



Water-Data Report 2013

**01532000 TOWANDA CREEK NEAR MONROETON, PA**

Upper Susquehanna Basin  
Upper Susquehanna-Tunkhannock Subbasin

LOCATION.--Lat 41°42'25", long 76°29'06" referenced to North American Datum of 1927, Bradford County, PA, Hydrologic Unit 02050106, on left bank on Township Route 406, 0.8 mi southwest of Monroeton, and 1.0 mi upstream from South Branch Towanda Creek.

DRAINAGE AREA.--215 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--February 1914 to current year.

REVISED RECORDS.--WSP 756: Drainage area. WSP 1051: 1943-44(M). WSP 1302: 1922(M), 1924, 1925-26(M), 1928, 1929(M), 1930-31. WSP 1432: 1921(M), 1932(M), 1933, 1934-35(M), 1936, 1938(M), 1940. WDR PA-78-2: 1972(M). WDR PA-87-2: 1978-79.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 765.53 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1942, nonrecording gage at present site at datum 8.62 ft higher. Water-stage recorder Oct. 1, 1942, to Sept. 25, 1975, 0.6 mi downstream at datum 11.82 ft lower. Nonrecording gage Sept. 26, 1975, to Aug. 26, 1976, at bridge 0.6 mi downstream at datum 11.82 ft lower. Nonrecording gage Aug. 27, 1976, to Oct. 20, 1977, at present site and datum. Satellite and landline telemetry at station.

COOPERATION.--Station established and maintained by the U.S. Geological Survey. Funding for this station is provided by the Pennsylvania Department of Environmental Protection and the U.S. Geological Survey through the National Streamflow Information Program.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,300 ft<sup>3</sup>/s and (or) maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 30	0045	6,250	12.69
Dec 21	0845	7,030	13.19
Jan 31	0530	*7,570	*13.53

Minimum discharge, 4.8 ft<sup>3</sup>/s, Sept. 20, 21, minimum gage height, 4.98 ft, Sep 9.

## 01532000 TOWANDA CREEK NEAR MONROETON, PA—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**  
**DAILY MEAN VALUES**

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	93	695	66	240	1,240	370	400	209	152	1,700	45	19
2	77	484	66	226	646	268	346	181	128	1,780	39	12
3	74	376	67	e210	511	220	292	165	127	907	34	10
4	69	298	67	202	415	193	265	160	107	530	32	11
5	60	248	93	191	351	182	256	138	90	364	28	9.4
6	56	211	102	183	308	175	235	125	79	281	24	8.2
7	65	185	89	185	e265	163	216	127	83	235	23	7.6
8	63	165	154	180	255	161	208	129	87	233	24	7.5
9	55	148	172	173	e235	e153	199	185	77	238	29	7.2
10	50	134	159	181	e206	192	201	145	70	192	34	7.1
11	45	122	306	202	232	276	483	245	138	201	28	7.0
12	41	111	264	722	222	2,020	862	251	123	156	23	7.6
13	37	165	220	1,310	205	1,550	785	182	141	141	30	11
14	33	191	198	1,560	215	810	557	157	433	126	28	12
15	32	153	182	966	212	564	447	142	246	106	21	9.8
16	32	134	174	693	211	462	385	130	169	90	19	8.1
17	30	123	199	540	e172	388	548	115	137	77	17	6.9
18	29	113	1,170	418	e148	325	418	104	114	75	16	6.2
19	41	107	790	359	161	335	505	97	99	64	15	5.6
20	88	104	530	354	e148	353	978	97	84	54	15	5.2
21	70	100	3,420	e282	e137	289	589	88	72	48	14	6.3
22	56	95	1,360	e199	e130	254	467	79	64	44	13	21
23	57	90	778	e153	116	231	395	99	60	61	13	20
24	113	88	560	e149	117	215	353	216	64	61	12	14
25	109	83	450	e149	111	217	392	189	64	48	10	11
26	88	78	368	e157	e114	214	317	135	55	40	11	11
27	79	76	346	e155	271	215	276	107	72	38	13	10
28	77	74	316	e157	491	209	251	133	786	92	13	11
29	842	70	289	e199	---	199	231	389	476	79	12	9.9
30	3,330	68	271	e667	---	195	227	276	290	51	11	9.3
31	1,240	---	e249	4,490	---	209	---	193	---	41	16	---
<b>Total</b>	7,131	5,089	13,475	15,852	7,845	11,607	12,084	4,988	4,687	8,153	662	301.9
<b>Mean</b>	230	170	435	511	280	374	403	161	156	263	21.4	10.1
<b>Max</b>	3,330	695	3,420	4,490	1,240	2,020	978	389	786	1,780	45	21
<b>Min</b>	29	68	66	149	111	153	199	79	55	38	10	5.2
<b>Cfsm</b>	1.07	0.79	2.02	2.38	1.30	1.74	1.87	0.75	0.73	1.22	0.10	0.05
<b>In.</b>	1.23	0.88	2.33	2.74	1.36	2.01	2.09	0.86	0.81	1.41	0.11	0.05

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	167	280	330	304	338	655	611	359	186	96.9	80.6	112
<b>Max</b>	1,092	1,326	1,117	1,542	1,169	2,287	1,838	1,262	1,922	1,376	986	1,917
<b>(WY)</b>	(1991)	(1927)	(1997)	(1996)	(1984)	(1936)	(1993)	(1946)	(1972)	(1915)	(1915)	(2011)
<b>Min</b>	6.46	7.84	16.8	10.1	40.4	135	110	54.5	16.0	7.72	3.71	1.76
<b>(WY)</b>	(1965)	(1931)	(1932)	(1931)	(1931)	(1965)	(1946)	(1926)	(1991)	(1955)	(1966)	(1964)

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SUMMARY STATISTICS

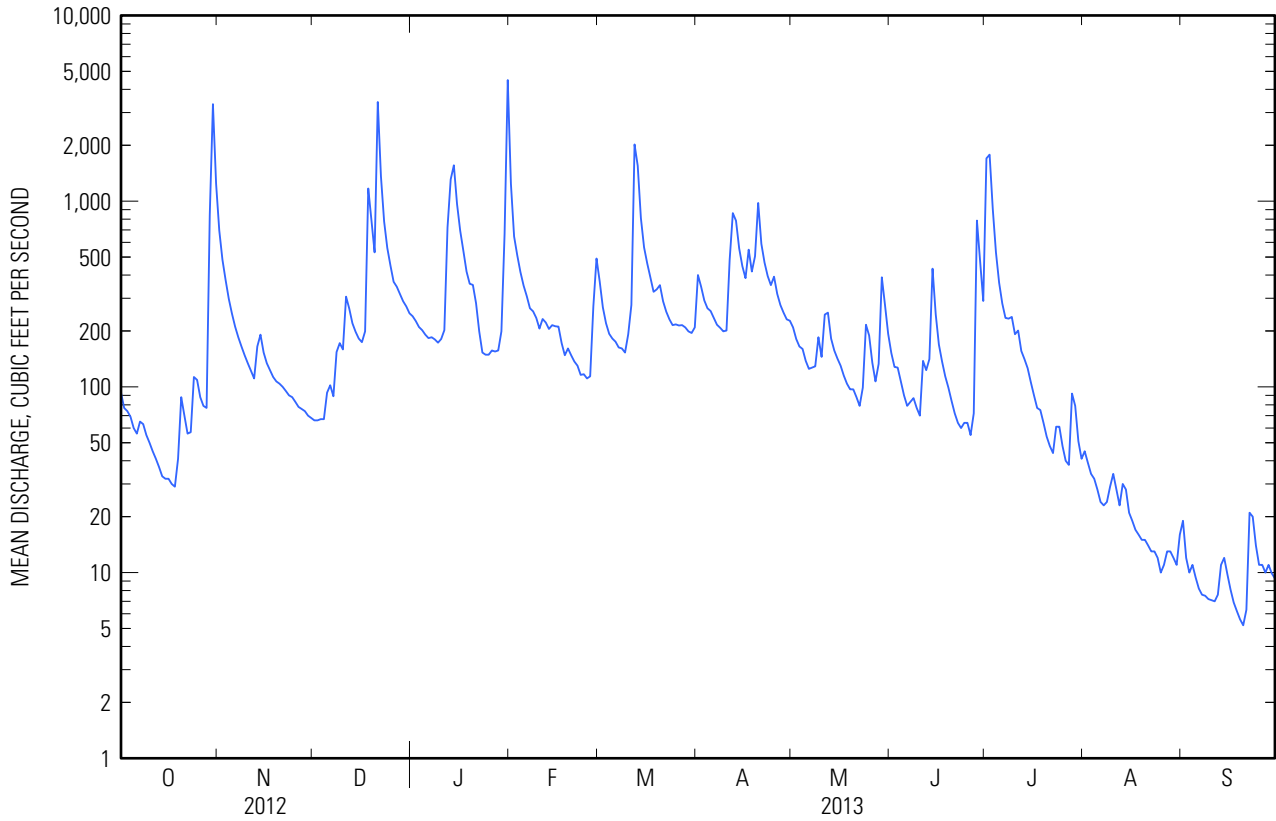
	Calendar Year 2012		Water Year 2013		Water Years 1914 - 2013	
<b>Annual total</b>	77,582.2		91,874.9			
<b>Annual mean</b>	212		252		292	
<b>Highest annual mean</b>					660 2011	
<b>Lowest annual mean</b>					111 1965	
<b>Highest daily mean</b>	3,420	Dec 21	4,490	Jan 31	28,700	Jun 22, 1972
<b>Lowest daily mean</b>	7.0	Aug 9	5.2	Sep 20	0.70	Sep 21, 1932
<b>Annual seven-day minimum</b>	10	Aug 4	6.9	Sep 15	0.87	Sep 16, 1932
<b>Maximum peak flow</b>			7,570	Jan 31	a,b74,000	Jun 22, 1972
<b>Maximum peak stage</b>			13.53	Jan 31	20.97	Sep 8, 2011
<b>Instantaneous low flow</b>			4.8	Sep 20 <sup>c</sup>	0.70	Sep 15, 1932 <sup>d</sup>
<b>Annual runoff (cfsm)</b>	0.986		1.17		1.36	
<b>Annual runoff (inches)</b>	13.42		15.90		18.48	
<b>10 percent exceeds</b>	449		519		665	
<b>50 percent exceeds</b>	124		149		120	
<b>90 percent exceeds</b>	16		14		14	

<sup>a</sup> Gage height 16.90 ft (15.3 ft in gage well) at site 0.6 mi downstream and datum 11.82 ft lower.

<sup>b</sup> From rating curve extended above 62,300 ft<sup>3</sup>/s based on slope-area measurement of peak flow at gage height 20.86 ft.

<sup>c</sup> Also Sep 21.

<sup>d</sup> Also Sep 17, 21, 22, 1932.



## 01532000 TOWANDA CREEK NEAR MONROETON, PA—Continued

## WATER-QUALITY RECORDS

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

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. Occasionally, values for filtered parameters may exceed values for the corresponding unfiltered parameter. These results are within the limits of analytical precision and methods.

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 2012 TO SEPTEMBER 2013**

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; <, 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, field, standard units (00400)	pH, water, 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)
11-06-2012	1430	206	14.1	< 1.0	7.5	7.4	89	93	6.5	42
01-30-2013	1430	663	12.6	< 1.0	8.2	7.4	105	110	.7	74
03-12-2013	1130	1,960	12.2	3.0	7.4	7.5	99	136	4.8	96
05-20-2013	1230	96	10.2	3.0	7.9	7.5	109	170	17.2	62
07-22-2013	1230	44	9.3	< 1.0	7.9	8.0	111	112	24.5	62
09-03-2013	1200	10	9.5	4.0	7.6	7.8	125	128	22.8	76

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**

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; <, 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) titration, laboratory, mg/L as CaCO <sub>3</sub> (00417)	Bromide, water, filtered, mg/L (71870)	Chloride, water, filtered, mg/L (00940)	Sulfate, water, filtered, mg/L (00945)
11-06-2012	1430	30	< 5	8.8	2.0	3.0	21	< 0.025	5.0	11.1
01-30-2013	1430	37	136	9.9	2.9	5.5	21	< 0.025	10.0	9.9
03-12-2013	1130	37	452	8.2	3.9	3.8	22	< 0.025	8.1	9.1
05-20-2013	1230	38	< 5	11.3	2.3	4.0	30	< 0.025	6.3	10.8
07-22-2013	1230	37	< 5	10.9	2.4	4.0	34	< 0.025	6.1	10.4
09-03-2013	1200	47	< 5	14.2	2.8	4.4	38	< 0.025	6.4	12.0

## 01532000 TOWANDA CREEK NEAR MONROETON, PA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**

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; <, 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)
11-06-2012	1430	< .020	0.41	< .040	0.01	0.014	0.49	300	M	< 4
01-30-2013	1430	.070	.57	< .040	.03	.143	.97	3,500	M	M
03-12-2013	1130	.040	.59	< .040	.03	.313	1.3	8,500	M	10
05-20-2013	1230	< .020	.26	< .040	< .01	.013	.39	< 200	M	< 4
07-22-2013	1230	.020	.16	< .040	< .01	< .010	< .25	< 200	M	< 4
09-03-2013	1200	.020	.16	< .040	< .01	.010	.32	< 200	M	< 4

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**

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; <, 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)
11-06-2012	1430	360	< 1.0	50	< 50	40	10	< 200	< 7
01-30-2013	1430	5,720	M	180	< 50	40	30	< 200	< 7
03-12-2013	1130	18,500	M	450	< 50	40	50	< 200	< 7
05-20-2013	1230	80	< 1.0	20	< 50	50	< 10	< 200	< 7
07-22-2013	1230	40	< 1.0	20	< 50	60	< 10	< 200	< 7
09-03-2013	1200	70	< 1.0	40	< 50	60	< 10	< 200	< 7