

## LEHIGH RIVER BASIN

## 01453000 LEHIGH RIVER AT BETHLEHEM, PA

**LOCATION.**--Lat 40°36'55", long 75°22'45", Lehigh County, Hydrologic Unit 02040106, on left bank 110 ft upstream from bridge on New Street at Bethlehem, and 1,800 ft upstream from Monocacy Creek. Records include flow of Monocacy Creek.

**DRAINAGE AREA.**--1,279 mi<sup>2</sup> (includes that of Monocacy Creek). At site used prior to Oct. 1, 1928, 1,229 mi<sup>2</sup>.

**PERIOD OF RECORD.**--October 1902 to January 1905, May 1909 to current year. Monthly discharge only for some periods, published in WSP 1302. Published as "at South Bethlehem" prior to October 1913.

**REVISED RECORDS.**--WSP 261: 1903-5. WSP 321: 1910-11. WSP 1051: Drainage area. WSP 1141: 1929-34(M). WSP 1302: 1914(M), 1916(M), 1918, 1921, 1927-28. WSP 1432: 1903, 1919(M), 1920-21, 1929, 1933.

**GAGE.**--Water-stage recorder and crest-stage gage. Datum of gage is 210.94 ft above sea level. Prior to October 1928, nonrecording gage at New Street bridge 120 ft downstream at same datum. Oct. 1, 1928, to Sept. 30, 1962, water-stage recorder at site 4,250 ft downstream at datum 2.49 ft lower. Oct. 1, 1963, to Dec. 14, 1975, water-stage recorder at site 40 ft downstream at same datum.

**REMARKS.**--No estimated daily discharges. Records fair. Flow regulated by Wild Creek Reservoir (station 01449700) since January 1941, Penn Forest Reservoir (station 01449400) since October 1958, Francis E. Walter Reservoir (station 01447780) since February 1961, and Beltzville Lake (station 01449790) since February 1971. Satellite telemetry at station.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Flood of Feb. 28, 1902 reached a stage of 24.9 ft, from floodmark, present site and datum, discharge, about 88,000 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	560	775	838	590	3640	2600	2800	1670	1070	745	522	449
2	638	776	819	529	4630	2810	2660	1630	1060	689	529	473
3	758	762	803	1790	5740	2530	2520	1560	1120	714	510	543
4	829	722	807	1830	5640	3000	2530	1570	1080	721	515	560
5	805	708	799	1050	5090	4260	2520	1580	1030	701	550	596
6	702	690	699	915	3970	3840	2380	1510	968	686	561	636
7	636	658	685	1050	3740	3590	2230	1480	930	700	535	736
8	1590	620	708	973	3660	3130	2050	1710	944	710	577	970
9	2010	610	773	2050	3310	2580	2030	1710	883	677	592	698
10	3360	608	767	3270	2910	2480	2690	1600	853	654	592	794
11	3100	798	745	1920	2760	2480	2880	1550	842	645	586	570
12	2190	953	739	1830	2760	2430	2990	1410	803	607	604	497
13	1660	854	675	1860	3260	2280	2550	1310	962	678	616	481
14	1650	801	682	1650	3140	2190	2210	1250	1060	840	1330	474
15	1740	707	666	1450	3060	2370	2100	1210	954	791	1030	691
16	1500	699	610	1660	2990	2310	2230	1270	893	677	845	7470
17	1480	694	672	1620	2700	2240	2400	1130	834	637	597	16700
18	1470	687	634	5280	2930	2290	2170	1090	941	619	524	5330
19	1140	677	662	9970	2970	2460	2080	1790	948	641	501	3020
20	1000	680	600	6360	2720	2420	2310	1820	824	615	511	2030
21	954	702	582	4980	2590	2510	2280	1610	807	597	497	1860
22	904	668	596	4690	2430	5610	2170	1510	804	595	504	2030
23	896	661	642	5110	2200	5940	2250	1880	784	655	489	1990
24	896	657	635	12100	2090	5520	2450	2190	755	578	476	1770
25	858	617	599	12300	2020	4780	2270	2160	742	524	464	2300
26	853	934	536	12600	2060	4140	2210	1870	743	521	700	2490
27	842	1170	533	10400	1910	3560	2170	1660	928	496	659	1930
28	845	918	611	7830	2010	3480	1970	1510	887	523	552	1680
29	863	885	660	6090	---	3330	1840	1490	781	564	486	1650
30	844	856	687	4490	---	3130	1750	1410	750	528	451	4040
31	818	---	491	4000	---	3010	---	1110	---	512	455	---
TOTAL	38391	22547	20955	132237	88930	99300	69690	48250	26980	19840	18360	65458
MEAN	1238	752	676	4266	3176	3203	2323	1556	899	640	592	2182
MAX	3360	1170	838	12600	5740	5940	2990	2190	1120	840	1330	16700
MIN	560	608	491	529	1910	2190	1750	1090	742	496	451	449
CFSM	.97	.59	.53	3.34	2.48	2.50	1.82	1.22	.70	.50	.46	1.71
IN.	1.12	.66	.61	3.85	2.59	2.89	2.03	1.40	.78	.58	.53	1.90

LEHIGH RIVER BASIN

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1999, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1575	2338	2904	2725	2804	3852	3928	3070	2046	1617	1314	1375
MAX (WY)	5778	5294	9067	7898	5820	7708	10180	7041	7272	6362	6192	6907
MIN (WY)	1956	1952	1997	1979	1951	1977	1993	1989	1972	1945	1955	1987
MIN (WY)	406	474	514	286	1132	1632	1428	1053	681	366	405	334
MIN (WY)	1964	1965	1981	1981	1980	1981	1985	1941	1965	1965	1964	1964

SUMMARY STATISTICS FOR 1998 CALENDAR YEAR FOR 1999 WATER YEAR WATER YEARS 1941 - 1999

ANNUAL TOTAL	911119			650938										
ANNUAL MEAN	2496			1783			2460							
HIGHEST ANNUAL MEAN							3973							
LOWEST ANNUAL MEAN							1165							
HIGHEST DAILY MEAN	11300			Mar 10			16700		Sep 17		70400		Aug 19 1955	
LOWEST DAILY MEAN	491			Dec 31			449		Sep 1		210		Jan 31 1981	
ANNUAL SEVEN-DAY MINIMUM	588			Dec 25			487		Aug 28		216		Jan 26 1981	
INSTANTANEOUS PEAK FLOW							24900		Sep 17		a92000		May 23 1942	
INSTANTANEOUS PEAK STAGE							10.65		Sep 17		b25.90		May 23 1942	
ANNUAL RUNOFF (CFSM)	1.95						1.39				1.92			
ANNUAL RUNOFF (INCHES)	26.50						18.93				26.14			
10 PERCENT EXCEEDS	5500						3410				4860			
50 PERCENT EXCEEDS	1570						1030				1770			
90 PERCENT EXCEEDS	658						561				682			

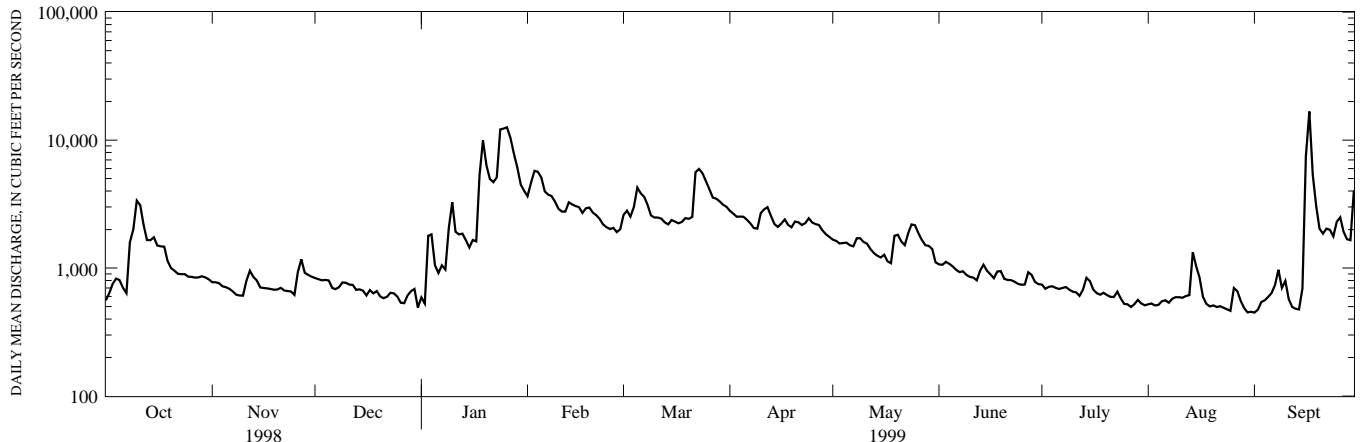
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903-1904, 1909-1940, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1532	1827	2184	2346	2430	4134	3815	2280	1753	1530	1239	1214
MAX (WY)	4808	5660	5287	5287	5913	11920	7547	3681	4255	5182	4599	6407
MIN (WY)	1903	1927	1939	1915	1915	1936	1940	1924	1928	1935	1933	1933
MIN (WY)	308	370	470	677	668	1887	1499	1020	832	572	428	374
MIN (WY)	1911	1910	1931	1925	1934	1911	1915	1926	1921	1912	1910	1932

SUMMARY STATISTICS WATER YEARS 1903 - 1904 1909 - 1940

ANNUAL MEAN	2189	
HIGHEST ANNUAL MEAN	3600	
LOWEST ANNUAL MEAN	1262	
HIGHEST DAILY MEAN	47900	Aug 24 1933
LOWEST DAILY MEAN	160	Oct 15 1910
ANNUAL SEVEN-DAY MINIMUM	260	Oct 13 1910
INSTANTANEOUS PEAK FLOW	64800	Aug 24 1933
INSTANTANEOUS PEAK STAGE	18.70	Aug 24 1933
INSTANTANEOUS LOW FLOW	160	Oct 15 1910
ANNUAL RUNOFF (CFSM)	1.71	
ANNUAL RUNOFF (INCHES)	23.25	
10 PERCENT EXCEEDS	4420	
50 PERCENT EXCEEDS	1500	
90 PERCENT EXCEEDS	548	

- a From rating curve extended above 58,000 ft<sup>3</sup>/s on basis of slope-area measurement at gage height, 20.02 ft at present site and datum.
- b From floodmark, present site and datum.



1-YEAR HYDROGRAPH  
OCTOBER 1, 1998 TO SEPTEMBER 30, 1999