

Water-Data Report 2012

**03036500 ALLEGHENY RIVER AT KITTANNING, PA**

Allegheny Basin  
Middle Allegheny-Redbank Subbasin

LOCATION.--Lat 40°49'13", long 79°31'54" referenced to North American Datum of 1927, Armstrong County, PA, Hydrologic Unit 05010006, on right bank 600 ft upstream from dam at lock 7, 3,000 ft upstream from bridge on SR 1038 at Kittanning, 5.7 mi upstream from Crooked Creek, and 9.7 mi downstream from Mahoning Creek, at river mile 45.8.

DRAINAGE AREA.--8,973 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--August 1904 to September 1928, October 1934 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 873: Drainage area. WSP 1305: 1906 (M), 1914, 1925. WSP 1435: 1936-37, 1939.

GAGE.--Water-stage recorder and concrete dam control. Datum of gage is 773.40 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Sep 30, 1928, nonrecording gage at site 4,000 ft downstream at different datum. Oct 1, 1934 to Apr 19, 1939, nonrecording gage, Apr 20, 1939 to Sep 27, 1990, water-stage recorder at present site at different datum. Satellite telemetry at station.

COOPERATION.-- Station established and maintained by the U.S. Geological Survey. Funding for the operation of this station is provided by the U.S. Army Corps of Engineers, Pittsburgh District, the Pennsylvania Department of Environmental Protection, and the U.S. Geological Survey through the National Streamflow Information Program and Cooperative Water Program.

REMARKS.--Records good. No estimated daily discharges. Sharp rises and drops in discharge during periods of low flow may be caused by hydroelectric power production. Flow regulated since 1924 by Piney Reservoir, since December 1940 by Tionesta Lake (station 03019500), since June 1941 by Mahoning Creek Lake (station 03035500), since November 1949 by Chautauqua Lake, since June 1952 by East Branch Clarion River Lake (station 03027000), since October 1965 by Allegheny Reservoir (station 03012520), since July 1970 by Union City Reservoir (station 03021518), and since January 1974 by Woodcock Creek Lake (station 03022550). Several measurements of water temperature were made during the year.

## 03036500 ALLEGHENY RIVER AT KITTANNING, PA—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**  
**DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	6,620	19,100	37,700	31,500	39,200	41,700	10,400	14,800	6,060	3,360	5,420	3,100
2	6,880	18,000	31,800	32,600	39,300	41,800	9,960	14,400	7,090	3,230	4,630	3,160
3	11,600	16,800	27,800	32,300	36,100	39,500	9,430	15,200	10,900	3,310	4,270	3,100
4	12,700	16,500	24,200	29,100	32,200	38,300	8,560	16,100	10,400	4,460	3,790	2,970
5	12,400	15,600	21,300	26,500	25,400	32,700	7,830	17,600	9,330	4,470	3,100	5,440
6	11,500	12,900	22,800	23,700	24,000	29,000	7,170	17,900	8,560	3,880	3,550	3,710
7	9,110	12,400	28,500	22,100	22,400	26,600	6,470	16,000	7,440	3,790	3,730	3,790
8	7,130	11,400	26,900	22,000	20,700	24,100	6,250	23,300	6,180	3,350	3,120	4,280
9	5,730	10,200	24,200	19,900	17,500	29,400	5,930	33,000	5,480	2,550	3,340	4,320
10	5,270	9,340	22,100	18,300	15,200	32,000	5,680	30,700	4,990	2,950	3,740	4,130
11	4,930	9,420	18,900	16,700	13,800	28,300	5,730	28,300	4,690	2,860	4,410	4,170
12	4,980	8,560	16,300	18,400	12,700	24,900	5,610	25,300	5,180	3,170	4,170	3,950
13	5,200	7,910	15,100	24,800	11,300	22,400	5,370	22,400	6,280	2,850	3,980	3,620
14	6,330	8,350	14,700	29,400	11,800	22,600	5,570	20,300	7,110	2,760	4,350	3,600
15	8,990	16,300	14,800	26,900	10,400	20,400	5,620	18,500	6,270	2,740	3,980	3,150
16	12,300	29,700	20,300	23,200	10,400	20,400	5,470	15,000	5,520	3,190	3,690	2,970
17	17,900	28,600	23,800	24,000	12,300	19,300	5,360	12,400	5,230	4,070	3,940	2,840
18	20,900	26,100	21,400	38,800	13,800	16,600	5,030	9,510	5,430	4,730	3,410	4,100
19	19,500	22,900	20,200	42,500	13,900	16,300	5,600	8,810	5,350	3,870	3,030	5,950
20	18,900	20,200	19,700	38,400	13,700	16,500	5,130	7,520	4,960	3,680	2,990	5,870
21	17,800	16,800	18,100	35,000	12,800	15,700	4,910	6,790	4,320	3,910	2,910	4,930
22	17,400	16,400	40,300	30,800	12,100	13,800	5,230	6,560	4,800	3,470	3,220	4,520
23	17,100	28,800	49,500	28,800	11,900	12,000	5,800	6,010	3,680	3,170	3,290	4,500
24	16,500	34,700	50,100	36,800	14,500	13,100	7,280	5,360	3,130	2,940	3,340	4,210
25	15,600	33,400	43,900	35,200	18,100	18,400	11,200	5,450	2,990	2,760	2,980	4,260
26	15,000	30,200	38,900	32,100	17,900	18,300	14,400	4,980	3,030	3,180	2,910	4,790
27	14,400	27,000	35,600	51,100	17,900	16,600	15,200	4,680	3,140	5,250	2,920	5,170
28	17,500	28,000	39,400	66,500	16,200	14,100	14,800	5,640	3,290	8,660	4,460	6,000
29	19,800	38,900	37,900	52,700	18,200	13,200	15,000	6,070	3,470	8,350	3,850	6,050
30	21,100	40,000	34,000	47,800	---	11,100	15,700	6,970	3,850	7,960	3,310	5,180
31	20,600	---	31,500	43,800	---	10,800	---	6,310	---	6,340	3,050	---
<b>Total</b>	401,670	614,480	871,700	1,001,700	535,700	699,900	241,690	431,860	168,150	125,260	112,880	127,830
<b>Mean</b>	12,960	20,480	28,120	32,310	18,470	22,580	8,056	13,930	5,605	4,041	3,641	4,261
<b>Max</b>	21,100	40,000	50,100	66,500	39,300	41,800	15,700	33,000	10,900	8,660	5,420	6,050
<b>Min</b>	4,930	7,910	14,700	16,700	10,400	10,800	4,910	4,680	2,990	2,550	2,910	2,840
<b>Cfsm</b>	1.44	2.28	3.13	3.60	2.06	2.52	0.90	1.55	0.62	0.45	0.41	0.47
<b>In.</b>	1.67	2.55	3.61	4.15	2.22	2.90	1.00	1.79	0.70	0.52	0.47	0.53

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1923, BY WATER YEAR (WY) (PRIOR TO REGULATION)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	9,082	13,580	15,240	22,960	18,740	36,800	25,590	19,030	10,250	6,145	4,381	4,871
<b>Max</b>	27,300	35,250	28,540	62,090	42,920	57,160	54,200	43,650	31,160	21,650	14,500	21,960
<b>(WY)</b>	(1912)	(1922)	(1912)	(1913)	(1915)	(1910)	(1916)	(1919)	(1917)	(1917)	(1915)	(1911)
<b>Min</b>	968	1,155	4,424	3,128	5,314	10,550	10,540	8,782	3,605	1,599	1,274	930
<b>(WY)</b>	(1909)	(1909)	(1909)	(1918)	(1920)	(1915)	(1915)	(1922)	(1912)	(1923)	(1910)	(1909)

## 03036500 ALLEGHENY RIVER AT KITTANNING, PA—Continued

## SUMMARY STATISTICS

Water Years 1904 - 1923		
<b>Annual total</b>		
<b>Annual mean</b>	15,560	
<b>Highest annual mean</b>	20,680	1912
<b>Lowest annual mean</b>	11,640	1923
<b>Highest daily mean</b>	253,000	Mar 26 1913
<b>Lowest daily mean</b>	570	Sep 15 1913 <sup>a</sup>
<b>Annual seven-day minimum</b>	610	Sep 11 1913
<b>Maximum peak flow</b>	269,000	Mar 26 1913
<b>Maximum peak stage</b>	<sup>b</sup> 30.70	Mar 26 1913
<b>Annual runoff (cfsm)</b>	1.73	
<b>Annual runoff (inches)</b>	23.56	
<b>10 percent exceeds</b>	37,200	
<b>50 percent exceeds</b>	9,160	
<b>90 percent exceeds</b>	1,720	

<sup>a</sup> Also Sep 16, 17, 1913.

<sup>b</sup> From floodmark, site and datum then in use.

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 2012, BY WATER YEAR (WY)

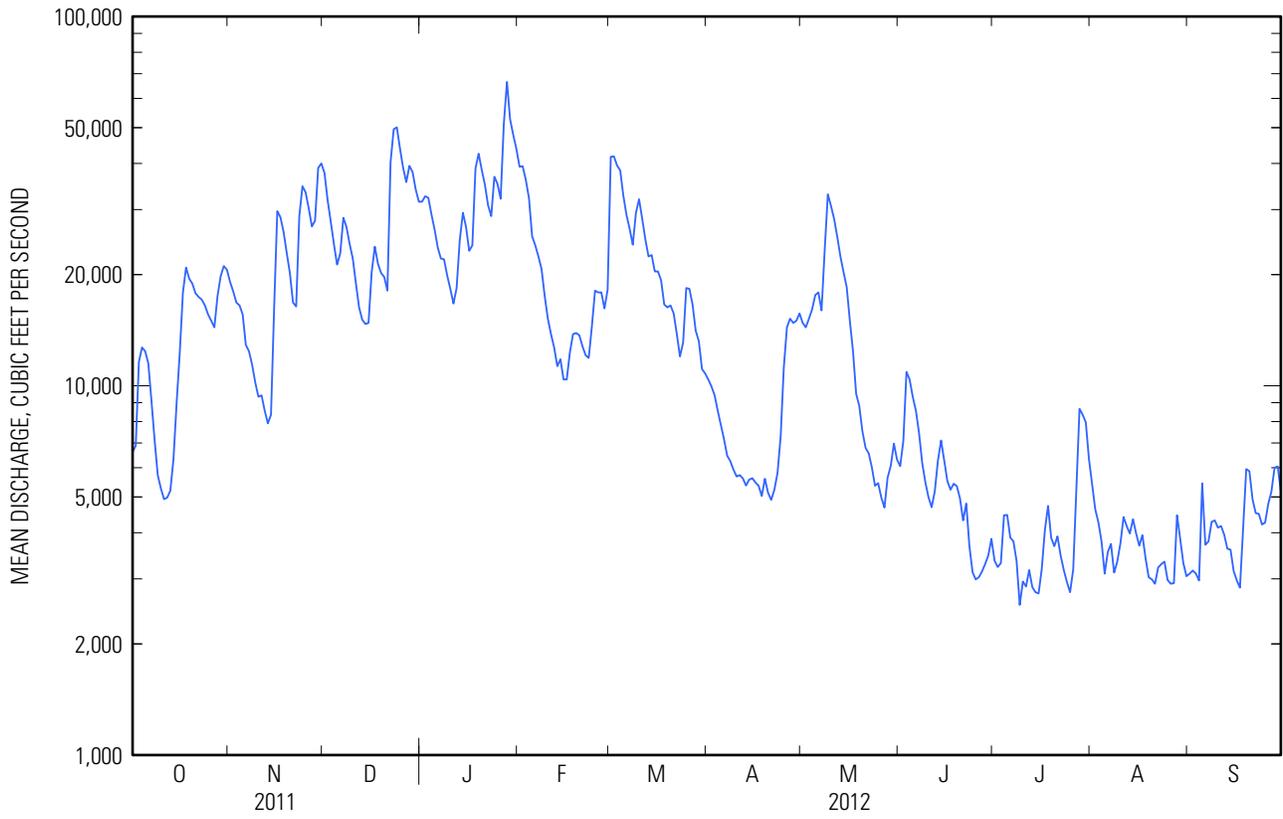
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	8,498	14,430	20,670	20,970	21,300	30,810	27,640	18,200	11,320	7,327	5,635	6,300
<b>Max</b>	35,750	37,830	55,850	62,840	45,020	74,110	66,140	40,520	40,230	28,200	19,250	40,250
<b>(WY)</b>	(2007)	(1986)	(1928)	(1937)	(1990)	(1936)	(1940)	(1943)	(1989)	(1972)	(1977)	(2004)
<b>Min</b>	848	1,879	1,636	2,752	4,688	8,342	6,585	4,860	2,893	1,511	1,351	1,102
<b>(WY)</b>	(1924)	(1924)	(1961)	(1961)	(1963)	(1969)	(1946)	(1941)	(1936)	(1966)	(1944)	(1939)

## SUMMARY STATISTICS

	Calendar Year 2011	Water Year 2012	Water Years 1924 - 2012
<b>Annual total</b>	8,079,690	5,332,820	
<b>Annual mean</b>	22,140	14,570	16,060
<b>Highest annual mean</b>			24,460
<b>Lowest annual mean</b>			10,080
<b>Highest daily mean</b>	108,000	Mar 11	66,500
<b>Lowest daily mean</b>	2,250	Aug 1	2,550
<b>Annual seven-day minimum</b>	2,750	Jul 31	2,840
<b>Maximum peak flow</b>			71,500
<b>Maximum peak stage</b>			16.16
<b>Annual runoff (cfsm)</b>	2.47		1.62
<b>Annual runoff (inches)</b>	33.50		22.11
<b>10 percent exceeds</b>	53,000		32,200
<b>50 percent exceeds</b>	14,400		11,400
<b>90 percent exceeds</b>	3,530		3,300

<sup>a</sup> From rating curve extended above 169,000 ft<sup>3</sup>/s based on straight-line extension.

**03036500 ALLEGHENY RIVER AT KITTANNING, PA—Continued**



**03036500 ALLEGHENY RIVER AT KITTANNING, PA—Continued****WATER-QUALITY RECORDS**

PERIOD OF RECORD.--April 2002 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: May 2009 to September 2009.

SPECIFIC CONDUCTANCE: May 2009 to September 2009.

pH: May 2009 to September 2009.

DISSOLVED OXYGEN: May 2009 to September 2009.

REMARKS.--Analyses for pH, water temperature, specific conductance, and dissolved oxygen were performed on site. All other sample analyses were performed at the Pennsylvania Department of Environmental Protection laboratory in Harrisburg, Pa.

COOPERATION.--Water-quality samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

**WATER-QUALITY DATA****WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 1 of 4

[ANC, acid neutralizing capacity; CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; M, presence verified but not quantified]

Date	Sample start time	Discharge, instantaneous, ft <sup>3</sup> /s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	Osmotic pressure, water, unfiltered, milliosmoles per kilogram (82550)	pH, water, unfiltered, field, standard units (00400)	pH, water, unfiltered, laboratory, standard units (00403)	Specific conductance, water, unfiltered, laboratory, µS/cm at 25°C (90095)	Specific conductance, water, unfiltered, laboratory, µS/cm at 25°C (00095)	Temperature, water, °C (00010)	Dissolved solids dried at 180°C, water, filtered, mg/L (70300)
10-11-2011	1300	4,610	12.1	< 1.0	8.0	7.7	240	234	16.3	152
12-20-2011	0800	21,400	11.3	< 1.0	--	6.8	168	187	4.0	128
02-14-2012	0930	13,200	16.4	3.0	7.1	7.4	--	373	.4	270
04-19-2012	1000	5,830	11.0	2.0	7.8	7.9	263	261	12.6	168
06-07-2012	0845	7,710	6.5	1.0	8.6	7.8	218	225	17.8	138
08-09-2012	0830	3,550	6.1	3.0	7.9	7.6	250	248	27.4	160

## 03036500 ALLEGHENY RIVER AT KITTANNING, PA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 2 of 4

[ANC, acid neutralizing capacity; CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; M, presence verified but not quantified]

Date	Sample start time	Hardness, water, mg/L as CaCO <sub>3</sub> (00900)	Suspended solids, water, unfiltered, mg/L (00530)	Calcium, water, unfiltered, recoverable, mg/L (00916)	Magnesium, water, unfiltered, recoverable, mg/L (00927)	Sodium, water, unfiltered, recoverable, mg/L (00929)	ANC, water, unfiltered, fixed endpoint (pH 4.5)	Bromide, water, filtered, mg/L (71870)	Chloride, water, filtered, mg/L (00940)	Sulfate, water, filtered, mg/L (00945)
							titration, laboratory, mg/L as CaCO <sub>3</sub> (00417)			
10-11-2011	1300	82	14	22.6	6.1	12.2	45	0.1	18.4	39.1
12-20-2011	0800	61	16	17.0	4.4	7.7	37	< .1	11.0	25.1
02-14-2012	0930	140	< 5	31.7	13.5	15.2	22	.1	23.7	113
04-19-2012	1000	99	16	26.4	8.1	11.5	46	.1	15.9	54.0
06-07-2012	0845	78	< 5	20.5	6.5	10.4	39	.1	15.0	40.6
08-09-2012	0830	76	6	19.6	6.5	13.9	41	.1	22.2	39.3

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 3 of 4

[ANC, acid neutralizing capacity; CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; M, presence verified but not quantified]

Date	Sample start time	Ammonia, water, unfiltered, mg/L as N (00610)	Nitrate, water, unfiltered, mg/L as N (00620)	Nitrite, water, unfiltered, mg/L as N (00615)	Orthophosphate, water, unfiltered, mg/L as P (70507)	Phosphorus, water, unfiltered, mg/L as P (00665)	Total nitrogen, water, unfiltered, mg/L (00600)	Aluminum, water, unfiltered, recoverable, µg/L (01105)	Barium, water, unfiltered, recoverable, µg/L (01007)	Copper, water, unfiltered, recoverable, µg/L (01042)
10-11-2011	1300	0.030	0.36	< .040	< .01	0.026	0.61	< 200	M	< 4
12-20-2011	0800	.030	.49	< .040	< .01	.032	.60	400	M	< 4
02-14-2012	0930	.040	.61	< .040	< .01	< .010	.68	< 200	M	< 4
04-19-2012	1000	.040	.25	< .040	< .01	.024	.51	800	M	< 4
06-07-2012	0845	.070	.65	< .040	< .01	.019	.89	200	M	< 4
08-09-2012	0830	.030	.18	< .040	< .01	.015	.40	< 200	M	< 4

## 03036500 ALLEGHENY RIVER AT KITTANNING, PA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 4 of 4

[ANC, acid neutralizing capacity; CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; M, presence verified but not quantified]

Date	Sample start time	Iron, water, unfiltered, recoverable, µg/L (01045)	Lead, water, unfiltered, recoverable, µg/L (01051)	Manganese, water, unfiltered, recoverable, µg/L (01055)	Nickel, water, unfiltered, recoverable, µg/L (01067)	Strontium, water, unfiltered, recoverable, micrograms per liter (01082)	Zinc, water, unfiltered, recoverable, µg/L (01092)	Boron, water, unfiltered, recoverable, micrograms per liter (01022)	Selenium, water, unfiltered, µg/L (01147)
10-11-2011	1300	470	< 1.0	160	< 50	110	< 10	< 200	< 7
12-20-2011	0800	800	M	160	< 50	60	< 10	< 200	< 7
02-14-2012	0930	280	< 1.0	460	< 50	170	10	< 200	< 7
04-19-2012	1000	2,750	M	380	< 50	110	20	< 200	< 7
06-07-2012	0845	470	M	180	< 50	110	< 10	< 200	< 7
08-09-2012	0830	170	< 1.0	100	< 50	130	< 10	< 200	< 7