Water-Data Report 2012

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY

Missouri-Poplar Basin
Poplar Subbasin

LOCATION.--Lat 49°00'00", long 105°24'35" referenced to North American Datum of 1983, in SW ¼ SW ¼ sec.3, T.1 N., R.26 W., second meridian, in Saskatchewan, Hydrologic Unit 10060003, on left bank 10 ft north of international boundary, 400 ft southwest of Canadian East Poplar Port of Entry, 14 mi north of Scobey, and at river mile 21.9.

DRAINAGE AREA.--541 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--March 1931 to current year (seasonal records only in most seasons prior to October 1974). Prior to March 1962, published as East Fork Poplar River at international boundary.

REVISED RECORDS.--Water Supply Paper 1389: 1932, 1939, 1942-43, 1947. Water Data Report 1983: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 2,410.92 ft (International Boundary Commission Survey Datum). Prior to Oct. 5, 1953, water-stage recorder at site 80 ft upstream at same elevation.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

REMARKS.--Records are poor. Since September 1975 flow is regulated by Morrison Dam at Cookson Reservoir 3.1 mi upstream. U.S. Geological Survey satellite telemeter is located at the station.

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2.9	3.3	2.9	e3.3	e3.6	e2.9	9.2	31	3.5	e3.9	e4.3	e3.7
2	2.9	3.2	3.0	e3.4	e3.6	3.0	12	45	e3.4	e4.2	e4.4	e3.4
3	2.9	3.2	3.1	e3.4	e3.6	3.0	8.3	30	e3.4	e3.9	e4.6	e3.1
4	2.8	3.2	3.1	e3.4	e3.5	3.1	7.9	28	3.4	e3.9	e4.6	e3.0
5	2.8	3.4	3.1	e3.6	e3.5	3.3	11	32	2.8	e4.1	e4.5	e2.9
6	2.9	3.8	3.0	e3.6	e3.5	3.9	19	36	2.9	e4.2	e4.5	e2.8
7	5.8	3.6	3.0	e3.4	e3.4	3.7	19	35	3.6	e4.3	e4.4	2.8
8	5.8	3.4	2.9	e3.4	e3.3	3.3	12	27	4.0	e4.3	e4.1	e2.8
9	3.8	3.4	2.9	e3.4	e3.4	3.4	11	26	5.8	e4.5	e3.5	e2.7
10	3.5	3.4	2.9	e3.4	e3.3	4.8	5.6	29	5.1	e4.6	e3.7	2.7
11	3.3	3.5	2.9	e3.8	e3.2	7.1	3.2	26	13	e4.6	e4.4	2.6
12	3.3	3.5	3.0	e3.7	e3.1	6.6	2.9	26	6.3	e4.5	e4.6	2.6
13	3.2	3.5	3.0	e3.5	e3.2	5.2	3.7	26	4.4	e4.4	e4.4	2.5
14	3.1	3.4	3.0	e3.4	e3.1	5.8	4.2	21	7.7	e4.4	e4.6	2.3
15	3.1	3.3	3.1	e3.4	e3.2	4.5	8.6	11	6.6	e4.6	e4.6	e2.5
16	3.1	3.1	3.1	e3.4	e3.1	4.4	8.7	14	5.0	e4.6	e4.6	e2.5
17	3.1	3.1	3.0	e3.2	e3.0	4.8	4.6	14	4.7	e4.6	e4.5	2.5
18	3.0	3.3	3.0	e3.2	e3.0	6.5	4.8	11	5.3	e4.5	e4.5	2.5
19	e3.0	3.3	3.1	e3.1	e3.0	13	3.7	10	5.0	e4.5	e4.5	e2.5
20	e3.0	3.2	3.0	e3.0	e2.9	11	3.7	9.6	5.2	e4.5	e4.6	e2.5
21	e3.0	3.3	3.1	e3.2	e3.0	10	8.3	9.2	e4.9	e4.4	e4.5	2.5
22	e3.0	3.3	3.1	e3.3	e3.0	10	5.8	9.7	e4.1	e4.4	e4.5	e2.4
23	e3.0	3.4	3.1	e3.2	e3.0	15	3.5	10	e4.0	e4.3	e4.6	2.5
24	e3.0	3.5	3.1	e3.3	e3.0	16	3.3	10	e3.8	e4.5	e4.4	2.5
25	3.3	3.7	3.1	e3.4	e3.1	9.7	4.5	10	e3.9	e4.4	e4.4	2.5
26	3.1	3.6	3.3	e3.6	e2.9	8.9	2.9	9.7	e4.0	e4.4	e4.4	2.7
27	3.1	3.3	3.4	e3.6	e2.9	14	3.3	13	e4.1	e4.4	e4.4	e3.0
28	3.0	3.2	3.3	e3.4	e2.8	9.8	4.2	12	e3.9	e4.4	4.6	e2.9
29	3.4	3.1	3.4	e3.3	e2.8	8.2	3.9	6.3	e3.8	e4.3	4.7	e2.7
30	3.1	3.1	3.4	e3.4	---	7.6	5.3	3.8	e3.7	e4.3	4.3	e2.6
31	3.2	---	3.5	e3.6	---	8.6	---	3.4	---	e4.3	e4.2	---
Total	101.5	100.6	95.9	105.3	92.0	221.1	208.1	584.7	141.3	135.2	136.9	81.2
Mean	3.27	3.35	3.09	3.40	3.17	7.13	6.94	18.9	4.71	4.36	4.42	2.71
Max	5.8	3.8	3.5	3.8	3.6	16	19	45	13	4.6	4.7	3.7
Min	2.8	3.1	2.9	3.0	2.8	2.9	2.9	3.4	2.8	3.9	3.5	2.3
Ac-ft	201	200	190	209	182	439	413	1,160	280	268	272	161

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2012, BY WATER YEAR (WY)*

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	2.54	2.43	2.25	2.17	2.47	16.9	24.9	11.6	14.8	3.03	2.47	2.47
Max	4.65	4.42	4.37	4.40	7.95	280	306	40.7	365	12.0	4.42	4.10
(WY)	(1980)	(1980)	(1980)	(1980)	(1997)	(1999)	(1982)	(1979)	(2011)	(2011)	(2012)	(1979)
Min	1.59	1.46	1.27	1.26	0.14	1.66	1.80	2.98	1.72	1.30	1.58	1.20
(WY)	(1993)	(2008)	(1993)	(1982)	(2004)	(2009)	(1992)	(1978)	(1992)	(2008)	(1992)	(2007)

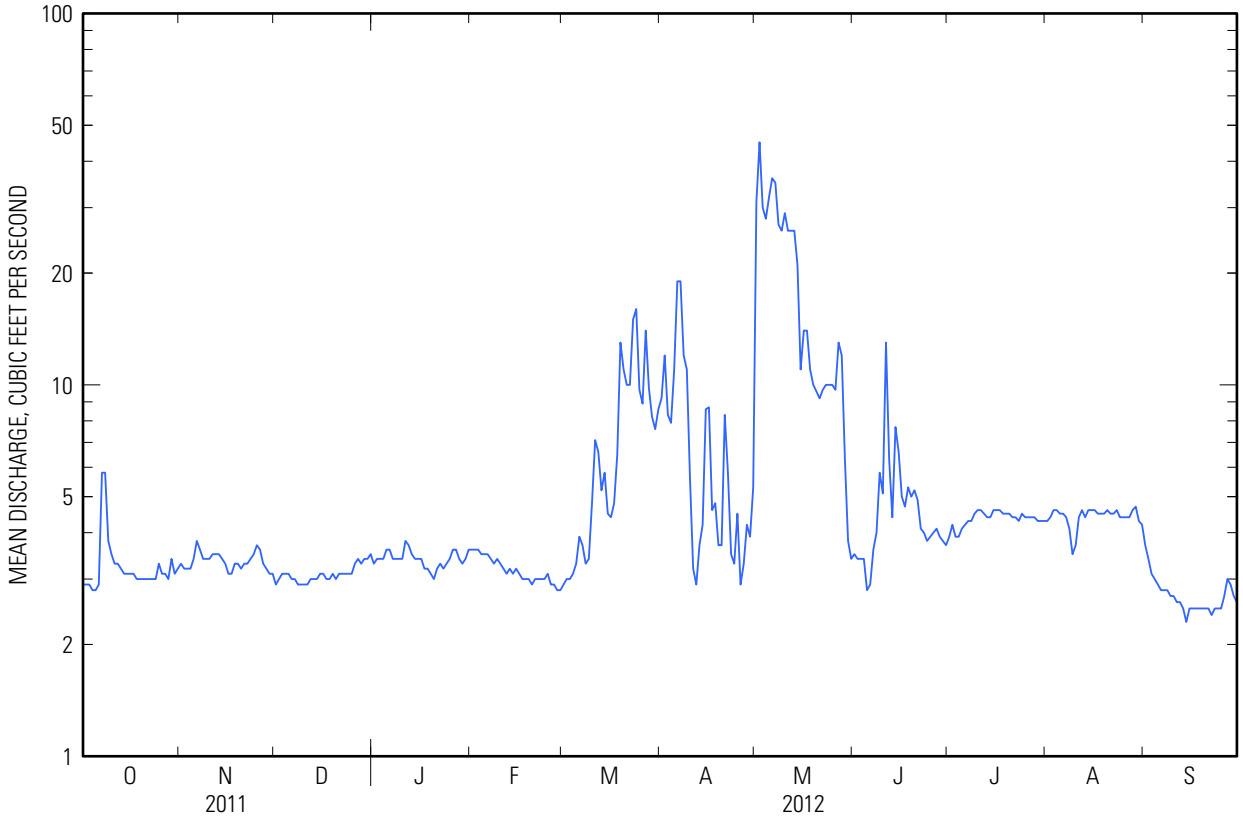
*Since initial filling of Cookson Reservoir.

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY—Continued

SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1977 – 2012*	
Annual total	20,570.5		2,003.8			
Annual mean	56.4		5.47		7.33	
Highest annual mean					56.1	2011
Lowest annual mean					2.13	1992
Highest daily mean	1,820	Apr 12	45	May 2	2,930	Apr 15, 1982
Lowest daily mean	1.9	Jan 24	2.3	Sep 14	0.00	Feb 5, 2004
Annual seven-day minimum	2.1	Mar 5	2.5	Sep 13	0.00	Feb 5, 2004
Maximum peak flow			51	May 2	[a]4,020	Apr 23, 1975
Maximum peak stage			6.48	May 2	[b]12.80	Mar 25, 1943
Instantaneous low flow			2.2	Apr 26	0.00	Feb 5, 2004
Annual runoff (ac-ft)	40,800		3,970		5,310	
10 percent exceeds	35		10		6.7	
50 percent exceeds	3.1		3.5		2.5	
90 percent exceeds	2.3		2.9		1.7	

*Since initial filling of Cookson Reservoir.
[a]Gage height, 12.01 ft.
[b]Backwater from ice.



06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-65, 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February 1982 to current year.
WATER TEMPERATURE: June 1975 to September 1983.

INSTRUMENTATION.--Specific conductance monitor was installed in April 1995.

REMARKS.--Annual specific conductance record (October to September) are complete and rated fair due to limited site visits and missing field notes. There was one day of missing record Oct. 19.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 2,140 microsiemens per centimeter (µS/cm) at 25.0°C, Oct. 28 and 29, 2009; minimum, 363 µS/cm at 25.0°C, July 2, 1991 (daily mean).
WATER TEMPERATURE: Maximum, 29.5°C, July 6, 1975, July 25, 26, 1978; minimum, 0.0°C on many days during winters most years.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,780 microsiemens per centimeter (µS/cm) at 25.0°C, Nov 20, 21, 2012; minimum daily, 876 µS/cm at 25.0°C, May 2, 2012.

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		October			November			December			January	
1	1,530	1,500	1,510	1,340	1,310	1,330	1,560	1,530	1,550	1,510	1,480	1,500
2	1,540	1,520	1,530	1,360	1,330	1,350	1,560	1,540	1,550	1,570	1,510	1,550
3	1,540	1,520	1,530	1,380	1,360	1,370	1,570	1,550	1,560	1,610	1,570	1,590
4	1,550	1,490	1,520	1,390	1,370	1,390	1,580	1,550	1,570	1,600	1,560	1,590
5	1,500	1,470	1,480	1,410	1,390	1,400	1,600	1,580	1,590	1,560	1,500	1,540
6	1,470	1,450	1,460	1,440	1,410	1,430	1,630	1,600	1,620	1,510	1,460	1,490
7	1,450	1,400	1,430	1,500	1,440	1,480	1,640	1,600	1,620	1,460	1,430	1,450
8	1,420	1,400	1,420	1,550	1,480	1,520	1,620	1,600	1,600	1,500	1,440	1,470
9	1,400	1,380	1,400	1,580	1,510	1,550	1,640	1,600	1,620	1,540	1,500	1,530
10	1,380	1,360	1,370	1,580	1,550	1,570	1,670	1,640	1,650	1,560	1,540	1,550
11	1,370	1,350	1,360	1,580	1,570	1,570	1,700	1,670	1,690	1,560	1,530	1,550
12	1,380	1,350	1,370	1,600	1,580	1,590	1,690	1,650	1,680	1,570	1,530	1,550
13	1,370	1,350	1,360	1,590	1,540	1,570	1,650	1,590	1,620	1,620	1,570	1,600
14	1,350	1,330	1,340	1,560	1,530	1,550	1,600	1,530	1,560	1,610	1,520	1,570
15	1,340	1,320	1,330	1,580	1,480	1,540	1,570	1,520	1,530	1,540	1,520	1,520
16	1,320	1,310	1,320	1,610	1,570	1,600	1,540	1,530	1,530	1,570	1,540	1,560
17	1,310	1,290	1,300	1,660	1,610	1,640	1,570	1,510	1,540	1,640	1,570	1,610
18	1,300	1,290	1,290	1,720	1,660	1,690	1,560	1,540	1,550	1,690	1,640	1,670
19	---	---	---	1,750	1,720	1,740	1,560	1,540	1,540	1,710	1,690	1,700
20	1,290	1,280	1,280	1,780	1,750	1,770	1,560	1,540	1,540	1,710	1,670	1,690
21	1,280	1,260	1,270	1,780	1,710	1,760	1,540	1,530	1,540	1,670	1,630	1,650
22	1,260	1,240	1,250	1,750	1,700	1,730	1,550	1,530	1,540	1,630	1,580	1,610
23	1,240	1,220	1,240	1,700	1,630	1,660	1,550	1,530	1,540	1,580	1,550	1,570
24	1,220	1,220	1,220	1,630	1,580	1,610	1,560	1,540	1,550	1,570	1,550	1,560
25	1,210	1,200	1,210	1,580	1,550	1,570	1,580	1,560	1,570	1,570	1,540	1,560
26	1,230	1,210	1,220	1,560	1,510	1,540	1,570	1,550	1,560	1,540	1,480	1,520
27	1,250	1,230	1,240	1,560	1,540	1,540	1,550	1,520	1,540	1,480	1,450	1,470
28	1,260	1,240	1,260	1,550	1,500	1,530	1,530	1,500	1,520	1,480	1,450	1,460
29	1,280	1,260	1,270	1,570	1,530	1,550	1,510	1,480	1,500	1,520	1,480	1,500
30	1,300	1,280	1,290	1,560	1,510	1,540	1,490	1,470	1,480	1,540	1,520	1,530
31	1,310	1,300	1,310	---	---	---	1,490	1,470	1,480	1,520	1,480	1,500
Month	---	---	---	1,780	1,310	1,560	1,700	1,470	1,570	1,710	1,430	1,560

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		February			March			April			May	
1	1,530	1,460	1,500	1,560	1,520	1,550	1,130	1,110	1,120	1,430	901	1,220
2	1,480	1,450	1,460	1,520	1,480	1,510	1,140	1,080	1,120	928	876	891
3	1,460	1,440	1,450	1,500	1,470	1,480	1,080	1,010	1,020	934	886	908
4	1,460	1,450	1,460	1,490	1,470	1,480	1,080	1,020	1,040	952	889	929
5	1,480	1,450	1,460	1,490	1,450	1,470	1,120	1,080	1,100	996	902	947
6	1,500	1,460	1,480	1,460	1,400	1,430	1,100	970	1,040	1,070	935	1,020
7	1,510	1,490	1,500	1,420	1,360	1,390	990	933	949	977	915	940
8	1,530	1,510	1,520	1,380	1,350	1,360	997	960	976	936	896	918
9	1,560	1,520	1,540	1,440	1,370	1,410	1,070	975	1,030	930	897	914
10	1,570	1,540	1,560	1,410	1,300	1,370	1,020	975	987	928	886	907
11	1,620	1,560	1,600	1,300	1,100	1,180	1,060	1,010	1,040	938	885	910
12	1,660	1,610	1,640	1,110	917	1,010	1,110	1,060	1,100	931	881	905
13	1,660	1,600	1,640	1,010	939	991	1,160	1,110	1,130	920	890	903
14	1,600	1,520	1,570	1,050	977	1,010	1,250	1,160	1,210	930	889	903
15	1,520	1,470	1,500	1,160	1,050	1,100	1,420	1,250	1,340	944	905	927
16	1,480	1,460	1,460	1,220	1,140	1,190	1,410	1,210	1,270	1,020	931	981
17	1,480	1,460	1,470	1,140	1,050	1,110	1,230	1,060	1,130	1,000	942	962
18	1,490	1,470	1,480	1,070	1,030	1,040	1,080	1,050	1,070	975	929	952
19	1,500	1,480	1,490	1,210	1,070	1,150	1,140	1,070	1,110	1,010	939	973
20	1,500	1,480	1,490	1,090	1,000	1,030	1,240	1,140	1,180	1,030	990	1,010
21	1,500	1,470	1,490	1,050	996	1,020	1,370	1,240	1,320	1,040	996	1,010
22	1,490	1,460	1,480	1,080	1,050	1,060	1,430	1,370	1,410	1,050	1,020	1,040
23	1,500	1,460	1,490	1,080	1,030	1,070	1,420	1,260	1,360	1,060	1,020	1,040
24	1,490	1,460	1,480	1,030	944	973	1,270	1,180	1,220	1,050	1,020	1,030
25	1,470	1,460	1,470	979	944	959	1,220	1,160	1,180	1,050	991	1,030
26	1,500	1,470	1,490	1,060	979	1,020	1,300	1,210	1,250	1,030	1,010	1,020
27	1,530	1,500	1,520	1,120	1,040	1,090	1,340	1,260	1,310	1,070	1,000	1,030
28	1,560	1,520	1,550	1,040	961	986	1,390	1,320	1,370	1,130	1,070	1,090
29	1,580	1,550	1,570	1,010	964	985	1,390	1,360	1,370	1,160	1,060	1,110
30	---	---	---	1,130	1,010	1,070	1,370	1,330	1,350	1,160	1,130	1,150
31	---	---	---	1,150	1,120	1,130	---	---	---	1,160	1,130	1,140
Month	1,660	1,440	1,510	1,560	917	1,180	1,430	933	1,170	1,430	876	991

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		June			July			August			September	
1	1,220	1,150	1,190	1,100	1,080	1,090	1,160	1,150	1,160	1,200	1,180	1,190
2	1,270	1,210	1,240	1,100	1,050	1,080	1,160	1,140	1,150	1,180	1,170	1,170
3	1,350	1,260	1,320	1,140	1,100	1,120	1,150	1,140	1,140	1,180	1,160	1,160
4	1,370	1,300	1,350	1,130	1,110	1,120	1,170	1,150	1,160	1,180	1,170	1,170
5	1,410	1,290	1,370	1,150	1,120	1,140	1,170	1,140	1,160	1,210	1,180	1,190
6	1,400	1,350	1,370	1,140	1,120	1,130	1,180	1,160	1,170	1,240	1,210	1,230
7	1,390	1,330	1,360	1,160	1,130	1,140	1,170	1,140	1,150	1,270	1,240	1,260
8	1,350	1,260	1,300	1,140	1,120	1,130	1,180	1,140	1,160	1,300	1,270	1,280
9	1,280	1,230	1,270	1,150	1,120	1,140	1,190	1,180	1,180	1,300	1,290	1,300
10	1,280	1,200	1,250	1,150	1,140	1,150	1,200	1,190	1,190	1,320	1,300	1,300
11	1,210	1,160	1,180	1,140	1,120	1,130	1,210	1,190	1,200	1,320	1,300	1,300
12	1,220	1,090	1,150	1,140	1,120	1,130	1,230	1,210	1,220	1,310	1,300	1,310
13	1,100	1,030	1,070	1,140	1,120	1,130	1,250	1,230	1,240	1,320	1,310	1,320
14	1,060	973	1,000	1,140	1,120	1,130	1,250	1,180	1,220	1,320	1,310	1,320
15	1,100	1,060	1,090	1,140	1,120	1,120	1,180	1,160	1,160	1,330	1,320	1,320
16	1,120	1,090	1,110	1,150	1,130	1,140	1,180	1,160	1,160	1,320	1,310	1,320
17	1,120	1,070	1,090	1,180	1,140	1,160	1,200	1,170	1,180	1,330	1,310	1,320
18	1,080	1,050	1,060	1,170	1,140	1,150	1,180	1,170	1,180	1,330	1,320	1,320
19	1,090	1,070	1,080	1,140	1,120	1,130	1,170	1,150	1,160	1,330	1,320	1,320
20	1,120	1,080	1,100	1,120	1,100	1,110	1,170	1,140	1,150	1,340	1,320	1,330
21	1,110	1,090	1,100	1,140	1,100	1,120	1,180	1,160	1,170	1,330	1,310	1,320
22	1,150	1,100	1,120	1,160	1,130	1,150	1,180	1,170	1,180	1,320	1,310	1,320
23	1,160	1,110	1,130	1,160	1,140	1,140	1,190	1,170	1,180	1,330	1,320	1,320
24	1,150	1,140	1,140	1,160	1,130	1,150	1,180	1,170	1,180	1,330	1,320	1,320
25	1,170	1,130	1,150	1,170	1,140	1,160	1,180	1,170	1,180	1,330	1,320	1,320
26	1,200	1,170	1,190	1,140	1,120	1,130	1,190	1,170	1,180	1,340	1,320	1,330
27	1,180	1,140	1,160	1,160	1,130	1,150	1,190	1,160	1,170	1,350	1,330	1,340
28	1,160	1,140	1,150	1,160	1,140	1,150	1,180	1,160	1,170	1,340	1,330	1,340
29	1,140	1,120	1,130	1,140	1,120	1,130	1,170	1,160	1,160	1,350	1,320	1,340
30	1,120	1,100	1,120	1,150	1,120	1,140	1,170	1,150	1,160	1,350	1,320	1,330
31	---	---	---	1,160	1,150	1,160	1,200	1,170	1,180	---	---	---
Month	1,410	973	1,180	1,180	1,050	1,130	1,250	1,140	1,170	1,350	1,160	1,290