Water-Data Report 2008

01428500 DELAWARE RIVER ABOVE LACKAWAXEN RIVER NEAR BARRYVILLE, NY

Upper Delaware Basin
Upper Delaware Subbasin

LOCATION.--Lat 41°30′32″, long 74°59′10″ referenced to North American Datum of 1927, Sullivan County, NY, Hydrologic Unit 02040101, on left bank 1.6 mi upstream from Lackawaxen River, and 4.6 mi northwest of Barryville. Water-quality sampling site at discharge station.

DRAINAGE AREA.--2,020 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1940 to current year.

REVISED RECORDS.--WDR NY-82-1: Drainage area. WDR NY-04-1: 2003.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 600.22 ft above NGVD of 1929.

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 (01416900), and subsequent to October 1963, entire flow from 454 mi^2 of drainage area controlled by Cannonsville Reservoir (01424997). Part of flow of these reservoirs 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 current degree of regulation, 130,000 ft^3/s, Aug. 19, 1955, gage height, 26.40 ft, from floodmarks in gage house, from rating curve extended above 55,000 ft^3/s on basis of slope-area measurement at gage height 23.19 ft; maximum discharge since current degree of regulation, 151,000 ft^3/s, June 28, 2006, gage height, 28.97 ft, from floodmark in gage house, from rating curve extended as explained above; minimum discharge, 122 ft^3/s, Sept. 5, 1953, gage height, 1.11 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 48,700 ft^3/s, Mar. 9, gage height, 14.63 ft; minimum discharge, 623 ft^3/s, Sept. 19, gage height, 2.24 ft.

01428500 DELAWARE RIVER ABOVE LACKAWAXEN RIVER NEAR BARRYVILLE, 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	1,430	2,880	4,040	6,130	3,850	4,570	10,900	1,760	1,270	971	1,690	1,310
2	1,480	2,430	3,400	6,130	4,960	4,490	14,900	1,660	1,260	904	1,540	1,130
3	1,450	2,080	3,450	5,270	5,110	4,290	13,400	1,780	1,200	846	1,490	1,020
4	1,470	1,850	4,070	4,370	4,700	4,540	12,300	2,120	1,170	837	1,510	1,020
5	1,470	1,700	3,450	e4,500	4,610	23,600	15,300	2,510	1,190	1,080	1,350	1,020
6	1,550	1,650	2,800	5,080	10,400	34,600	14,000	2,170	1,160	1,170	1,340	918
7	1,590	2,090	2,270	5,090	23,300	21,900	12,100	1,960	1,110	957	1,430	733
8	1,610	1,960	e2,200	6,420	14,800	27,500	10,600	1,870	1,090	795	1,320	776
9	1,670	1,670	2,290	9,920	11,000	43,700	9,460	1,930	1,320	801	1,240	882
10	1,770	1,590	2,220	14,200	9,270	28,700	8,510	2,260	1,240	745	1,280	1,030
11	1,810	1,600	2,300	13,800	7,530	19,000	7,740	2,130	1,400	737	1,410	1,080
12	2,750	1,530	3,120	17,100	6,270	14,200	7,670	1,870	1,370	1,010	1,610	856
13	2,280	1,670	4,890	11,700	e6,500	11,300	7,460	1,720	1,010	1,300	1,480	923
14	1,590	2,400	4,220	9,610	e11,000	9,600	6,700	1,600	995	2,050	1,310	1,050
15	1,290	6,800	3,740	8,500	9,790	9,630	5,920	1,550	1,430	2,170	1,270	1,010
16	1,120	13,600	3,260	7,470	8,390	9,890	5,250	1,630	1,270	1,320	1,570	927
17	1,000	7,990	e2,900	6,510	7,260	8,640	4,620	2,760	1,230	1,070	1,490	791
18	907	5,610	e2,700	6,030	e9,500	7,540	3,890	2,690	1,230	1,050	1,460	693
19	928	4,450	2,980	5,570	e16,000	8,860	2,930	2,360	1,150	1,270	1,420	638
20	1,310	4,120	3,990	5,030	14,700	24,300	2,410	2,110	1,060	1,440	1,520	750
21	2,620	4,990	4,060	4,330	11,300	19,900	2,210	1,940	1,070	1,290	1,510	1,260
22	1,810	4,400	3,840	3,930	9,520	14,600	2,170	2,000	1,140	1,280	1,490	1,210
23	1,400	3,860	3,790	e3,800	8,390	11,700	2,560	2,010	1,180	2,000	1,490	1,110
24	1,430	3,300	15,400	e3,700	7,170	9,840	2,970	1,860	1,130	16,200	1,500	1,290
25	2,400	2,930	11,500	e3,700	6,280	8,500	2,530	1,670	1,080	10,600	1,510	1,340
26	2,130	3,280	8,170	e3,700	5,780	7,380	2,070	1,540	974	5,190	1,500	1,230
27	4,240	8,450	6,760	3,810	5,560	6,920	1,700	1,470	928	3,500	1,380	1,130
28	11,500	8,390	6,050	3,730	5,030	7,760	1,730	1,380	935	3,920	1,280	1,150
29	6,680	6,020	6,890	3,610	4,450	9,450	2,280	1,270	936	3,130	1,260	1,220
30	4,580	4,890	7,580	3,750	---	7,810	2,150	1,190	940	2,330	1,330	1,280
31	3,560	---	6,630	4,010	---	7,310	---	1,150	---	1,940	1,310	---
Total	72,825	120,180	144,960	200,500	252,420	432,020	198,430	57,920	34,468	73,903	44,290	30,777
Mean	2,349	4,006	4,676	6,468	8,704	13,940	6,614	1,868	1,149	2,384	1,429	1,026
Max	11,500	13,600	15,400	17,100	23,300	43,700	15,300	2,760	1,430	16,200	1,690	1,340
Min	907	1,530	2,200	3,610	3,850	4,290	1,700	1,150	928	737	1,240	638

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2008, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	2,321	3,003	3,380	3,152	3,079	5,377	6,608	3,913	2,608	1,678	1,510	1,833
Max	7,404	8,206	11,940	8,873	9,389	13,940	16,500	8,615	14,570	4,087	4,987	10,260
(WY)	(1978)	(2004)	(1997)	(2006)	(1976)	(2008)	(1993)	(1984)	(2006)	(1996)	(2004)	(2004)
Min	527	610	1,114	687	712	1,399	1,878	1,161	673	328	465	448
(WY)	(1964)	(1965)	(1999)	(1977)	(1980)	(1981)	(1985)	(1965)	(1965)	(1965)	(1965)	(1965)

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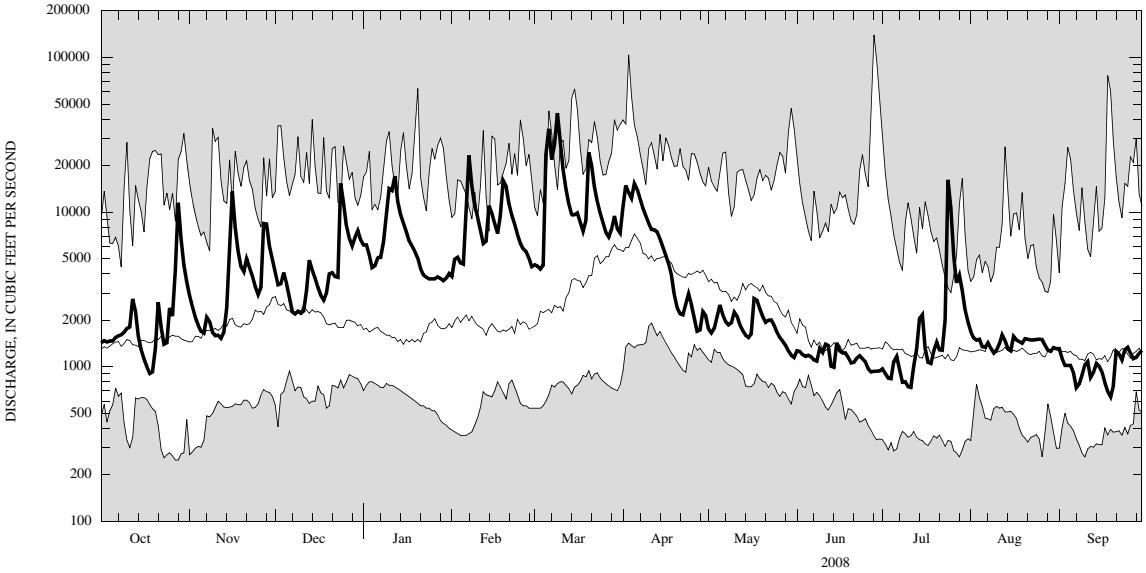
SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1964 - 2008	
Annual total	1,376,500		1,662,693			
Annual mean	3,771		4,543		3,203	
Highest annual mean					5,317	2004
Lowest annual mean					1,297	1965
Highest daily mean	30,300	Apr 16	43,700	Mar 9	140,000	Jun 28, 2006
Lowest daily mean	855	Jul 21	638	Sep 19	250	Oct 27, 1963
Annual seven-day minimum	955	Jul 16	837	Sep 14	264	Oct 23, 1963
10 percent exceeds	9,060		10,700		7,040	
50 percent exceeds	1,940		2,260		1,710	
90 percent exceeds	1,050		1,040		899	



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.

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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.
CHEMICAL DATA: 1971-73 (a).
NUTRIENT DATA: 1971 (a).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1967 to current year (no winter record for water years 1969-76).

INSTRUMENTATION.--Water-temperature satellite and telephone telemeter provides 15-minute-interval readings. From October 1975 to September 1995, water-temperature recorder provided one-hour-interval readings. Prior to October 1975, water-temperature recorder provided continuous readings.

REMARKS.--Temperature readings prior to Oct. 1, 2007, rounded to the nearest 0.5°C. Interruption of record was due to malfunction of recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Prior to Oct. 1, 2007--Maximum (water years 1968-75, 1980-81, 1983, 1985-96, 1998-2001, 2003-07), 32.5°C, July 9, 10, 1993; minimum (water years 1968, 1977-2007), 0.0°C, on many days during winter periods, each year except water years 1980-82.
WATER TEMPERATURE: After Oct. 1, 2007--Maximum, 30.1°C, June 10, 2008; minimum, 0.0°C, on several days during winter period.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 30.1°C, June 10; minimum, 0.0°C on several days during winter period.

01428500 DELAWARE RIVER ABOVE LACKAWAXEN RIVER NEAR BARRYVILLE, 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
		October			November			December			January	
1	18.1	16.2	17.1	9.8	8.6	9.3	3.3	1.5	2.4	2.3	1.4	1.8
2	18.1	15.5	16.7	10.0	8.2	8.9	1.6	0.1	0.7	1.5	0.3	1.0
3	19.0	15.8	17.2	8.8	7.4	8.2	0.9	0.1	0.5	0.3	0.1	0.1
4	20.0	16.5	18.1	8.0	6.7	7.4	0.6	0.0	0.2	0.2	0.0	0.1
5	20.4	17.5	18.6	8.8	6.5	7.6	0.3	0.0	0.1	0.3	0.0	0.1
6	20.9	17.6	19.2	9.4	7.5	8.1	0.6	0.0	0.2	0.9	0.1	0.5
7	20.3	18.5	19.3	7.7	6.4	7.2	0.1	0.0	0.1	2.2	0.9	1.7
8	21.1	17.9	19.4	6.7	5.5	6.1	0.8	0.0	0.3	3.2	1.9	2.4
9	21.0	18.7	19.5	5.9	4.9	5.4	0.4	0.0	0.2	4.0	3.0	3.5
10	20.4	18.2	19.1	5.8	4.9	5.2	0.9	0.3	0.6	3.8	3.5	3.6
11	18.6	16.8	17.7	6.2	4.0	5.0	0.8	0.3	0.6	3.6	3.3	3.4
12	16.8	14.1	15.5	5.1	4.2	4.7	1.6	0.7	1.1	4.0	3.4	3.7
13	14.1	12.5	13.6	6.6	4.8	5.5	1.4	0.2	0.8	3.7	3.3	3.5
14	13.4	11.7	12.6	6.3	5.3	5.8	0.8	0.1	0.4	3.3	3.1	3.2
15	14.5	11.8	13.0	7.2	6.1	6.7	0.7	0.1	0.3	3.3	2.9	3.1
16	15.0	12.0	13.3	7.0	5.9	6.6	0.1	0.0	0.1	2.9	2.0	2.4
17	15.3	12.5	13.8	5.9	5.0	5.3	0.3	0.0	0.1	2.0	1.2	1.4
18	15.8	13.6	14.7	5.0	4.5	4.7	0.8	0.0	0.2	1.9	0.9	1.4
19	16.3	14.9	15.6	4.6	4.1	4.3	0.4	0.1	0.2	1.8	1.1	1.5
20	16.9	15.2	16.1	4.7	4.4	4.6	0.6	0.1	0.2	1.6	0.1	0.7
21	16.5	14.6	15.4	5.8	4.7	5.3	0.4	0.1	0.2	0.4	0.1	0.2
22	16.9	14.4	15.4	7.1	5.8	6.5	0.8	0.1	0.4	0.3	0.1	0.2
23	16.3	14.5	15.5	6.7	4.9	6.0	2.7	0.7	1.8	0.8	0.1	0.3
24	15.7	14.5	15.0	4.9	3.3	4.1	2.7	1.9	2.4	0.4	0.1	0.2
25	15.1	13.6	14.4	3.7	2.5	3.1	2.7	2.3	2.5	0.6	0.1	0.2
26	13.6	12.6	13.2	3.1	2.5	2.8	2.6	2.2	2.5	0.4	0.1	0.2
27	12.9	12.1	12.5	4.8	3.1	4.1	2.8	2.5	2.6	1.0	0.1	0.4
28	12.3	11.1	11.7	5.1	4.6	4.8	3.5	2.7	3.1	1.3	0.1	0.6
29	11.1	9.6	10.3	4.7	3.9	4.3	4.1	3.4	3.7	1.0	0.6	0.7
30	9.9	8.8	9.4	4.0	3.3	3.6	3.6	2.8	3.2	2.1	1.0	1.4
31	10.1	8.8	9.3	---	---	---	2.8	2.2	2.4	1.6	0.8	1.2
Month	21.1	8.8	15.2	10.0	2.5	5.7	4.1	0.0	1.1	4.0	0.0	1.4

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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	1.2	0.2	0.6	1.2	0.2	0.5	5.2	3.7	4.3	12.8	9.7	11.4
2	0.8	0.3	0.6	2.0	0.2	1.0	6.5	5.2	5.8	11.8	10.9	11.4
3	2.1	0.8	1.4	3.2	1.5	2.3	5.4	4.3	4.8	11.5	10.9	11.2
4	1.8	1.4	1.6	3.1	2.7	2.9	4.8	4.3	4.6	13.5	10.6	11.9
5	1.9	1.6	1.7	3.1	1.1	2.0	5.3	4.4	4.8	15.5	11.5	13.3
6	2.3	1.8	2.0	2.6	1.1	1.8	5.8	4.6	5.1	16.6	13.0	14.7
7	2.2	1.5	1.9	2.9	2.5	2.7	6.4	5.7	6.1	17.8	13.5	15.8
8	2.2	1.7	2.0	2.9	2.5	2.8	7.8	5.7	6.8	18.0	16.0	16.8
9	2.0	1.7	1.8	2.5	2.1	2.3	8.8	6.8	7.9	16.4	14.7	15.6
10	2.5	1.0	1.8	2.3	1.8	2.1	10.0	8.0	9.0	15.4	13.8	14.6
11	1.0	0.1	0.3	3.2	2.1	2.6	9.6	8.8	9.1	15.7	12.8	14.2
12	0.2	0.1	0.2	3.5	2.9	3.2	10.1	8.2	9.2	14.1	12.5	13.3
13	0.3	0.1	0.2	3.3	2.4	2.9	10.0	8.9	9.5	16.3	11.3	13.9
14	0.8	0.1	0.4	4.0	2.7	3.3	9.3	7.7	8.5	17.3	13.0	15.4
15	0.8	0.2	0.5	4.0	3.4	3.7	8.8	6.7	7.9	17.5	15.4	16.4
16	1.3	0.2	0.7	4.2	3.6	3.9	9.8	7.4	8.7	16.0	14.1	15.0
17	0.9	0.2	0.6	4.1	2.8	3.5	11.2	8.9	10.1	15.5	13.3	14.4
18	1.7	0.8	1.2	3.8	2.9	3.4	13.1	10.6	11.8	14.5	13.2	14.1
19	2.2	1.5	1.8	3.6	3.2	3.4	15.6	12.4	13.8	14.2	12.1	13.0
20	1.7	1.0	1.4	3.5	3.1	3.2	14.7	13.7	14.1	12.6	11.5	12.1
21	1.4	0.6	1.0	3.4	2.7	3.0	16.9	13.5	15.0	13.9	11.0	12.4
22	1.0	0.3	0.5	3.6	2.5	3.1	18.0	14.1	16.0	14.0	11.4	12.6
23	0.8	0.3	0.5	4.1	2.7	3.4	18.8	15.4	16.9	15.0	11.9	13.3
24	1.7	0.2	0.9	4.3	2.8	3.6	18.1	15.4	16.7	15.9	12.6	14.3
25	2.2	0.5	1.4	4.8	3.0	4.0	17.1	14.4	15.6	18.8	13.3	16.1
26	2.0	1.4	1.6	5.4	3.9	4.6	17.3	14.5	15.6	20.4	15.3	18.0
27	1.5	0.8	1.1	5.1	4.1	4.5	17.3	14.6	15.7	21.5	18.3	19.7
28	1.0	0.2	0.6	4.5	4.1	4.3	15.6	14.3	14.6	21.4	17.2	19.1
29	0.7	0.2	0.4	4.5	3.2	3.9	14.3	12.0	13.3	21.4	15.9	18.7
30	---	---	---	5.0	3.0	4.1	13.3	10.9	12.0	21.9	16.4	19.3
31	---	---	---	4.6	3.8	4.1	---	---	---	21.9	18.5	19.9
Month	2.5	0.1	1.1	5.4	0.2	3.1	18.8	3.7	10.4	21.9	9.7	14.9

01428500 DELAWARE RIVER ABOVE LACKAWAXEN RIVER NEAR BARRYVILLE, 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	23.0	18.8	20.7	26.7	23.8	25.2	26.5	23.4	25.0	22.7	18.0	20.3
2	23.3	18.5	21.0	28.0	23.3	25.4	26.1	23.2	24.3	24.2	18.8	21.4
3	22.7	19.0	21.0	25.8	23.5	24.6	25.4	22.4	23.9	25.0	20.5	22.7
4	21.3	19.8	20.3	24.3	23.1	23.6	25.9	22.2	23.9	25.9	21.5	23.6
5	21.8	19.4	20.5	26.2	22.6	24.1	26.5	22.0	24.2	26.2	22.4	24.3
6	23.4	19.6	21.4	27.1	23.4	25.1	27.1	23.4	25.0	24.0	22.5	23.3
7	26.7	21.4	23.9	27.3	24.1	25.8	26.6	23.3	24.9	25.1	21.3	22.8
8	27.8	23.4	25.6	29.1	24.9	26.8	25.7	22.8	24.0	25.1	21.2	22.8
9	29.0	24.6	26.9	27.5	26.0	26.8	25.7	21.9	23.5	22.4	20.5	21.4
10	30.1	25.6	27.8	28.6	24.8	26.4	23.2	21.6	22.3	22.4	19.0	20.6
11	28.8	25.4	27.0	27.4	24.2	25.8	21.9	20.6	21.3	21.7	18.6	20.3
12	28.5	24.4	26.3	28.9	25.0	26.6	22.6	19.8	21.2	20.2	19.4	19.7
13	28.1	23.5	25.8	27.0	24.9	25.8	23.6	19.8	21.7	21.4	19.2	20.2
14	---	24.5	---	25.3	22.8	24.4	24.2	20.6	22.4	24.0	20.0	21.9
15	---	---	---	25.4	21.7	23.5	25.2	21.7	23.1	25.0	21.4	22.9
16	---	---	---	27.8	22.2	25.0	25.1	21.7	23.4	21.8	19.8	20.8
17	---	---	---	28.6	24.2	26.3	25.3	21.5	23.4	22.3	18.4	20.1
18	---	---	---	29.6	24.9	27.2	25.6	22.0	23.8	21.9	18.8	20.0
19	---	---	---	29.2	25.7	27.5	24.9	21.8	23.1	20.8	17.8	19.1
20	---	---	---	29.8	26.0	27.8	24.3	20.2	22.2	20.5	17.5	18.8
21	---	---	---	29.2	25.9	27.3	24.3	19.9	22.1	20.6	17.2	18.9
22	---	---	---	27.6	24.8	26.1	24.4	20.2	22.3	21.5	17.9	19.3
23	---	---	---	25.6	23.1	24.6	24.4	20.5	22.4	20.9	17.2	18.9
24	25.8	---	---	23.1	19.4	20.2	24.7	20.7	22.6	20.4	16.7	18.5
25	25.8	20.9	23.3	20.4	18.7	19.6	23.6	21.0	22.2	18.4	16.8	17.6
26	24.6	22.3	23.3	21.3	19.5	20.4	23.2	19.1	21.2	17.0	16.0	16.5
27	23.5	22.4	22.9	22.7	21.0	21.8	22.6	18.8	20.7	17.6	16.0	16.7
28	25.3	21.9	23.8	22.5	21.2	21.9	21.7	18.9	20.4	17.5	16.7	17.1
29	25.3	23.3	24.4	23.9	21.6	22.6	20.7	19.2	19.9	17.8	16.5	17.2
30	26.8	23.2	24.9	24.4	21.9	23.1	21.6	19.3	20.4	18.5	15.8	17.1
31	---	---	---	26.6	22.8	24.6	22.4	17.6	20.0	---	---	---
Month	---	---	---	29.8	18.7	24.7	27.1	17.6	22.6	26.2	15.8	20.2