01417500 EAST BRANCH DELAWARE RIVER AT HARVARD, NY

Upper Delaware Basin
East Branch Delaware Subbasin

LOCATION.--Lat 42°01'28.5", long 75°07'09.4" referenced to North American Datum of 1983, Delaware County, NY, Hydrologic Unit 02040102, on right bank 800 ft downstream from Baxter Brook, and 1,100 ft downstream from Harvard Road bridge at Harvard. Water-quality sampling site at discharge station.

DRAINAGE AREA.--458 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1934 to June 1967, November 1977 to current year.

REVISED RECORDS.--WDR NY-82-1: Drainage area. WDR NY-84-1: 1978-81(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,007.41 ft above NGVD of 1929. Prior to Aug. 12, 1958, water-stage recorder 1,100 ft upstream at datum 0.65 ft higher, and from Aug. 12, 1958, to June 30, 1967, water-stage recorder at site 200 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Subsequent to September 1954, entire flow from 371 mi^2 of drainage area controlled by Pepacton Reservoir (see 01416900). Part of flow diverted for New York City municipal supply. Remainder of flow (except for conservation releases and spill) impounded for release during periods of low flow in the lower Delaware River Basin, as directed by the Delaware River Master. Satellite and telephone gage-height and temperature telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge prior to construction of Pepacton Reservoir, 31,400 ft^3/s, Sept. 22, 1938, gage height, 16.93 ft, site and datum then in use, from rating curve extended above 20,000 ft^3/s on basis of slope-area measurement at gage height 15.58 ft, datum then in use; maximum discharge since construction of Pepacton Reservoir, 22,100 ft^3/s, June 28, 2006, gage height, 16.61 ft; minimum discharge, 7.2 ft^3/s, Oct. 13, 1954, gage height, 1.63 ft, site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,500 ft^3/s, Mar. 9, gage height, 11.69 ft; minimum discharge, 101 ft^3/s, Sept. 25, 26, gage height, 2.34 ft.

01417500 EAST BRANCH DELAWARE RIVER AT HARVARD, NY—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	164	303	374	970	847	935	2,120	147	174	172	204	156
2	133	257	326	987	996	907	2,980	182	188	170	199	113
3	128	226	379	e915	905	903	2,860	182	188	173	200	109
4	124	207	332	e880	898	946	2,720	222	189	175	194	107
5	119	187	291	e870	1,040	4,790	3,140	203	188	171	189	105
6	120	246	263	e905	1,610	7,900	3,020	197	188	168	196	111
7	153	216	240	938	1,810	5,490	2,680	200	186	167	188	122
8	140	194	230	1,120	1,630	6,570	2,310	208	188	166	186	110
9	142	185	217	1,670	1,370	9,740	e2,000	213	192	167	185	148
10	240	188	215	1,640	1,210	6,640	e1,800	218	185	166	196	142
11	245	179	210	2,030	e1,000	4,360	1,740	203	183	166	219	120
12	287	172	316	2,030	e930	3,140	1,740	195	179	165	212	116
13	248	235	332	1,600	e1,060	2,430	1,660	190	175	179	199	121
14	223	233	324	1,360	2,000	2,010	1,520	187	184	219	190	139
15	199	703	305	1,210	2,170	1,830	1,220	185	186	182	210	128
16	178	876	313	1,100	e1,930	1,580	983	196	184	174	197	119
17	162	638	293	1,030	e1,730	1,440	840	230	185	173	189	114
18	150	480	261	e970	3,140	1,340	395	213	180	170	187	111
19	147	391	244	e930	4,580	1,450	334	210	178	173	190	110
20	193	406	234	e890	3,730	3,830	319	203	177	183	182	109
21	161	380	221	e855	e2,790	4,030	304	202	178	202	178	108
22	148	353	210	e840	e2,350	3,250	292	205	176	196	175	107
23	148	326	356	e835	e1,950	2,620	283	201	177	441	173	105
24	235	312	1,420	e830	e1,600	2,330	278	191	176	882	172	103
25	223	290	997	e820	e1,380	1,740	e270	187	173	e450	171	103
26	215	368	728	e815	e1,230	1,430	e260	182	174	e340	169	118
27	843	742	596	e810	e1,160	1,240	e250	178	173	300	167	129
28	986	656	513	808	e1,030	1,450	e240	173	172	265	167	170
29	639	551	555	807	e950	1,500	e180	168	173	239	170	218
30	464	450	517	855	---	1,330	149	165	181	225	172	177
31	364	---	537	822	---	1,450	---	167	---	213	168	---
Total	7,921	10,950	12,349	33,142	49,026	90,601	38,887	6,003	5,430	7,232	5,794	3,748
Mean	256	365	398	1,069	1,691	2,923	1,296	194	181	233	187	125
Max	986	876	1,420	2,030	4,580	9,740	3,140	230	192	882	219	218
Min	119	172	210	807	847	903	149	147	172	165	167	103

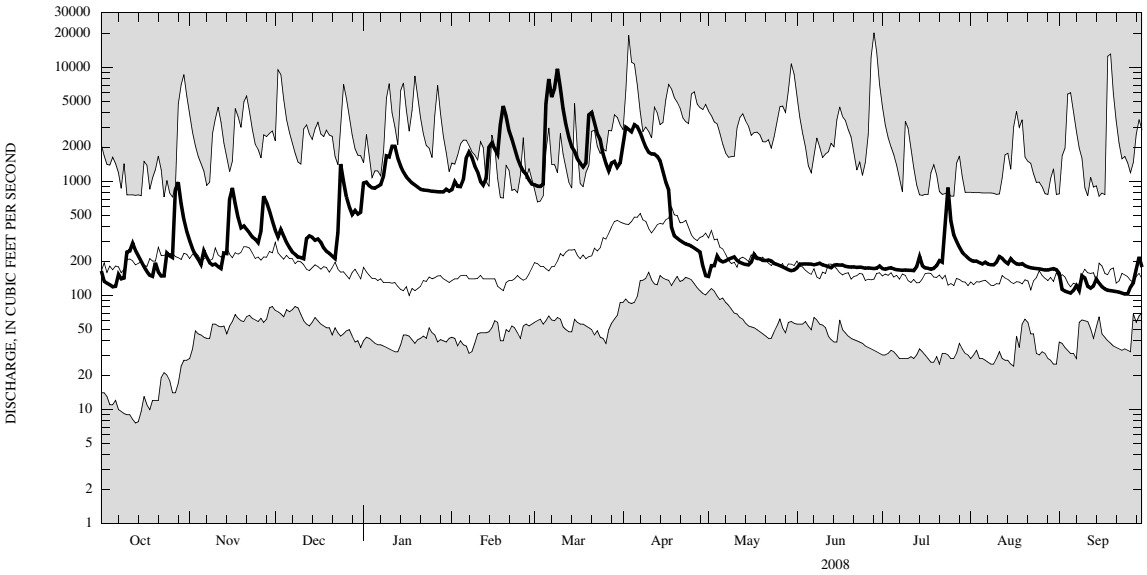
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 2008, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	313	385	360	337	277	432	830	491	356	246	267	325
Max	1,506	1,735	2,327	1,558	1,691	2,923	2,477	1,670	2,615	767	971	1,729
(WY)	(2004)	(2004)	(1997)	(1978)	(2008)	(2008)	(1993)	(1984)	(2006)	(1962)	(2004)	(2004)
Min	13.7	73.1	74.5	68.6	70.7	111	180	79.0	47.7	37.5	43.6	76.5
(WY)	(1955)	(1999)	(1961)	(1963)	(1963)	(1981)	(1985)	(1955)	(1964)	(1966)	(1965)	(1965)

01417500 EAST BRANCH DELAWARE RIVER AT HARVARD, NY—Continued

SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1955 - 2008	
Annual total	218,829		271,083			
Annual mean	600		741		383	
Highest annual mean					882	2004
Lowest annual mean					175	1999
Highest daily mean	7,100	Apr 17	9,740	Mar 9	20,100	Jun 28, 2006
Lowest daily mean	119	Oct 5	103	Sep 24	7.6	Oct 13, 1954
Annual seven-day minimum	131	Oct 2	106	Sep 19	8.6	Oct 8, 1954
10 percent exceeds	1,420		1,820		772	
50 percent exceeds	243		230		187	
90 percent exceeds	181		148		81	



CURRENT WATER YEAR DAILY MEAN DISCHARGE (BOLD) WITH DAILY MEDIAN FOR PERIOD OF RECORD.
SHADED AREAS SHOW HIGHEST AND LOWEST DAILY MEAN FOR PERIOD OF RECORD THROUGH PREVIOUS WATER YEAR.

01417500 EAST BRANCH DELAWARE RIVER AT HARVARD, NY—Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: June 1978 to current year.

INSTRUMENTATION.--Water-temperature satellite and telephone telemeter provides 15-minute-interval readings. Prior to June 1994, water-temperature recorder provided one-hour interval readings.

REMARKS.--Temperature readings prior to Oct. 1, 2007, rounded to nearest 0.5°C. Water temperature is affected by release of water from upstream reservoir. Interruptions of record were due to malfunction of recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Prior to Oct. 1, 2007--Maximum (water years 1978, 1981-82, 1984-2007), 28.0°C, June 30, 1981; minimum (water years 1979-87, 1989-2007), 0.0°C on many days during winter periods, except 1989, 1998.
WATER TEMPERATURE: After Oct. 1, 2007--Maximum, 22.8°C, June 10, 2008; minimum, -0.2°C, Feb. 11, 29, 2008.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 22.8°C, June 10; minimum, -0.2°C, Feb. 11, 29.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		October			November			December			January	
1	14.2	10.8	12.6	10.9	8.1	9.5	4.7	1.7	3.2	3.7	1.2	2.6
2	14.9	12.4	13.6	10.6	7.4	8.6	3.1	0.4	2.0	3.6	0.9	2.4
3	16.1	13.3	14.6	9.2	6.9	7.8	4.5	2.0	3.5	1.9	0.3	1.2
4	16.9	13.9	15.4	9.0	6.5	7.8	3.2	1.6	2.4	2.8	0.4	1.5
5	17.3	14.3	15.5	9.9	6.7	8.3	3.1	1.1	2.2	3.6	1.1	2.4
6	17.2	14.4	15.7	9.7	7.3	8.5	2.4	-0.1	1.1	4.5	2.6	3.6
7	17.5	14.9	16.0	7.8	5.6	7.1	2.4	-0.1	1.0	4.9	3.3	4.1
8	17.2	14.1	15.7	7.6	4.8	6.1	3.9	1.5	2.6	4.8	3.1	3.9
9	17.4	15.3	16.1	7.5	5.2	6.4	3.3	1.5	2.4	5.6	3.5	4.4
10	16.7	14.3	15.3	7.6	5.2	6.4	4.6	2.6	3.5	4.6	2.9	3.8
11	14.7	12.9	13.8	7.9	4.2	5.8	3.7	1.6	2.7	5.0	3.4	4.2
12	13.0	10.9	12.2	6.9	5.0	5.9	4.0	2.5	3.4	5.0	3.5	4.4
13	12.4	9.9	10.9	8.7	6.1	7.1	3.2	0.0	1.7	4.6	2.8	3.8
14	11.2	9.3	10.4	8.3	5.8	7.0	3.6	1.4	2.5	4.5	3.4	3.9
15	12.1	10.3	11.1	8.3	6.4	7.3	2.9	1.0	1.9	4.0	2.5	3.4
16	13.2	10.0	11.5	7.1	5.0	6.3	2.2	-0.1	1.2	3.6	1.9	2.8
17	13.7	10.4	11.9	6.6	4.7	5.6	1.7	0.0	0.9	3.2	1.2	2.4
18	14.5	11.9	13.1	6.9	5.0	5.9	2.8	0.1	1.3	4.3	2.3	3.1
19	15.1	13.4	14.2	6.8	5.0	5.9	3.0	0.4	1.7	3.3	1.3	2.3
20	14.5	12.1	13.6	6.6	5.3	5.9	3.6	2.0	2.8	2.8	0.3	1.5
21	15.1	11.1	12.7	8.3	6.0	7.1	3.5	1.3	2.4	2.1	-0.1	1.1
22	15.0	10.8	12.7	9.7	6.3	8.2	4.0	2.1	3.0	2.6	0.5	1.6
23	14.2	12.4	13.3	6.7	3.4	5.4	5.5	3.1	4.2	2.7	1.1	2.0
24	13.2	11.7	12.4	5.2	2.5	3.9	4.0	2.4	3.2	2.9	0.9	1.9
25	13.9	10.4	11.9	5.8	2.6	4.2	4.1	2.9	3.6	2.5	0.6	1.6
26	11.5	9.3	10.5	5.9	3.6	4.8	4.3	2.4	3.3	3.1	0.8	1.9
27	12.6	10.5	11.5	6.9	4.9	5.9	4.4	3.1	3.7	3.5	1.4	2.4
28	11.8	8.7	10.2	5.9	4.5	5.0	5.1	3.4	4.2	3.4	1.1	2.2
29	10.1	7.8	8.8	6.2	4.4	5.1	5.4	3.6	4.3	3.4	1.0	2.3
30	10.8	7.4	8.8	5.4	3.7	4.6	4.6	2.2	3.7	3.6	1.4	2.6
31	11.1	8.0	9.3	---	---	---	3.7	1.7	2.6	2.9	0.4	1.8
Month	17.5	7.4	12.8	10.9	2.5	6.4	5.5	-0.1	2.7	5.6	-0.1	2.7

01417500 EAST BRANCH DELAWARE RIVER AT HARVARD, NY—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		February			March			April			May	
1	2.8	0.7	1.8	2.8	0.5	1.7	6.0	3.2	4.5	---	---	---
2	2.8	1.4	2.1	3.8	0.8	2.3	5.5	2.6	3.9	10.5	---	---
3	3.9	1.6	2.7	4.3	1.0	2.7	5.1	1.9	3.4	10.2	8.7	9.3
4	3.0	1.4	2.2	3.1	1.9	2.4	4.1	2.7	3.4	12.3	8.5	9.9
5	3.5	2.0	2.7	2.3	1.2	1.8	4.4	3.2	3.7	15.2	7.7	11.1
6	3.3	1.5	2.7	3.5	1.6	2.4	6.4	2.9	4.3	15.2	8.7	11.8
7	3.4	2.1	2.8	3.5	1.7	2.5	6.6	3.4	4.7	15.9	9.3	12.7
8	3.2	1.5	2.5	3.4	2.3	2.8	7.1	3.5	5.0	16.0	11.6	13.3
9	2.9	2.2	2.6	3.3	1.5	2.1	---	---	---	11.9	9.4	10.6
10	3.1	0.3	2.1	3.0	1.3	2.1	---	---	---	12.4	8.4	10.3
11	1.0	-0.2	0.4	3.9	1.6	2.6	5.7	4.4	5.1	13.7	8.1	10.9
12	1.2	-0.1	0.6	3.1	1.9	2.5	8.6	5.1	6.5	11.3	8.8	10.0
13	1.8	0.5	1.2	3.8	1.6	2.5	6.6	4.4	5.3	15.4	7.2	11.0
14	2.3	0.7	1.5	3.4	1.8	2.6	6.7	3.4	4.9	15.6	8.9	12.3
15	2.5	1.1	1.7	3.7	2.4	3.0	8.2	3.1	5.5	14.5	11.3	12.5
16	2.9	0.8	1.8	3.9	2.2	2.9	9.0	3.5	6.3	11.4	9.4	10.4
17	2.3	0.7	1.5	4.7	1.1	2.7	10.1	4.1	7.2	13.5	8.4	10.9
18	2.7	2.0	2.4	3.7	1.7	2.7	13.5	6.4	9.9	10.9	9.1	10.3
19	2.8	1.4	2.1	3.3	2.3	2.8	16.0	8.7	11.9	11.7	7.6	9.4
20	2.5	1.1	1.6	3.6	2.1	3.0	12.5	9.7	11.0	10.5	7.2	9.0
21	2.5	0.8	1.5	3.8	1.6	2.5	15.4	8.8	11.6	11.5	8.1	9.9
22	1.5	0.3	1.0	4.3	1.4	2.6	16.1	8.5	11.8	12.5	8.4	10.0
23	2.3	0.8	1.6	4.3	1.3	2.6	17.0	8.9	12.5	12.8	8.9	10.5
24	3.2	0.5	1.7	4.6	1.4	2.7	16.8	8.3	12.2	13.5	8.6	11.1
25	3.5	0.4	1.8	5.0	1.3	3.0	---	---	---	17.1	8.8	12.6
26	1.9	1.1	1.5	5.0	2.2	3.5	---	---	---	17.6	10.0	14.0
27	2.7	1.1	1.9	3.8	1.9	3.0	---	---	---	19.1	13.0	15.4
28	1.6	0.1	0.9	3.5	2.4	3.0	---	---	---	17.6	10.6	13.8
29	2.3	-0.2	0.9	5.0	1.5	3.1	---	---	---	17.5	9.4	13.3
30	---	---	---	5.6	0.9	3.1	---	---	---	17.8	10.2	13.9
31	---	---	---	3.3	2.0	2.7	---	---	---	16.9	12.9	14.6
Month	3.9	-0.2	1.8	5.6	0.5	2.6	---	---	---	---	---	---

01417500 EAST BRANCH DELAWARE RIVER AT HARVARD, NY—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		June			July			August			September	
1	18.2	13.2	15.1	19.3	15.2	17.0	20.6	15.1	17.5	18.2	12.3	14.9
2	18.7	12.1	15.3	19.9	14.0	16.9	18.2	14.6	16.2	19.4	13.7	16.3
3	17.0	12.0	14.7	17.1	14.2	15.8	17.3	13.3	15.2	21.1	15.8	18.0
4	15.0	12.6	13.8	17.2	13.6	15.4	18.2	13.6	15.6	21.2	16.3	18.4
5	15.9	12.0	14.0	18.6	13.4	15.9	19.9	13.9	16.7	21.0	16.4	18.4
6	17.8	13.2	15.2	19.4	14.0	16.8	20.9	15.6	17.8	18.2	16.1	17.3
7	20.7	13.9	17.2	20.7	15.1	17.9	19.2	14.8	16.9	19.7	15.4	17.2
8	19.3	15.4	17.4	20.9	16.0	18.6	18.5	14.2	16.1	18.8	15.0	16.8
9	21.7	14.6	18.0	18.8	16.1	17.6	18.5	14.2	16.0	16.5	14.1	15.7
10	22.8	16.0	19.2	19.9	14.4	17.2	16.0	13.3	14.6	17.6	13.2	14.9
11	22.4	16.1	19.2	18.4	14.4	16.5	16.5	12.6	14.4	16.9	13.1	15.0
12	21.7	15.0	18.2	20.9	14.1	17.6	17.5	13.3	15.0	15.3	13.9	14.6
13	21.3	13.8	17.6	18.5	15.9	17.1	18.2	13.3	15.5	15.3	13.6	14.5
14	19.5	15.6	17.4	19.2	14.8	16.9	19.8	14.0	16.4	18.9	14.2	16.4
15	20.3	14.6	17.3	21.1	14.7	17.6	19.7	14.2	16.5	19.4	16.3	17.7
16	18.9	14.8	16.5	21.4	14.9	18.0	19.1	13.8	16.1	17.6	14.8	16.3
17	17.2	13.7	15.1	20.8	15.7	18.1	19.2	13.7	16.3	17.8	13.7	15.5
18	14.9	12.6	13.6	20.7	15.6	17.9	19.4	14.3	16.7	17.2	13.4	15.1
19	16.1	11.7	13.8	20.4	16.1	18.2	19.2	14.8	16.7	16.3	12.1	14.0
20	16.5	12.5	14.3	19.9	15.9	17.8	18.4	12.8	15.4	15.5	11.9	13.7
21	18.1	12.5	15.2	20.1	16.0	17.8	18.6	12.8	15.6	15.7	12.6	14.1
22	18.3	13.5	15.8	19.4	15.9	17.4	19.5	13.5	16.4	17.5	13.4	15.1
23	19.0	14.1	16.4	17.2	14.2	16.1	19.1	13.9	16.3	16.4	12.5	14.3
24	18.4	14.3	16.1	17.5	14.8	16.2	19.2	13.9	16.5	16.4	12.3	14.1
25	18.9	13.3	16.0	---	14.6	---	17.5	14.1	15.7	16.2	13.2	14.4
26	16.3	14.0	14.9	---	---	---	17.9	12.2	15.0	13.9	12.6	13.3
27	16.6	13.1	14.8	18.9	15.4	16.7	17.6	12.0	14.8	15.3	12.5	13.9
28	18.2	13.5	16.0	19.1	14.0	16.2	17.3	12.7	14.9	15.6	13.4	14.3
29	18.3	14.6	16.4	20.2	14.3	16.9	15.2	13.1	13.8	14.2	12.9	13.6
30	20.6	14.6	17.3	19.5	14.4	16.9	14.3	12.0	13.0	15.1	12.6	13.8
31	---	---	---	20.6	14.9	17.5	17.5	11.8	14.1	---	---	---
Month	22.8	11.7	16.1	---	---	---	20.9	11.8	15.7	21.2	11.9	15.4