-2011	1130	14.3	.30	.019	.68	.06	.029	.037	.98
09-13-2011	1145	10.3	.33	.011	.60	.05	.046	.059	.92

01367800 PAPAKATING CREEK AT PELLETTOWN, 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; E, estimated]

Date	Sample start time	Organic carbon, suspended sediment, total, mg/L (00689)	Organic carbon, water, filtered, mg/L (00681)
11-09-2010	0915	.18	4.6
03-01-2011	0845	1.11	4.0
06-20-2011	1130	.31	5.0
09-13-2011	1145	.25	5.7