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Prepared in cooperation with the State of West Virginia and with other agencies

Water Resources Data West Virginia Water Year 2003

Water-Data Report WV-03-1

U.S. Department of the Interior
U.S. Geological Survey

CALENDAR FOR WATER YEAR 2003

2002

OCTOBER

S	M	T	W	T	F	S
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2003

JANUARY

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JULY

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31						

SEPTEMBER

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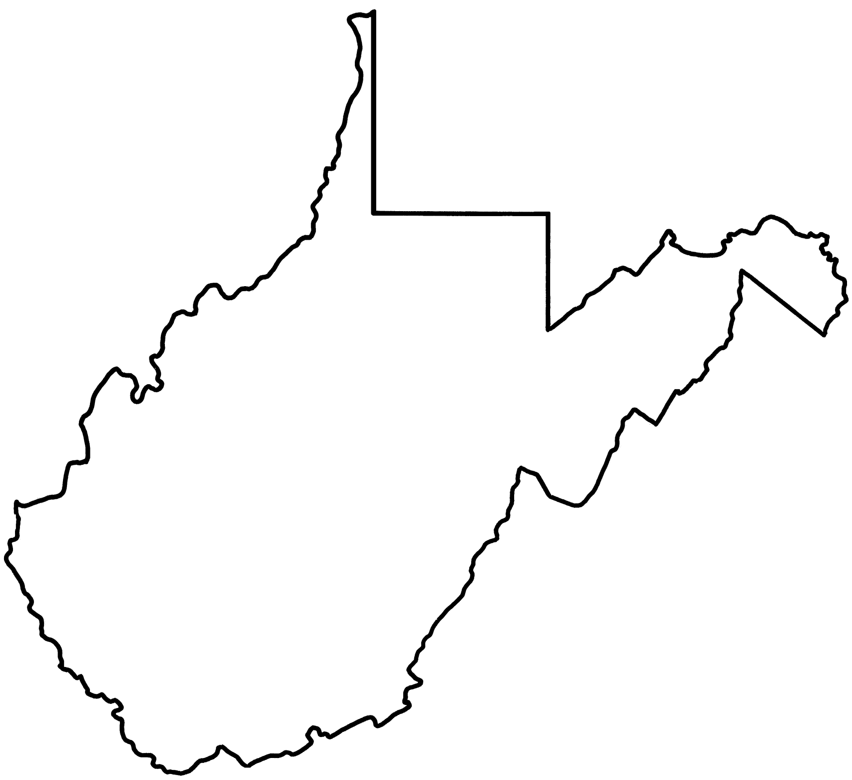
28	29	30				

Water Resources Data
West Virginia
Water Year 2003

By S.M. Ward, M.T. Rosier, and G.R. Crosby

Water-Data Report WV-03-1



Prepared in cooperation with the
State of West Virginia and with other agencies

U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
Gale A. Norton, Secretary

U.S. Geological Survey
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2004

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PREFACE

This volume of the annual hydrologic data report for West Virginia is one of a series of annual reports that documents hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and Trust Territories. These records of streamflow, ground-water levels, and water quality provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. The authors had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines. The following individuals contributed significantly to the collection, processing, and tabulation of the data under the general supervision of Hugh E. Bevans, District Chief:

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13. ABSTRACT *(Maximum 200 words)*
Water-resources data for the 2003 water year for West Virginia consists of records of stream discharge, reservoir and groundwater levels, and water quality of streams and groundwater wells. This report contains discharge records for 70 streamflow-gaging stations; discharge records provided by adjacent states for 8 streamflow-gaging stations; annual maximum discharge at 16 crest-stage partial-record stations; stage records for 6 detention reservoirs; water-quality records for 2 stations; and water-level records for 8 observation wells. Locations of streamflow, detention reservoir, and water-quality stations are shown on figure 4. Locations of ground-water observation wells are shown on figure 5. Additional water data were collected at various sites, not involved in the systematic data collection program, and are published as miscellaneous sites. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in West Virginia.

14. SUBJECT TERMS
*West Virginia, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water levels, Water analyses, Detention reservoirs.

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SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

NOTE.--Data for partial-record stations and miscellaneous sites for both surface-water discharge and quality are published in separate sections of the data report. See references at the end of this list for page numbers for these sections.

[Letters after station name designate type of data collected: (d) discharge, (e) stage, (c) chemical, (b) biological, (m) microbiological, (sK) conductance, (pH) pH units, (t) water temperature, (DO) dissolved oxygen, (s) sediment, (a) annual maximum]

* Records furnished by Maryland District, U.S. Geological Survey.

SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

[Letters after station name designate type of data collected: (d) discharge, (e) stage, (c) chemical, (b) biological, (m) microbiological, (sK) conductance, (pH) pH units, (t) water temperature, (DO) dissolved oxygen, (s) sediment, (a) annual maximum]

**Records furnished by Virginia District, U.S. Geological Survey.

SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

[Letters after station name designate type of data collected: (d) discharge, (e) stage, (c) chemical, (b) biological, (m) microbiological, (sK) conductance, (pH) pH units, (t) water temperature, (DO) dissolved oxygen, (s) sediment, (a) annual maximum]

GROUND-WATER WELLS, BY COUNTY, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS, LISTED IN DOWNSTREAM ORDER

The following continuous-record surface-water discharge (gaging stations) in West Virginia have been discontinued. Daily streamflow records (discharge) were collected and published for the period of record, expressed in water years, shown for each station.

	Station number	Drainage area (mi^2)	Period of record	Last year revisions published
NORTH ATLANTIC SLOPE BASINS				
POTOMAC RIVER BASIN				
Abram Creek at Oakmont	01595300	42.6	1956-1982	
New Creek near Keyser	01599500	46.5	1930-1931	
			1948-1963	
South Branch Potomac River:				
Friends Run near Franklin	01605600	4.39	1969-1977	
South Mill Creek:				
Spring Run:				
Big Spring at Masonville	01607000	---	1946-1959	
			1968-1969	
Fort Run near Moorefield	01608050	4.85	1969-1977	
South Branch Potomac River near Moorefield	01608070	1,241	1994-2002	
Buffalo Creek near Romney	01608400	4.33	1969-1977	
Potomac River:				
Little Cacapon River near Levels	01609800	108	1967-1977	
Lost River at McCauley near Baker	01610200	155	1972-1980	1997
Cacapon River above Wardensville	01610300	181	1972-1973	
Cacapon River at Yellow Spring	01610500	306	1940-1952	
Back Creek near Jones Springs	01614000	235	1929-1931	
			1939-1975	
Tuscarora Creek above Martinsburg	01617000	11.3	1949-1963	
			1968-1977	
OHIO RIVER BASIN				
MONONGAHELA RIVER BASIN				
Roaring Creek at Norton	03050800	29.2	1965-1969	
Grassy Run at Norton	03050900	2.86	1965-1969	
Middle Fork River at Midvale	03051500	122	1915-1942	1998
Tygart Valley River at Tygart Dam near Grafton	03056000	1,182	1938-1983	
			1987-1991	
Tygart Valley River at Fetterman	03056500	1,304	1907-1939	
Tygart Valley River at Colfax	03057000	1,363	1939-1995	
West Fork River at Walkersville	03057300	28.8	1984-1992	
Skin Creek near Brownsville	03057500	25.7	1946-1960	
West Fork River below Stonewall Jackson Dam near Weston	03058000	101	1991	
(Formerly West Fork River at Brownsville)	"	101	1946-1984	
(Formerly West Fork River at Bendale)	03058006	105	1985-1990	
West Fork River at Butcherville	03058500	181	1915-2000	
West Fork River at Clarksburg	03059000	384	1923-1983	1998
Elk Creek at Quiet Dell	03059500	84.6	1944-1970	
Tenmile Creek:				
Salem Fork:				
Salem Fork at Salem	03060500	8.32	1951-1969	

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS, LISTED IN DOWNSTREAM ORDER--Continued

	Station number	Drainage area (mi^2)	Period of record	Last year revisions published
OHIO RIVER BASIN.--Continued				
MONONGAHELA RIVER BASIN--Continued				
Monongahela River:				
Buffalo Creek:				
Owen Davy Fork:				
Laurel Run at Curtisville	03061410	1.11	1978-1980	
Dents Run:				
Hibbs Run near Mannington	03061435	1.42	1978-1979	
Davy Run at Katy	03061495	1.76	1978-1979	
Monongahela River at Lock 15, at Hoult	03062000	2,388	1915-1926 1939-1965 1967	
Indian Creek:				
Stewart Run at Crown	03062213	2.43	1978-1979	
Indian Creek at Crown	03062215	11.8	1978-1980	
Cobun Creek at Morgantown	03062400	11.0	1965-1994 1998-2002	
Dry Fork (head of Cheat River):				
Horsecamp Run at Harman	03063600	6.57	1969-1977	
Blackwater River at Canaan Valley State Park	03065050	9.48	1992	
Blackwater River at Cortland	03065200	18.5	1992-1993	
Tub Run near Douglas	03066630	1.17	1980-1984	
Big Run near Douglas	03066720	1.30	1980-1982	
West Fork Big Run near Douglas	03066730	1.07	1980-1982	
Black Fork (continuation of Dry Fork):				
Shavers Fork:				
Shavers Fork at Bemis	03068000	115	1922-1926 1974-1979	
Shavers Fork at Flint	03068500	124	1925-1932	
Shavers Fork above Bowden	03068600	138	1975-1980	
Taylor Run near Alpena	03068604	1.06	1979-1980	
Stalnaker Run near Bowden	03068607	1.55	1979-1980	
Taylor Run at Bowden	03068610	5.06	1973-1982	1997
North Spring at Bowden	03068690	---	1975-1981	
South Spring at Bowden	03068710	---	1975-1980	
Shavers Fork at Parsons	03069000	213	1911-1926 1941-1993	1997
Buffalo Creek near Rowlesburg	03069880	12.2	1967-1977	
Cheat River at Rowlesburg	03070000	939	1924-1996	1997
Conner Run near Valley Point	03070310	0.38	1982-1983	
Cheat River near Mt. Nebo	03070350	1,132	1997-1998	
Cheat River near Pisgah	03071000	1,354	1928-1958	1998
Cheat River near Morgantown	03071500	1,380	1902-1906 1909-1919 1923-1926	
Youghiogheny River:				
Muddy Creek:				
Hayes Run near Cranesville	03075650	0.93	1980-1982	
Muddy Creek near Cranesville	03075670	5.09	1980-1982	
White Oak Springs Run:				
Cupp Run near Cranesville	03075680	1.42	1980-1982	

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS, LISTED IN DOWNSTREAM ORDER--Continued

	Station number	Drainage area (mi^2)	Period of record	Last year revisions published
OHIO RIVER BASIN.--Continued				
Ohio River at Martins Ferry	03111534	24,620	1978-1995	
LITTLE GRAVE CREEK BASIN				
Little Grave Creek near Glendale	03113700	4.95	1970-1977	1997
MIDDLE ISLAND CREEK BASIN				
Middle Island Creek at Little	03114500	458	1915-1916 1929-1995	
Buffalo Run near Little	03114650	4.19	1969-1977	
Ohio River at St. Marys	03115000	26,820	1938-1972	
Ohio River at Parkersburg	03151000	35,650	1940-1968	
LITTLE KANAWHA RIVER BASIN				
Little Kanawha River near Burnsville	03151500	155	1938-1974	
Little Kanawha River below Burnsville Dam	03151520	163	1976-1982 1987-1993	
Little Kanawha River at Burnsville	03151600	248	1974-1978	
Little Kanawha River at Glenville	03152000	387	1929-1983 1985-2000	
Leading Creek:				
Buck Run near Leopold	03152200	2.91	1970-1977	
Leading Creek near Glenville	03152500	144	1938-1952	
Steer Creek near Grantsville	03153000	162	1938-1975	
Little Kanawha River at Grantsville	03153500	913	1929-1978	
West Fork Little Kanawha River at Rocksdale	03154000	205	1929-1931 1938-1975	1997
Spring Creek:				
Tanner Run at Spencer	03154250	2.82	1969-1977	
Reedy Creek near Reedy	03154500	79.4	1952-1978	2001
South Fork Hughes River at MacFarlan	03155200	210	1915-1916 1938-1952	
North Bend Run near Cairo	03155410	0.14	1985-1987	
Hughes River at Cisco	03155500	453	1929-1931 1938-1994	1997
Robinson Run near Petroleum	03155520	0.07	1985-1987	
Ohio River at Belleville Dam	03159530	39,360	1975-1985	
Ohio River at Racine Dam	03159870	40,130	1980	
Ohio River at Pomeroy, OH	03160000	40,190	1940-1968	
KANAWHA RIVER BASIN				
New River:				
Rich Creek near Peterstown	03177000	50.6	1942-1951	
Indian Creek at Indian Mills	03177500	189	1942-1951	
Bluestone River:				
Bluestone River near Spanishburg	03178000	199	1945-1952 1997-1998	

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS,
LISTED IN DOWNSTREAM ORDER--Continued

	Station number	Drainage area (mi^2)	Period of record	Last year revisions published
OHIO RIVER BASIN.--Continued				
KANAWHA RIVER BASIN--Continued				
New River:				
Bluestone River:				
Camp Creek near Camp Creek	03178500	32.0	1947-1971	
Bluestone River at Lilly	03179500	438	1908-1916 1930-1948	
New River at Bluestone Dam	03180000	4,602	1924-1969 1976-1983	
East Fork Greenbrier River at Frank	03180300	67.1	1988-1994	
Stoney Creek:				
Indian Draft near Marlinton	03181200	3.06	1968-1977	
Greenbrier River at Marlinton	03181500	408	1909-1916	
Knapp Creek at Marlinton	03182000	108	1946-1958	1997
Spring Creek at Spring Creek	03182650	120	1972-1973	
Anthony Creek near Anthony	03182700	144	1972-1982	
Howard Creek at Caldwell	03182950	84.4	1972-1978	
Second Creek near Second Creek	03183000	80.8	1946-1973 1997-1998	
Davis Spring at Fort Spring	03183200	---	1972-1973	
Big Creek near Bellepoint	03184200	8.27	1969-1977	
New River at Caperton	03185500	6,826	1929-1958	
New River at Fayette	03186000	6,850	1895-1901 1903-1904 1908-1916	1998
Gauley River:				
Gauley River at Camden-on-Gauley	03187000	236	1909-1916 1930-1975	
Cranberry River:				
North Fork Cranberry River near Hillsboro	03187300	9.78	1969-1982	
Cherry River at Richwood	03188500	85.0	1908-1916	
Cherry River at Fenwick	03189000	150	1930-1969 1980-1982	1997
Gauley River near Summersville	03189500	680	1909-1916 1929-1965	
Collison Creek near Nallen	03189650	2.78	1967-1977	
Meadow River at McRoss	03189890	163	1980-1982	
Meadow River at Nallen	03190000	287	1909-1916 1929-1971	
Twentymile Creek at Vaughan	03192200	46.2	2000-2001	
Gauley River at Belva	03192500	1,402	1908-1916	1998
Slaughter Creek:				
Right Fork Little Creek near Chelyan	03193776	0.91	1983	
Little Creek near Chelyan	03193778	1.44	1982-1984	

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS, LISTED IN DOWNSTREAM ORDER--Continued

	Station number	Drainage area (mi^2)	Period of record	Last year revisions published
OHIO RIVER BASIN.--Continued				
KANAWHA RIVER BASIN--Continued				
Elk River:				
Gilmer Run near Marlinton	03193830	1.80	1968-1977	
Elk River at Webster Springs	03194000	168	1908-1916	
Elk River below Back Fork at Webster Springs	03194500	242	1930-1934	
Elk River at Centralia	03195000	281	1935-1963	1997
Right Fork Holly River at Guardian	03195100	51.9	1974-1978 1986-1987	1998
Left Fork Holly River near Replete	03195250	46.5	1974-1978 1986-1987	1998
Elk River at Sutton	03195500	542	1939-1992	
Granny Creek at Sutton	03195600	6.98	1967-1977	
Elk River at Gassaway	03196000	578	1908-1916	
Birch River at Herold	03196500	124	1974-1975 1979-1984	
Elk River near Frametown	03196600	751	1959-1981	
Buffalo Creek at Clay	03196750	114	1974-1975	
Elk River at Clay	03196800	992	1959-1978	
Big Sandy Creek:				
Left Hand Creek near Clendenin	03197440	27.8	1974-1975	
Elk River at Clendenin	03197500	1,290	1908-1916	
Elk River at Blue Creek	03197680	1,336	1985-1986	
Little Sandy Creek near Elkview	03197790	43.6	1985-1987	
Davis Creek:				
Trace Fork at Ruth	03198020	2.73	1980-1984	
Track Fork downstream Dryden Hollow at Ruth	03198022	4.72	1980-1984	
Coal River:				
Big Coal River:				
Drawdy Creek near Peytona	03198450	7.75	1969-1977	
Big Coal River near Alum Creek	03198550	445	1975-1982	
Spruce Fork at Sharples	03198690	44.1	2000-2001	
Little Coal River at Danville	03199000	269	1930-1984	1997
Rock Creek near Danville	03199300	12.2	1979-1984	
Little Coal River at Julian	03199400	318	1975-1984	*1983
Coal River at Alum Creek	03199700	837	1975-1979	
Coal River at Fuqua	03200000	849	1912-1916	
Pocatalico River:				
Pocatalico River at Sissonville	03201000	238	1908-1916 1930-1931 1937-1978 1979-1980 1997-1998	1997
Hurricane Creek:				
Poplar Fork at Teays	03201410	8.71	1967-1978	1997
Ohio River at Point Pleasant	03201500	52,740	1940-1977	

* Discharge revised for water years 1975-82 in 1983 annual report.

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS, LISTED IN DOWNSTREAM ORDER--Continued

	Station number	Drainage area (mi²)	Period of record	Last year revisions published
OHIO RIVER BASIN.--Continued				
GUYANDOTTE RIVER BASIN				
Guyandotte River:				
Allen Creek at Allen Junction	03202240	8.43	1978-1979	
Slab Fork:				
Marsh Fork at Maben	03202245	4.85	1978-1980	
Still Run at Itmann	03202255	7.12	1978-1979	
Cabin Creek:				
Black Fork above Black Fork Falls near Mullens	03202260	2.68	1981-1983	
Black Fork at Mouth near Mullens	03202262	2.76	1981-1983	
Rockcastle Creek:				
Bearhole Fork at Pineville	03202310	6.27	1978-1979	
Indian Creek:				
Brier Creek at Fanrock	03202480	7.34	1969-1977	1997
Indian Creek at Fanrock	03202490	41.3	1974-1981	1997
Clear Fork:				
Laurel Fork:				
Milam Fork at McGraws	03202695	6.64	1978-1979	
Guyandotte River near Justice	03202900	512	1963-1968	
Guyandotte River below R.D. Bailey Dam	03202915	535	1979-1982 1987-1991	
Guyandotte River at Man	03203000	758	1929-1962	1997
Island Creek:				
Copperas Mine Fork:				
Whitman Creek at Whitman	03203670	10.9	1969-1977	
Guyandotte River at Branchland	03204000	1,224	1915-1917 1929-1995	
Mud River at Mud	03204220	17.0	2000-2001	
Mud River near Milton	03204500	256	1938-1980	1997
Ohio River at Huntington	03206000	55,850	1935-1986	
Fourpole Creek at Huntington	03206500	21.5	1940-1948	
TWELVEPOLE CREEK BASIN				
East Fork Twelvepole Creek below East Lynn Dam	03206790	138	1968-1982	
East Fork Twelvepole Creek near East Lynn	03206800	139	1962-1967	
West Fork Twelvepole Creek above Wayne at Echo	03206980	108	1979-1981	
Twelvepole Creek at Wayne	03207000	291	1915-1917 1927-1931 1947-1954 1956-1966	
Twelvepole Creek below Wayne	03207020	300	1915-1917 1927-1931 1947-1954 1956-1982	1998
Beech Fork below Beech Fork Dam	03207057	79.2	1976-1982	

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS, LISTED IN DOWNSTREAM ORDER--Continued

	Station number	Drainage area (mi^2)	Period of record	Last year revisions published
OHIO RIVER BASIN.--Continued				
BIG SANDY RIVER BASIN				
Tug Fork:				
Indian Creek:				
Puncheoncamp Branch at Leckie	03212558	1.36	1980-1982	
South Fork:				
Freeman Branch near Skygusty	03212567	0.30	1980-1982	
Sandlick Creek:				
Left Fork Sandlick Creek at Elbert	03212580	1.78	1980-1982	
Right Fork Sandlick Creek near Gary	03212585	1.21	1980-1982	
Tug Fork at Welch	03212600	85.9	1979-1981	
Elkhorn Creek at Maitland	03212700	69.9	1979-1980	
Elkhorn Creek Tributary at Welch	03212703	0.63	1980-1982	
Dry Fork at Avondale	03212985	225	1979-1981	
Tug Fork at Litwar	03213000	504	1930-1984	
Panther Creek:				
Crane Creek near Panther	03213495	0.54	1981-1982	
Tug Fork at Vulcan	03213620	778	1985-1993	
Pigeon Creek near Lenore	03213800	93.9	1979-1981	
Tug Fork near Kermit	03214000	1,188	1934-1985	
Rockcastle Creek at Inez, KY	03214700	63.1	1980-1981	
Tug Fork at Glenhayes	03214900	1,507	1976-1982 1991-1992	

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER-QUALITY STATIONS, LISTED IN DOWNSTREAM ORDER

The following continuous-record surface-water-quality stations in West Virginia have been discontinued. Daily records of specific conductance (sK), pH, water temperature (t), dissolved oxygen (DO), sediment (s), and turbidity (U) were collected for the period (in water years) shown for each station.

	Station number	Drainage area (mi^2)	Type of record	Period of record
NORTH ATLANTIC SLOPE BASINS				
POTOMAC RIVER BASIN				
North Fork South Branch Potomac River at Cabins	01606000	335	t	1961
South Branch Potomac River near Petersburg	01606500	676	t	1947-1953
				1955-1973
			sK	1968-1969
South Branch Potomac River near Springfield	01608500	1,486	sK, t	1968-1969
Lost River at McCauley near Baker	01610200	155	t	1975-1976
Cacapon River near Great Cacapon	01611500	675	t	1949-1953
				1961
Cacapon River at Great Cacapon	01611600	---	t	1959-1964
Opequon Creek near Martinsburg	01616500	273	sK, t	1969-1970
Shenandoah River at Millville	01636500	3,040	sK, t	1980-1983
OHIO RIVER BASIN				
MONONGAHELA RIVER BASIN				
Tygart Valley River at Elkins	03050400	268	t	1947-1992
Roaring Creek at Norton	03050800	29.2	t, s	1965-1967
Grassy Run at Norton	03050900	2.86	t, s	1965-1967
West Fork River below Stonewall Jackson Dam near Weston	03058000	101	sK, pH	1999-2000
			t, DO	1999-2000
Tenmile Creek:				
Salem Fork:				
Salem F Subwatershed #11A Varner Hollow near Salem	03060000	---	t, s	1961
Salem Fork at Salem	03060500	8.32	s	1956-1958
				1962
Monongahela River:				
West Fork River at Enterprise	03061000	759	sK, pH	1999-2000
			t, DO	1999-2000
Buffalo Creek at Barrackville	03061500	116	sK, t, s	1979-1981
Black Fork (continuation of Dry Fork):				
Blackwater River at Canaan Valley State Park	03065050	9.48	sK, pH	1991-1993
				2001
			t, DO	1991-1993
				2001
Blackwater River at Cortland	03065200	18.5	sK, pH	1991-1993
				2001
			t, DO	1991-1993
				2001
Blackwater River near Davis	03065400	54.7	sK, pH	1991-1993
				1995-1997
				2001
			t, DO	1991-1993
				1995-1997
				2001
Shavers Fork above Bowden	03068600	138	sK, s, U	1975-1980
			pH	1978-1979
			t	1976-1979

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER-QUALITY STATIONS, LISTED IN DOWNSTREAM ORDER--Continued

	Station number	Drainage area (mi^2)	Type of record	Period of record
OHIO RIVER BASIN--Continued				
MONONGAHELA RIVER BASIN--Continued				
Taylor Run at Bowden	03068610	5.06	sK	1973-1980
			pH	1973-1974
				1978-1979
			t	1973-1974
				1976-1979
			s, U	1975-1980
North Spring at Bowden	03068690	---	t	1977-1981
			U	1975-1980
South Spring at Bowden	03068710	---	t	1977-1980
			U	1975-1980
Shavers Fork below Bowden	03068800	151	sK	1973-1981
			pH	1973-1974
			t	1973-1979
				1981
			s, U	1975-1981
Shavers Fork at Parsons	03069000	213	t	1956-1964
				1974-1975
Cheat River at Lake Lynn, PA	03071600	1,411	t	1949-1957
				1959-1992
LITTLE KANAWHA RIVER BASIN				
Little Kanawha River near Wildcat	03151400	112	sK, t, s	1979-1981
Little Kanawha River near Burnsville	03151500	155	t	1971-1974
Little Kanawha River at Glenville	03152000	387	t	1956-1963
Leading Creek:				
Leading Creek near Glenville	03152500	144	sK, t	1971-1974
West Fork Little Kanawha River at Rocksdale	03154000	205	t	1970-1974
Little Kanawha River at Parkersburg	03155600	---	t	1960-1961
KANAWHA RIVER BASIN				
Bluestone River near Spanishburg	03178000	199	t	1997-1998
New River at Bluestone Dam	03180000	4,602	t	1956-1967
				1971-1983
Knapp Creek at Marlinton	03182000	108	t	1956-1983
				1985-1987
Second Creek near Second Creek	03183000	80.8	t	1997-1998
Piney Creek at Raleigh	03185000	52.7	sK	1979-1981
			s	1981
New River at Thurmond	03185400	6,687	sK,pH,t,DO	1991-1993
			t	1997-1998
Williams River at Dyer	03186500	128	t	1997-1998
Cranberry River:				
Cranberry River near Richwood	03187500	80.4	sK	1979-1980
			pH	1989
			t	1982
				1997-1998
			s	1980-1981

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER-QUALITY STATIONS, LISTED IN DOWNSTREAM ORDER--Continued

	Station number	Drainage area (mi^2)	Type of record	Period of record
OHIO RIVER BASIN--Continued				
KANAWHA RIVER BASIN--Continued				
Gauley River:				
Gauley River near Craigsville	03189100	529	sK	1981-1982
			t	1975-1977
				1981-1982
Gauley River below Summersville Dam	03189600	806	sK	1981-1982
			t	1975-1977
				1981-1982
Peters Creek near Lockwood	03191500	40.2	sK,pH,t	1997-1998
Kanawha River at Kanawha Falls	03193000	8,371	t	1958-1966
				1968-1983
				1997-1998
Kanawha River at Glasgow	03193742	8,631	t	1977-1992
Kanawha River at Cabin Creek	03193770	8,661	t	1956
				1958-1977
Elk River below Webster Springs	03194700	266	t	1974-1983
			U	1974-1975
Right Fork Holly River at Guardian	03195100	51.9	t	1974
			U	1974-1975
Left Fork Holly River near Replete	03195250	46.5	t	1974
			U	1974-1975
Elk River at Sutton	03195500	542	sK	1985-1987
			t	1960-1983
				1985-1987
			s	1985-1987
			U	1974-1975
				1985-1987
Elk River near Frametown	03196600	751	t	1961-1967
				1972-1975
Elk River at Clay	03196800	992	t	1961-1970
Elk River at Queen Shoals	03197000	1,145	sK, s, U	1985-1986
			t	1961-1975
				1985-1986
Elk River at Blue Creek	03197680	1,336	sK,t,s,U	1985-1986
Kanawha River at Charleston	03198000	10,448	t	1953-1970
				1972-1985
Davis Creek:				
Trace Fork at Ruth	03198020	2.73	sK	1980-1983
			t, s	1980-1984
Trace Fork downstream Dryden Hollow at Ruth	03198022	4.72	sK	1980-1983
			t, s	1980-1984
Coal River:				
Clear Fork at Whitesville	03198350	62.8	sK,pH,t	1997-1998
Big Coal River near Alum Creek	03198550	445	sK, s	1975-1982
			t	1975-1980
Little Coal River at Danville	03199000	269	sK	1973-1983
			t, s	1973-1984
Rock Creek near Danville	03199300	12.2	sK, t	1979-1982
			s	1979-1981

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER-QUALITY STATIONS, LISTED IN DOWNSTREAM ORDER--Continued

	Station number	Drainage area (mi^2)	Type of record	Period of record
OHIO RIVER BASIN--Continued				
KANAWHA RIVER BASIN--Continued				
Rock Creek at Rock Creek	03199320	13.3	sK, t	1979-1982
			s	1979-1981
Little Coal River at Julian	03199400	318	sK, t	1975-1982
			*s	1975-1981
Coal River at Alum Creek	03199700	837	sK, t	1975-1981
			s	1975-1980
Coal River at Tornado	03200500	862	sK	1973-1983
			t	1974-1984
			s	1973-1984
			U	1981-1991
Kanawha River at Poca	03200650	11,435	t	1976-1992
Kanawha River at Winfield	03201300	11,809	sK	1965-1970
				1974-1980
			pH, DO	1976-1980
			t	1957-1967
				1969-1971
				1974-1980
				1997-1998
GUYANDOTTE RIVER BASIN				
Guyandotte River:				
Allen Creek at Allen Junction	03202240	8.43	sK,t,s,U	1978-1980
			pH	1978-1979
Slab Fork:				
Marsh Fork at Maben	03202245	4.85	sK,t,s,U	1978-1980
			pH	1978-1979
Still Run at Itmann	03202255	7.12	sK,t,s,U	1978-1980
			pH	1978-1979
Rockcastle Creek:				
Bearhole Fork at Pineville	03202310	6.27	sK,t,s,U	1978-1980
			pH	1978-1979
Guyandotte River near Baileysville	03202400	306	sK	1971-1979
			t	1971-1982
			s	1973-1979
Indian Creek at Fanrock	03202490	41.3	sK, s	1974-1978
			t	1975-1981
Clear Fork:				
Laurel Fork:				
Milam Fork at McGraws	03202695	6.64	sK, U	1978-1980
			pH, t	1978-1979
			s	1979-1980
Clear Fork at Clear Fork	03202750	126	sK, s	1974-1978
			t	1975-1981
Guyandotte River at Logan	03203600	833	sK, t	1976
			s	1975-1976
Island Creek:				
Island Creek at Logan	03203700	---	sK,pH,t,U	1976-1977
			s	1977

* Suspended-sediment discharge revised for water years 1975-81 in 1983 annual report.

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER-QUALITY STATIONS, LISTED IN DOWNSTREAM ORDER--Continued

	Station number	Drainage area (mi^2)	Type of record	Period of record
OHIO RIVER BASIN--Continued				
GUYANDOTTE RIVER BASIN--Continued				
Guyandotte River at Branchland	03204000	1,224	sK,t,s,U	1976-1977
Guyandotte River at Barboursville	03204200	1,309	sK, t, U	1976-1977
Mud River near Milton	03204500	256	sK, t	1976-1977
			s	1975-1977
Mud River at Barboursville	03205180	---	sK, t, U	1976-1977
Guyandotte River at Huntington	03205200	---	t	1960-1961
TWELVEPOLE CREEK BASIN				
East Fork Twelvepole Creek near Dunlow	03206600	38.5	sK, t	1974-1976
West Fork Twelvepole Creek above Wayne at Echo	03206980	108	sK	1979-1980
			t	1980
			s	1980-1981
BIG SANDY RIVER BASIN				
Tug Fork:				
Indian Creek:				
Puncheoncamp Branch at Leckie	03212558	1.36	s	1981
South Fork:				
Freeman Branch near Skygusty	03212567	0.30	s	1981
Sandlick Creek:				
Left Fork Sandlick Creek at Elbert	03212580	1.78	s	1981
Right Fork Sandlick Creek near Gary	03212585	1.21	s	1981
Tug Fork at Welch	03212600	85.9	sK	1979-1980
			t	1974-1976
			s	1979-1981
Elkhorn Creek at Maitland	03212700	69.9	sK	1979
			s	1979-1980
Elkhorn Creek Tributary at Welch	03212703	0.63	s	1981
Dry Fork at Avondale	03212985	225	sK, s	1979-1981
			t	1979
Tug Fork at Litwar	03213000	504	sK	1980
Panther Creek:				
Crane Creek near Panther	03213495	0.54	s	1981
Panther Creek near Panther	03213500	31.0	sK	1975
				1980-1981
			t	1973-1975
Pigeon Creek near Lenore	03213800	93.9	sK, t, s	1979-1981
Tug Fork near Kermit	03214000	1,188	t	1956
Tug Fork at Kermit	03214500	1,280	t	1947-1981
Rockcastle Creek at Inez, Ky	03214700	63.1	s	1980-1981
Tug Fork at Glenhayes	03214900	1,507	sK, s	1977-1980
			t	1979-1980

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State and Federal agencies, obtains a large amount of data pertaining to the water resources of West Virginia each water year. These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series titled "Water Resources Data - West Virginia."

This report includes records on both surface and ground water in the State. Specifically, it contains: Discharge records for 70 streamflow-gaging stations; discharge records provided by adjacent states for 8 streamflow-gaging stations; annual maximum discharge at 16 crest-stage partial-record stations; stage records for 6 detention reservoirs; water-quality records for 2 stations; and water-level records for 8 observation wells. Locations of streamflow, detention reservoir, and water-quality stations are shown on figure 4. Locations of ground-water observation wells are shown on figure 5. Additional water data were collected at various sites, not involved in the systematic data collection program, and are published as miscellaneous sites. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in West Virginia.

This series of annual reports for West Virginia began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report format was changed to present, in one volume, data on quantities of surface water, quality of surface and ground water, and ground-water levels.

Prior to introduction of this series and for several water years concurrent with it, water resources data for West Virginia were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface-Water Supply of the United States, Parts 6A and 6B." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from the U. S. Geological Survey, Books and Open-File Reports, Federal Center, Box 25425, Denver, Colorado 80225.

Publications similar to this report are published annually by the Geological Survey for all States. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report WV-03-1." For archiving and general distribution, the reports for 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161. Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone (304) 347-5130.

COOPERATION

The U.S. Geological Survey and agencies of the State of West Virginia have had joint-funding agreements for the collection of water-resource records since 1930. Organizations that assisted in collection, compilation, and publication of the data in this report through joint-funding agreement with the Survey are:

West Virginia Department of Military Affairs and Public Safety, Joe Martin, Secretary through
West Virginia Office of Emergency Services, Stephen Kappa, Director.

West Virginia Department of Environmental Protection, Stephanie Timmermeyer, Secretary
Division of Water and Waste Management, Allyn G. Turner, Chief.
Division of Mining and Reclamation, Franklin J. Parker, Acting Director.

West Virginia Department of Transportation, Fred VanKirk, Secretary.

West Virginia Conservation Agency, Truman Wolfe, Director.

COOPERATION--Continued

West Virginia Division of Natural Resources, J. Edward Hamrick, Director.

City of Hurricane, West Virginia, Raymond Peak, Mayor.

Assistance with funds or services was given by the U.S. Army Corps of Engineers, National Park Service, Office of Surface Mining and Reclamation, and U.S. Environmental Protection Agency.

Assistance was also furnished by the National Weather Service of the U.S. Department of Commerce.

Organizations that provided data are acknowledged in station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

Surface Water

Streamflow was generally greater than the long-term average throughout the year. Mean, maximum, and minimum streamflow for the 2003 water year from selected stations are shown in table 1. Streams monitored throughout West Virginia flowed between 106 and 225 percent of average for the year. The greatest departures from average flow conditions were gaged in streams of the Potomac River Basin, which flowed about twice normal. Flow of streams in the Monongahela, Wheeling Creek, and Little Kanawha Basins was generally only 1.3 times the long-term average. Flow of the Greenbrier River at Alderson, which has been operated continuously since July 1895 on an unregulated river system, flowed at 1.8 times its long-term average. Monthly and annual mean discharges for the 2003 water year as compared to the median of mean monthly and yearly discharges for water years 1931-2000 for four streamflow stations in West Virginia are shown in figures 1 and 2.

Precipitation was above normal October to December and below normal in January, but no streams reached flood stage as designated by the National Weather Service. Flooding occurred during February throughout most of the State, with highest frequency of recurrence of 10 years at Little Kanawha River at Palestine, Bluestone River at Pipestem, and at Tug Fork at Williamson (table 1). Much of the February precipitation was in the form of snow and sleet that came in storms on the 7th and 8th, 15th and 16th, and the 21st-24th, and melting of the snow pack contributed to the flooding from each of these storms. The Kanawha River at Charleston crested at 36.02 ft on February 23, which was the highest the river had been in over 30 years. Precipitation was below normal in March and above normal in April with some minor flooding. May precipitation was above normal, and a storm system on the 10th-12th resulted in flooding to the 10-year recurrence interval on the Tygart Valley River at Dailey and on Sand Run near Buckhannon. Numerous flash floods were caused by thunderstorms in June, and a flood of 50-100 year recurrence occurred on the 38.5 mi^2 drainage at East Fork Twelvepole Creek near Dunlow. July and August were also characterized by thunderstorms and localized flooding, but no flood peaks were monitored that had greater than a 5-year recurrence interval. On September 19-20, Hurricane Isabel caused significant flooding mainly in the Potomac River Basin and at some stations across the mountains into the Monongahela River Basin. Flood peaks up to the 10-25 year recurrence interval occurred on the South Branch Potomac River and on the Dry Fork at Hendricks, and at the 10-year interval on the Cacapon River at Great Cacapon, Cheat River near Parsons, and the Blackwater River at Davis.

Ground-Water Levels

Ground-water-level information was only available from a network of eight wells located in Brooke, Grant, Jefferson, Mingo, Pocahontas, Wayne, Webster, and Wyoming Counties. This sparse network includes no wells in the north-central part of the State. In the northern portion of West Virginia, ground-water levels were below normal for the period from October 2002 through April 2003. In the period May through August of 2003, ground-water levels rose to near normal levels and actually rose to above normal levels in the month of September 2003. In the eastern portion of the State, water levels began to rebound from a multi-year drought in the month of October 2002 and then rose to levels well above normal and remained so for the period from November 2002 through September 2003. The high ground-water levels were welcomed by residents of the Eastern Panhandle who had suffered through one of the more severe droughts in recent history. In the southern portion of the State, ground-water levels appeared to be at above normal levels in the months of

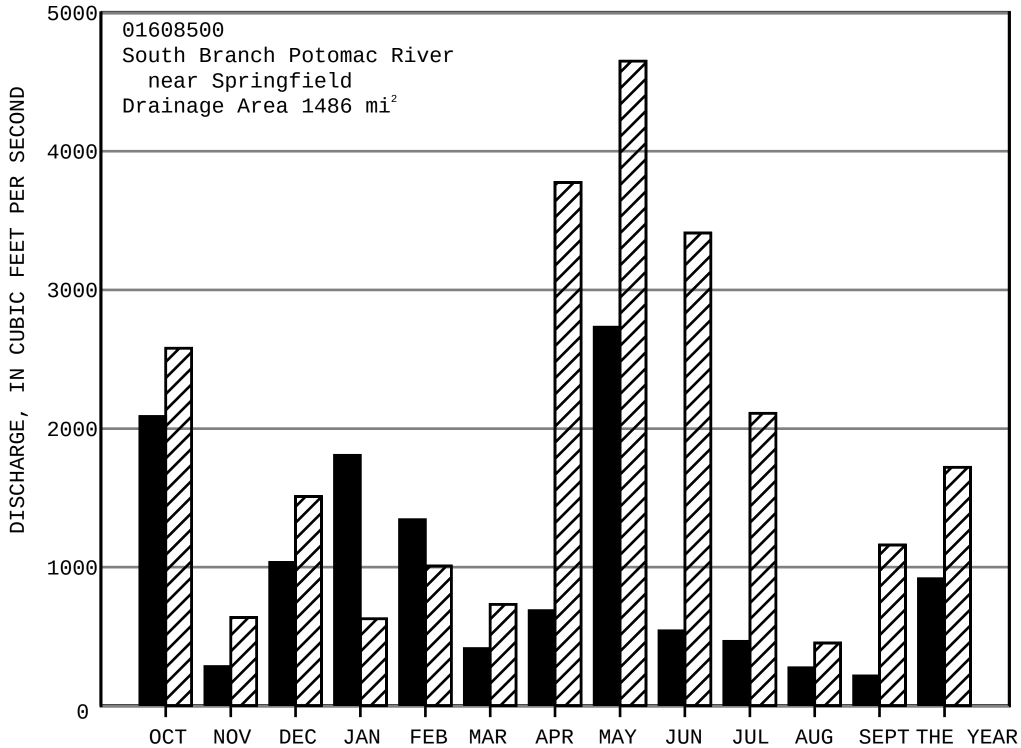
Ground-Water Levels--Continued

October through December of 2002 and again in the period from June through September of 2003. During the remainder of the year, especially during the Summer of 2003, ground-water levels were near normal. In the western portion of the State, ground-water levels were near normal for the period from October 2002 through January 2003, but rose significantly to above normal levels for the remainder of the year (February through September of 2003). In the central portion of the State, there were no general trends in either increasing or decreasing water levels that could easily be ascertained. Generally, however, ground-water levels were near normal to above normal for much of the year, except for the months of January, February, and April of 2003, when they were below normal.

Quality of Water

Surface water: Waites Run near Wardensville was sampled in connection with a study of water quality of the Potomac River Basin.

Ground water: In 1991, in fulfillment of Chapter 20 of the West Virginia Code, Article 5-M, commonly known as the "Groundwater Protection Act," a program was begun to monitor ambient ground-water quality of the State's major aquifers. The act mandated ground-water sampling, analyses, and evaluation with sufficient frequency as to ascertain the characteristics and quality of waters in the State's major aquifers. Each year, 30 wells are sampled in cooperation with the West Virginia Department of Environmental Protection, Division of Water Resources. At the completion of a 5-year cycle, ground-water samples will have been obtained from all major surface-water drainage basins in West Virginia. During 2003, ambient ground water was sampled in the following basins: North Branch Potomac, Tygart Valley, Elk, Coal, and Lower Kanawha.



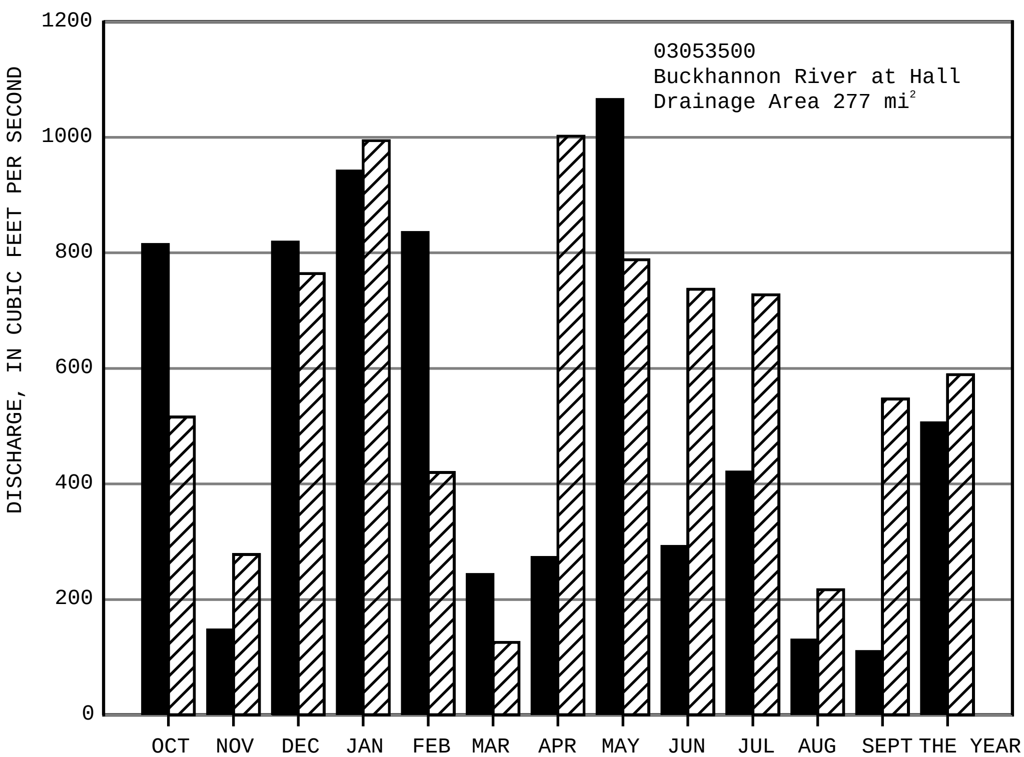
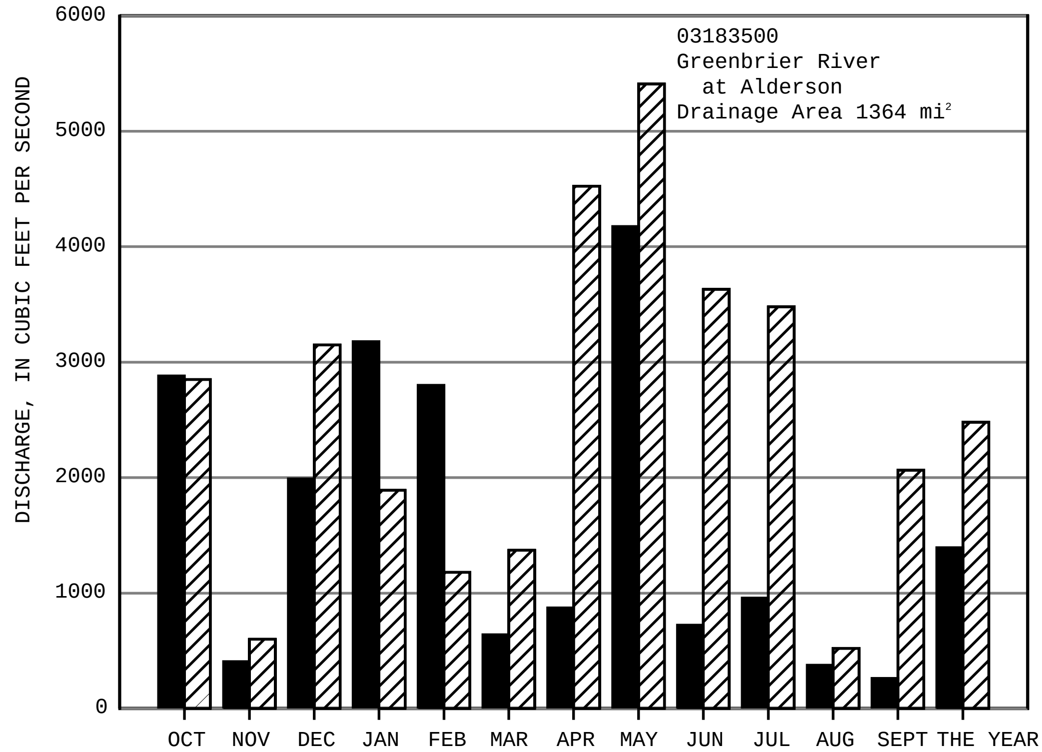


Figure 1. Discharge at the South Branch Potomac River and the Buckhannon River index gaging stations during the 2003 water year compared to median discharge for the period 1931-2000.



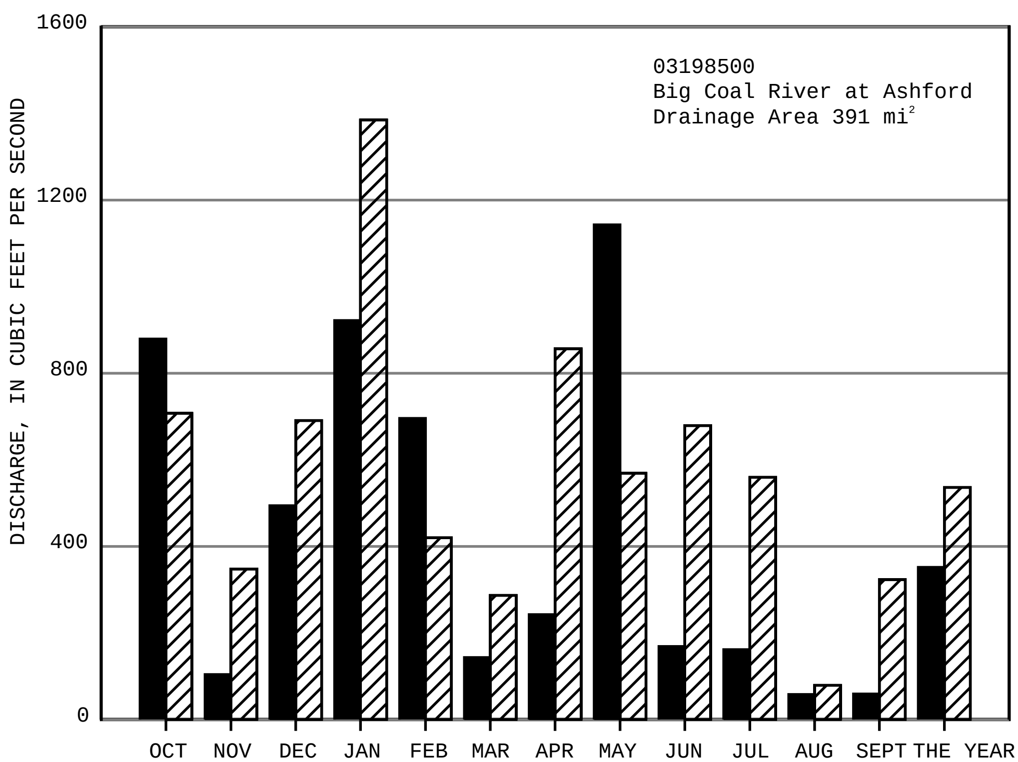


Figure 2. Discharge at the Greenbrier River and the Big Coal River index gaging stations during the 2003 water year compared to median discharge for the period 1931-2000.

Table 1. Mean, maximum, and minimum streamflow for water year 2003 at selected stations in West Virginia.
[ft^3/s: cubic feet per second; $7Q_{10}$: 7-day minimum mean streamflow for 10-year recurrence interval; R: regulated period only; ---: unknown.]

Station Number	Station Name	Drainage Area (mi^2)	Years of Discharge Record	MEAN: Daily Streamflow (ft^3/s)	MEAN: Percent of Average	MAXIMUM: Peak Streamflow (ft^3/s)	MAXIMUM: Date	MAXIMUM: Recurrence Interval (Years) (a)	MINIMUM: 7-Day Mean Streamflow (ft^3/s)	MINIMUM: Percent of $7Q_{10}$ Streamflow (b)
	POTOMAC RIVER BASIN									
01595200	Stony River nr Mt. Storm	48.7	42	148	151	4,980	Sep 19	---	7.4	---
01604500	Patterson Cr nr Headsville	211	66	341	197	5,510	Sep 19	<2	14	484
01605500	SB Pot River at Franklin	179	56	344	195	16,500	Sep 19	10-25	35	191
01606000	NFSB Pot River at Cabins	335	29	814	204	15,300	Sep 19	5-10	39	535
01606500	SB Pot River nr Petersburg	676	75	1,523	204	37,700	Sep 19	10-25	110	211
01607500	SFSB Pot R at Brandywine	103	60	215	207	6,430	Sep 19	5	13	560
01608000	SFSB Pot R nr Moorefield	277	72	526	225	15,000	Sep 19	5-10	33	390
01608500	SB Pot R near Springfield	1,486	79	2,731	202	67,500	Sep 20	10-25	203	---
01611500	Cacapon R nr Great Cacapon	675	80	1,192	202	33,800	Sep 20	10	83	390
01616500	Opequon Cr nr Martinsburg	273	56	491	201	6,370	Jun 22	2-5	67	1,800
01636500	Shenandoah R nr Millville	3,022	88	5,548	201	66,100	Sep 20	5-10	548	---
	MONONGAHELA RIVER BASIN									
03050000	Tygart Valley R nr Dailey	185	15	562	157	11,700	May 11	10	35	2,190
03050500	Tygart Valley R nr Elkins	271	59	747	143	8,470	Feb 23	2-5	44	2,600
03051000	Tygart Valley R at Belington	406	96	1,168	142	12,900	Feb 23	5	63	1,310
03052000	Middle Fork R at Audra	148	52	486	138	6,300	Sep 2	2-5	24	2,670
03052500	Sand Run near Buckhannon	14.3	57	33.3	121	1,430	May 9	5-10	0.40	50
03053500	Buckhannon R at Hall	277	88	793	132	9,430	Feb 23	5	37	1,230
03054500	Tygart Valley R at Philippi	914	63	2,741	144	31,300	Feb 23	5	136	---
03056250	Three Fork Cr near Grafton	96.8	19	232	130	5,120	Feb 23	2-5	5.3	---
03058975	West Fork R nr Mount Clare	368	16	751	R131	10,300	Feb 23	---	91	---
03061000	West Fork R at Enterprise	759	70	1,443	R122	24,500	Feb 23	---	114	---
03061500	Buffalo Cr at Barrackville	116	80	178	106	4,220	Feb 23	<2	6.7	846
03062500	Deckers Cr at Morgantown	63.2	24	184	179	4,140	Jul 8	5	1.1	94
03065000	Dry Fork at Hendricks	349	61	1,151	147	27,900	Sep 19	10-25	89	774

Table 1. Mean, maximum, and minimum streamflow for water year 2003 at selected stations in West Virginia. --Continued

[ft^3/s: cubic feet per second; $7Q_{10}$: 7-day minimum mean streamflow for 10-year recurrence interval; R: regulated period only; ---: unknown.]

				MEAN		MAXIMUM			MINIMUM	
Station Number	Station Name	Drainage Area (mi^2)	Years of Discharge Record	Daily Streamflow (ft^3/s)	Percent of Average	Peak Streamflow (ft^3/s)	Date	Recurrence Interval (Years) (a)	7-Day Mean Streamflow (ft^3/s)	Percent of $7Q_{10}$ Streamflow (b)
	MONONGAHELA RIVER BASIN--Continued									
03066000	Blackwater River at Davis	85.9	82	333	164	4,590	Sep 19	10	34	681
03068800	Shavers Fork below Bowden	151	14	637	144	13,100	May 10	---	79	311
03069500	Cheat River near Parsons	722	90	2,586	150	40,800	Sep 19	5-10	271	---
03070500	Big Sandy Creek at Rockville	200	90	606	145	9,480	Jul 9	2-5	12	---
	WHEELING CREEK BASIN									
03112000	Wheeling Creek at Elm Grove	281	63	435	129	5,720	Feb 23	<2	7.6	1,180
	LITTLE KANAWHA RIVER BASIN									
03151400	Little Kanawha R nr Wildcat	112	28	300	132	5,860	Aug 17	2-5	10	370
03155000	Little Kanawha R at Palestine	1,516	64	2,945	R133	42,500	Feb 23	10	77	---
	KANAWHA RIVER BASIN									
03179000	Bluestone R near Pipestem	395	53	773	164	14,100	Feb 22	10	40	301
03180500	Greenbrier R at Durbin	133	60	457	172	6,080	May 11	2-5	56	2,410
03182500	Greenbrier R at Buckeye	540	74	1,573	177	18,500	Feb 22	2	102	734
03183500	Greenbrier R at Alderson	1,364	108	3,606	180	46,100	Feb 23	5	188	---
03184000	Greenbrier R at Hilldale	1,619	67	4,360	191	53,400	Feb 23	5-10	217	---
03184500	New River at Hinton	6,256	67	13,150	R167	65,500	Feb 23	---	1,480	---
03185400	New River at Thurmond	6,687	22	14,600	R167	96,600	Feb 23	---	1,550	---
03186500	Williams R at Dyer	128	74	483	144	9,310	May10	2-5	35	1,530
03187500	Cranberry R near Richwood	80.4	44	309	133	4,120	Sep 4	<2	19	664
03189100	Gauley R near Craigsville	529	18	1,784	125	19,900	Sep 4	5	134	---
03189600	Gauley R bl Summersville Dam	806	33	2,630	R130	15,800	Jun 4	---	210	---
03190400	Meadow River nr Mt. Lookout	365	35	1,055	144	9,370	Feb 23	2-5	40	237

Table 1. Mean, maximum, and minimum streamflow for water year 2003 at selected stations in West Virginia. --Continued

[ft^3/s: cubic feet per second; $7Q_{10}$: 7-day minimum mean streamflow for 10-year recurrence interval; R: regulated period only; ---: unknown.]

				MEAN		MAXIMUM			MINIMUM	
Station Number	Station Name	Drainage Area (mi^2)	Years of Discharge Record	Daily Streamflow (ft^3/s)	Percent of Average	Peak Streamflow (ft^3/s)	Date	Recurrence Interval (Years) (a)	7-Day Mean Streamflow (ft^3/s)	Percent of $7Q_{10}$ Streamflow (b)
	KANAWHA RIVER BASIN--Continued									
03192000	Gauley River above Belva	1,317	75	4,048	R141	26,500	Feb 22	---	447	---
03193000	Kanawha River at Kanawha Falls	8,371	126	19,960	R165	123,000	Feb 23	---	2,550	---
03194700	Elk River below Webster Springs	266	43	922	133	12,600	May 10	2-5	91	664
03197000	Elk River at Queen Shoals	1,145	75	2,867	R134	35,400	Feb 17	---	362	---
03198000	Kanawha R at Charleston	10,448	64	22,420	R148	144,000	Feb 23	---	3,350	---
03198350	Clear Fork at Whitesville	62.8	7	132	164	2,590	Feb 22	---	6.9	---
03198500	Big Coal River at Ashford	391	81	787	150	14,900	Feb 16	2-5	47	994
03200500	Coal River at Tornado	862	45	1,795	149	26,300	Feb 23	2-5	115	865
	GUYANDOTTE RIVER BASIN									
03202400	Guyandotte R near Baileysville	306	35	692	164	17,600	Feb 22	5-10	58	175
03202750	Clear Fork at Clear Fork	126	29	279	145	6,310	Feb 22	5	9.1	128
03203600	Guyandotte R at Logan	833	41	1,712	R155	19,600	Feb 16	---	229	---
	TWELVEPOLE CREEK BASIN									
03206600	East Fork Twelvepole Cr nr Dunlow	38.5	39	81.1	157	4,770	Jun 17	50-100	2.2	8,460
	BIG SANDY RIVER BASIN									
03212750	Tug Fork at Welch	174	15	312	158	5,060	Feb 22	2-5	42	---
03212980	Dry Fork at Beartown	209	15	332	150	9,700	Feb 16	5-10	23	---
03213700	Tug Fork at Williamson	936	36	1,657	148	36,900	Feb 16	10	137	---
03214500	Tug Fork at Kermit	1,280	18	2,167	150	35,300	Feb 17	2-5	158	---

a Based on U.S. Geological Survey Water-Resources Investigations Report 00-4080.
b Based on U.S. Geological Survey Water-Resources Investigations Report 88-4072.
e Estimated.

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, hydrologic-station records in USGS reports have been listed in order of downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary entering between two main-stream stations is listed between those stations. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is located with respect to the stream to which it is immediately tributary is indicated by an indention in that list of stations in the front of this report. Each indentation represents one rank. This downstream order and system of indentation indicates which stations are on tributaries between any two stations and the rank of the tributary on which each station is located.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These station numbers are in the same downstream order used in this report. In assigning a station number, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list composed of both types of stations. Gaps are consecutive. The complete 8-digit (or 10-digit) number for each station such as 03198000, which appears just to the left of the station name, includes a 2-digit part number “03” plus the 6-digit (or 8-digit) downstream order number “198000.” In areas of high station density, an additional two digits may be added to the station identification number to yield a 10-digit number. The stations are numbered in downstream order as described above between stations of consecutive 8-digit numbers.

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The USGS well and miscellaneous site-numbering system is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, and the next 7 digits denote degrees, minutes, and seconds of longitude; the last 2 digits are a sequential number for wells within a 1-second grid. In the event that the latitude-longitude coordinates for a well and miscellaneous site are the same, a sequential number such as “01,” “02,” and so forth, would be assigned as one would for wells (see fig. 3). The 8-digit, downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description.

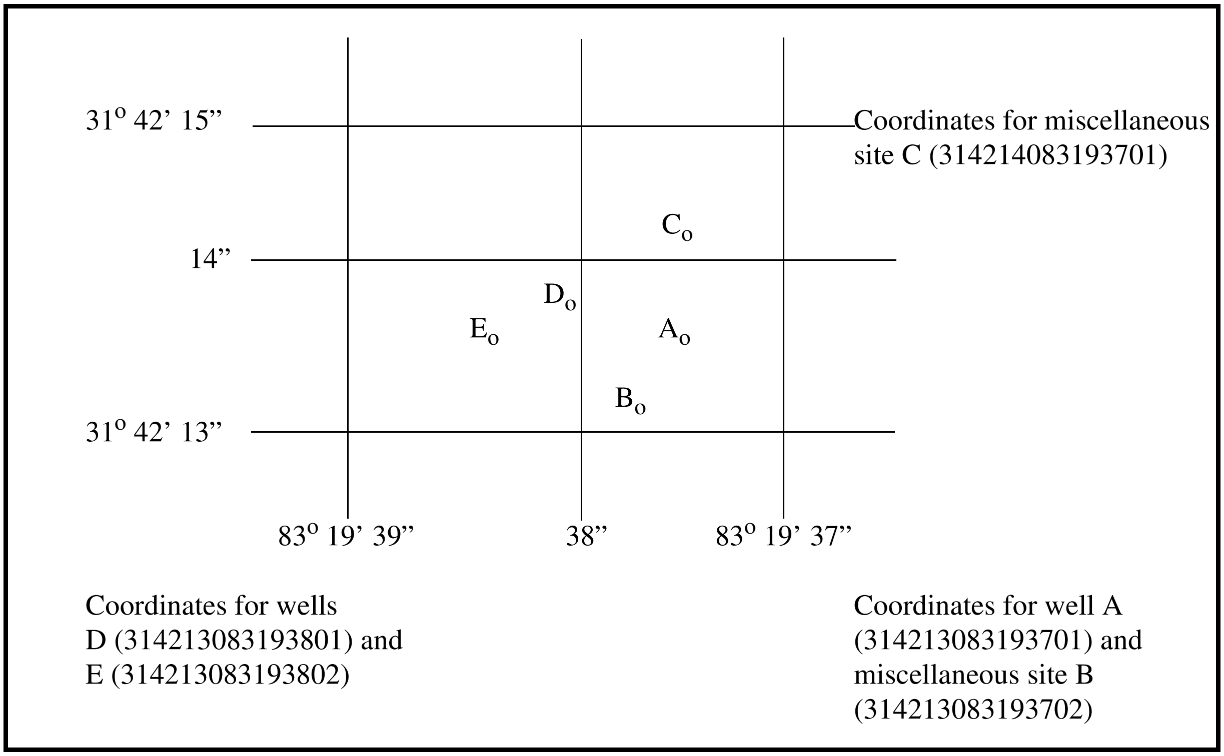


Figure 3. System for numbering wells and miscellaneous sites (latitude and longitude).

Well records furnished by the State of West Virginia also include the well number that is based on an indexing system used by the State Water Resources Board.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 61 sites in small drainage basins in 39 States that was established in 1963 to provide consistent streamflow data representative of undeveloped watersheds nationwide, and from which data could be analyzed on a continuing basis for use in comparison and contrast with conditions observed in basins more obviously affected by human activities. At selected sites, water-quality information is being gathered on major ions and nutrients, primarily to assess the effects of acid deposition on stream chemistry. Additional information on the Hydrologic Benchmark Program may be accessed from *http://water.usgs.gov/hbn/*.

National Stream-Quality Accounting Network (NASQAN) is a network of sites used to monitor the water quality of large rivers within the Nation's largest river basins. From 1995 through 1999, a network of approximately 40 stations was operated in the Mississippi, Columbia, Colorado, and Rio Grande River basins. For the period 2000 through 2004, sampling was reduced to a few index stations on the Colorado and Columbia Rivers so that a network of 5 stations could be implemented on the Yukon River. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment (NAWQA) Program; (3) to characterize processes unique to large-river systems such as storage and remobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals. Additional information about the NASQAN Program may be accessed from *http://water.usgs.gov/nasqan/*.

The National Atmospheric Deposition Program/National Trends Network (NADP/NTN) is a network of monitoring sites that provide continuous measurement and assessment of the chemical constituents in precipitation throughout the United States. As the lead Federal agency, the USGS works together with over 100 organizations to provide a long-term, spatial and temporal record of atmospheric deposition generated from this network of 250 precipitation-chemistry monitoring sites. The USGS supports 74 of these 250 sites. This long-term, nationally consistent monitoring program, coupled with ecosystem research, provides critical information toward a national scorecard to evaluate the effectiveness of ongoing and future regulations intended to reduce atmospheric emissions and subsequent impacts to the Nation's land and water resources. Reports and other information on the NADP/NTN Program, as well as data from the individual sites, may be accessed from *http://bqs.usgs.gov/acidrain/*.

The USGS National Water-Quality Assessment (NAWQA) Program is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation's ground- and surface-water resources; to provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and to provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 42 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents is measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for water-resources managers to use in making decisions and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and Federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key Federal, State, and local water-resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies. Additional information about the NAWQA Program may be accessed from *http://water.usgs.gov/nawqa/*.

The USGS National Streamflow Information Program (NSIP) is a long-term program with goals to provide framework streamflow data across the Nation. Included in the program are creation of a permanent Federally funded streamflow network, research on the nature of streamflow, regional assessments of streamflow data and databases, and upgrades in the streamflow information delivery systems. Additional information about NSIP may be accessed from *http://water.usgs.gov/nsip/*.

EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS

Data Collection and Computation

The base data collected at gaging stations (fig. 4) consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and volume of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from a water-stage recorder that is either downloaded electronically in the field to a laptop computer or similar device or is transmitted using telemetry such as GOES satellite, land-line or cellular-phone modems, or by radio transmission. Measurements of discharge are made with a current meter or acoustic Doppler current profiler, using the general methods adopted by the USGS. These methods are described in standard textbooks, USGS Water-Supply Paper 2175, and the Techniques of Water-Resources Investigations of the United States Geological Survey (TWRIs), Book 3, Chapters A1 through A19 and Book 8, Chapters A2 and B2. The methods are consistent with the American Society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standards (ISO).

For stream-gaging stations, discharge-rating tables for any stage are prepared from stage-discharge curves. If extensions to the rating curves are necessary to express discharge greater than measured, the extensions are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, or computation of flow over dams and weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharges are computed from the daily values. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features of the stream channel, the daily mean discharge is computed by the shifting-control method in which correction factors based on individual discharge measurements and notes by engineers and observers are used when applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the controlling section, the daily mean discharge is computed by the shifting-control method.

The stage-discharge relation at some stream-gaging stations is affected by backwater from reservoirs, tributary streams, or other sources. Such an occurrence necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage at some distance from the base gage.

An index velocity is measured using ultrasonic or acoustic instruments at some stream-gaging stations and this index velocity is used to calculate an average velocity for the flow in the stream. This average velocity along with a stage-area relation is then used to calculate average discharge.

At some stations, stage-discharge relation is affected by changing stage. At these stations, the rate of change in stage is used as a factor in computing discharge.

At some stream-gaging stations in the northern United States, the stage-discharge relation is affected by ice in the winter; therefore, computation of the discharge in the usual manner is impossible. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter-discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge from other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the volume or contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly changes are computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys, the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some stream-gaging stations, periods of time occur when no gage-height record is obtained or the recorded gage height is faulty and cannot be used to compute daily discharge or contents. Such a situation can happen when the recorder stops or otherwise fails to operate properly, the intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records from other stations in the same or nearby basins. Likewise, lake or reservoir volumes may be estimated on the basis of operator’s log, prior and subsequent records, inflow-outflow studies, and other information.

Data Presentation

The records published for each continuous-record surface-water discharge station (stream-gaging station) consist of five parts: (1) the station manuscript or description; (2) the data table of daily mean values of discharge for the current water year with summary data; (3) a tabular statistical summary of monthly mean flow data for a designated period, by water year; (4) a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration; and (5) a hydrograph of discharge.

Station Manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments follow that clarify information presented under the various headings of the station description.

LOCATION.—Location information is obtained from the most accurate maps available. The location of the gaging station with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages, given for only a few stations, were determined by methods given in “River Mileage Measurement,” Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

DRAINAGE AREA.—Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

PERIOD OF RECORD.—This term indicates the time period for which records have been published for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not and whose location was such that its flow reasonably can be considered equivalent to flow at the present station.

REVISED RECORDS.—If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

GAGE.—The type of gage in current use, the datum of the current gage referred to a standard datum, and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.—All periods of estimated daily discharge either will be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily discharge table. (See section titled Identifying Estimated Daily Discharge.) Information is presented relative to the accuracy of the records, to special methods of computation, and to conditions that affect natural flow at the station. In addition, information may be presented pertaining to average discharge data for the period of record; to extremes data for the period of record and the current year; and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, the outlet works and spillway, and the purpose and use of the reservoir.

COOPERATION.—Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

EXTREMES OUTSIDE PERIOD OF RECORD.—Information here documents major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the USGS.

REVISIONS.—Records are revised if errors in published records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based National data system, NWISWeb (*http://water.usgs.gov/nwis/nwis*). Users are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent data updates. Updates to NWISWeb are made on an annual basis.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because no current or, possibly, future station manuscript would be published for these stations to document the revision in a REVISED RECORDS entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District Office (address given on the back of the title page of this report) to determine if the published records were revised after the station was discontinued. If, however, the data for a discontinued station were obtained by computer retrieval, the data would be current. Any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the REMARKS and in the inclusion of a stage-capacity table when daily volumes are given.

Peak Discharge Greater than Base Discharge

Tables of peak discharge above base discharge are included for some stations where secondary instantaneous peak discharge data are used in flood-frequency studies of highway and bridge design, flood-control structures, and other flood-related projects. The base discharge value is selected so an average of three peaks a year will be reported. This base discharge value has a recurrence interval of approximately 1.1 years or a 91-percent chance of exceedence in any 1 year.

Data Table of Daily Mean Values

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed TOTAL gives the sum of the daily figures for each month; the line headed MEAN gives the arithmetic average flow in cubic feet per second for the month; and the lines headed MAX and MIN give the maximum and minimum daily mean discharges, respectively, for each month. Discharge for the month is expressed in cubic feet per second per square mile (line headed CFSM); or in inches (line headed IN); or in acre-feet (line headed AC-FT). Values for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if extensive regulation or diversion is in effect or if the drainage area includes large noncontributing areas. At some stations, monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversion data or reservoir volumes are given. These values are identified by a symbol and a corresponding footnote.

Statistics of Monthly Mean Data

A tabular summary of the mean (line headed MEAN), maximum (MAX), and minimum (MIN) of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those values. The designated period will be expressed as FOR WATER YEARS __-__, BY WATER YEAR (WY), and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. The designated period will consist of all of the station record within the specified water years, including complete months of record for partial water years, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript.

Summary Statistics

A table titled SUMMARY STATISTICS follows the statistics of monthly mean data tabulation. This table consists of four columns with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, WATER YEARS __-__, will consist of all of the station records within the specified water years, including complete months of record for partial water years, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (see line headings below), except for the ANNUAL 7-DAY MINIMUM statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When the dates of occurrence do not fall within the selected water years listed in the heading, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration-curve statistics and runoff data also are given. Runoff data may be omitted if extensive regulation or diversion of flow is in effect in the drainage basin.

The following summary statistics data are provided with each continuous record of discharge. Comments that follow clarify information presented under the various line headings of the SUMMARY STATISTICS table.

ANNUAL TOTAL.—The sum of the daily mean values of discharge for the year.

ANNUAL MEAN.—The arithmetic mean for the individual daily mean discharges for the year noted or for the designated period.

HIGHEST ANNUAL MEAN.—The maximum annual mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.—The minimum annual mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.—The maximum daily mean discharge for the year or for the designated period.

LOWEST DAILY MEAN.—The minimum daily mean discharge for the year or for the designated period.

ANNUAL 7-DAY MINIMUM.—The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. This value should not be confused with the 7-day 10-year low-flow statistic.

MAXIMUM PEAK FLOW.—The maximum instantaneous peak discharge occurring for the water year or designated period. Occasionally the maximum flow for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak flow is given in the table and the maximum flow may be reported in a footnote or in the REMARKS paragraph in the manuscript. Note that secondary instantaneous peak discharges above a selected base discharge are stored in District computer files for stations meeting certain criteria. Those discharge values may be obtained by writing to the District Office. (See address on back of title page of this report.)

MAXIMUM PEAK STAGE.—The maximum instantaneous peak stage occurring for the water year or designated period. Occasionally the maximum stage for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak stage is given in the table and the maximum stage may be reported in the REMARKS paragraph in the manuscript or in a footnote. If the dates of occurrence of the maximum peak stage and maximum peak flow are different, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

INSTANTANEOUS LOW FLOW.—The minimum instantaneous discharge occurring for the water year or for the designated period.

ANNUAL RUNOFF.—Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

> Acre-foot (AC-FT) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Cubic feet per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area.

Inches (INCHES) indicate the depth to which the drainage area would be covered if all of the runoff for a given time period were uniformly distributed on it.

10 PERCENT EXCEEDS.—The discharge that has been exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.—The discharge that has been exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.—The discharge that has been exceeded 90 percent of the time for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first table lists annual maximum stage and discharge at crest-stage stations, and the second table lists discharge measurements at low-flow partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are often made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for a special reason are called measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified. This identification is shown either by flagging individual daily values with the letter “e” and noting in a table footnote, “e–Estimated,” or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

Accuracy of Field Data and Computed Results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The degree of accuracy of the records is stated in the REMARKS in the station description. “Excellent” indicates that about 95 percent of the daily discharges are within 5 percent of the true value; “good” within 10 percent; and “fair,” within 15 percent. “Poor” indicates that daily discharges have less than “fair” accuracy. Different accuracies may be attributed to different parts of a given record.

Values of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft^3/s; to the nearest tenths between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures above 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharge values listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, values of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other Data Records Available

Information of a more detailed nature than that published for most of the stream-gaging stations such as discharge measurements, gage-height records, and rating tables is available from the District office. Also, most stream-gaging station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the District office (see address that is shown on the back of the title page of this report).

EXPLANATION OF WATER-QUALITY RECORDS

Collection and Examination of Data

Surface-water samples for analysis usually are collected at or near stream-gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, water temperature, sediment discharge, and so forth); extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, sampling date, or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water Analysis

Most of the methods used for collecting and analyzing water samples are described in the TWRIs. A list of TWRIs is provided in this report.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross-section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled at several verticals to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum and minimum values (and sometimes mean or median values) for each constituent measured, and are based on 15-minute or 1-hour intervals of recorded data beginning at 0000 hours and ending at 2400 hours for the day of record.

SURFACE-WATER-QUALITY RECORDS

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because discharge data is useful in the interpretation of surface-water quality. Records of surface-water quality in this report involve a variety of types of data and measurement frequencies.

Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A *continuous-record station* is a site where data are collected on a regularly scheduled basis. Frequency may be one or more times daily, weekly, monthly, or quarterly. A *partial-record station* is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A *miscellaneous sampling site* is a location other than a continuous- or partial-record station, where samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between *continuous records* as used in this report and *continuous recordings* that refer to a continuous graph or a series of discrete values recorded at short intervals. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 4.

Accuracy of the Records

One of four accuracy classifications is applied for measured physical properties at continuous-record stations on a scale ranging from poor to excellent. The accuracy rating is based on data values recorded before any shifts or corrections are made. Additional consideration also is given to the amount of publishable record and to the amount of data that have been corrected or shifted.

Rating classifications for continuous water-quality records

[≤, less than or equal to; ±, plus or minus value shown; °C, degree Celsius; >, greater than; %, percent; mg/L, milligram per liter; pH unit, standard pH unit]

Measured physical property	Rating			
	Excellent	Good	Fair	Poor
Water temperature	≤ ±0.2 °C	> ±0.2 to 0.5 °C	> ±0.5 to 0.8 °C	> ±0.8 °C
Specific conductance	≤ ±3%	> ±3 to 10%	> ±10 to 15%	> ±15%
Dissolved oxygen	≤ ±0.3 mg/L	> ±0.3 to 0.5 mg/L	> ±0.5 to 0.8 mg/L	> ±0.8 mg/L

Rating classifications for continuous water-quality records

[≤, less than or equal to; ±, plus or minus value shown; °C, degree Celsius; >, greater than; %, percent; mg/L, milligram per liter; pH unit, standard pH unit]

Measured physical property	Rating			
	Excellent	**Good**	**Fair**	**Poor**
pH	≤ ±0.2 unit	> ±0.2 to 0.5 unit	> ±0.5 to 0.8 unit	> ±0.8 unit
Turbidity	≤ ±5%	> ±5 to 10%	> ±10 to 15%	> ±15%

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

On-Site Measurements and Sample Collection

In obtaining water-quality data, a major concern is assuring that the data obtained represent the naturally occurring quality of the water. To ensure this, certain measurements, such as water temperature, pH, and dissolved oxygen, must be made on site when the samples are taken. To assure that measurements made in the laboratory also represent the naturally occurring water, carefully prescribed procedures must be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRIs Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1-A9. These TWRIs are listed in this report. Also, detailed information on collecting, treating, and shipping samples can be obtained from the USGS District office (see address that is shown on the back of title page in this report).

Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at the time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the District office.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross section.

During periods of rapidly changing flow or rapidly changing concentration, samples may be collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples are collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observation, such data are useful in establishing seasonal relations between quality and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of suspended-sediment discharge, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

Laboratory Measurements

Samples for biochemical oxygen demand (BOD) and indicator bacteria are analyzed locally. All other samples are analyzed in the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chapter C1. Methods used by the USGS laboratories are given in the TWRIs, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. These methods are consistent with ASTM standards and generally follow ISO standards.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of “daily values” of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.—See Data Presentation information in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

DRAINAGE AREA.—See Data Presentation information in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

PERIOD OF RECORD.—This indicates the time periods for which published water-quality records for the station are available. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.—Information on instrumentation is given only if a water-quality monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.—Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.—Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

EXTREMES.—Maximums and minimums are given only for parameters measured daily or more frequently. For parameters measured weekly or less frequently, true maximums or minimums may not have been obtained. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.—Records are revised if errors in published water-quality records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based National data system, NWISWeb (*http://waterdata.usgs.gov/nwis*). Users of USGS water-quality data are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent updates. Updates to the NWISWeb are made on an annual basis.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remark Codes

The following remark codes may appear with the water-quality data in this section:

Printed Output	Remark
E or e	Estimated value.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
M	Presence of material verified, but not quantified.
N	Presumptive evidence of presence of material.
U	Material specifically analyzed for, but not detected.
A	Value is an average.
V	Analyte was detected in both the environmental sample and the associated blanks.
S	Most probable value.

Water-Quality Control Data

The USGS National Water Quality Laboratory collects quality-control data on a continuing basis to evaluate selected analytical methods to determine long-term method detection levels (LT-MDLs) and laboratory reporting levels (LRLs). These values are re-evaluated each year on the basis of the most recent quality-control data and, consequently, may change from year to year.

This reporting procedure limits the occurrence of false positive error. Falsely reporting a concentration greater than the LT-MDL for a sample in which the analyte is not present is 1 percent or less. Application of the LRL limits the occurrence of false negative error. The chance of falsely reporting a non-detection for a sample in which the analyte is present at a concentration equal to or greater than the LRL is 1 percent or less.

Accordingly, concentrations are reported as less than LRL for samples in which the analyte was either not detected or did not pass identification. Analytes detected at concentrations between the LT-MDL and the LRL and that pass identification criteria are estimated. Estimated concentrations will be noted with a remark code of “E.” These data should be used with the understanding that their uncertainty is greater than that of data reported without the E remark code.

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this District office are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples. These data are not presented in this report but are available from the District office.

Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated in the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. Many types of blank samples are possible; each is designed to segregate a different part of the overall data-collection process. The types of blank samples collected in this District are:

Field blank—A blank solution that is subjected to all aspects of sample collection, field processing preservation, transportation, and laboratory handling as an environmental sample.

Trip blank—A blank solution that is put in the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.

Equipment blank—A blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to a field blank but normally done in the more controlled conditions of the office).

Sampler blank—A blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

Filter blank—A blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank—A blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank—A blank solution that is treated with the sampler preservatives used for an environmental sample.

Reference Samples

Reference material is a solution or material prepared by a laboratory. The reference material composition is certified for one or more properties so that it can be used to assess a measurement method. Samples of reference material are submitted for analysis to ensure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

Replicate Samples

Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. Many types of replicate samples are possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this District are:

Concurrent samples—A type of replicate sample in which the samples are collected simultaneously with two or more samplers or by using one sampler and alternating the collection of samples into two or more compositing containers.

Sequential samples—A type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample—A type of replicate sample in which a sample is split into subsamples, each subsample contemporaneous in time and space.

Spike Samples

Spike samples are samples to which known quantities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

EXPLANATION OF GROUND-WATER-LEVEL RECORDS

Generally, only ground-water-level data from selected wells with continuous recorders from a basic network of observation wells are published in this report. This basic network contains observation wells located so that the most significant data are obtained from the fewest wells in the most important aquifers.

Site Identification Numbers

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is produced for local needs. (See NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES in this report for a detailed explanation).

Data Collection and Computation

Measurements are made in many types of wells, under varying conditions of access and at different temperatures; hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Most methods for collecting and analyzing water samples are described in the TWRIs referred to in the On-site Measurements and Sample Collection and the Laboratory Measurements sections in this report. In addition, TWRI Book 1, Chapter D2, describes guidelines for the collection and field analysis of ground-water samples for selected unstable constituents. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRIs Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1 through A9. The values in this report represent water-quality conditions at the time of sampling, as much as possible, and that are consistent with available sampling techniques and methods of analysis. These methods are consistent with ASTM standards and generally follow ISO standards. Trained personnel collected all samples. The wells sampled were pumped long enough to ensure that the water collected came directly from the aquifer and had not stood for a long time in the well casing where it would have been exposed to the atmosphere and to the material, possibly metal, comprising the casings.

Water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum above sea level is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (EOM).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth of water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

Data Presentation

Water-level data are presented in alphabetical order by county. The primary identification number for a given well is the 15-digit site identification number that appears in the upper left corner of the table. The secondary identification number is the local or county well number. Well locations are shown in figure 5; each well is identified on the map by its local well or county well number.

Each well record consists of three parts: the well description, the data table of water levels observed during the water year, and, for most wells, a hydrograph following the data table. Well descriptions are presented in the headings preceding the tabular data.

The following comments clarify information presented in these various headings.

LOCATION.—This paragraph follows the well-identification number and reports the hydrologic-unit number and a geographic point of reference. Latitudes and longitudes used in this report are reported as North American Datum of 1927 unless otherwise specified.

AQUIFER.—This entry designates by name and geologic age the aquifer that the well taps.

WELL CHARACTERISTICS.—This entry describes the well in terms of depth, casing diameter and depth or screened interval, method of construction, use, and changes since construction.

INSTRUMENTATION.—This paragraph provides information on both the frequency of measurement and the collection method used, allowing the user to better evaluate the reported water-level extremes by knowing whether they are based on continuous, monthly, or some other frequency of measurement.

DATUM.—This entry describes both the measuring point and the land-surface elevation at the well. The altitude of the land-surface datum is described in feet above the altitude datum; it is reported with a precision depending on the method of determination. The measuring point is described physically (such as top of casing, top of instrument shelf, and so forth), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above National Geodetic Vertical Datum of 1929 (NGVD 29); it is reported with a precision depending on the method of determination.

REMARKS.—This entry describes factors that may influence the water level in a well or the measurement of the water level, when various methods of measurement were begun, and the network (climatic, terrane, local, or areal effects) or the special project to which the well belongs.

PERIOD OF RECORD.—This entry indicates the time period for which records are published for the well, the month and year at the start of publication of water-level records by the USGS, and the words “to current year” if the records are to be continued into the following year. Time periods for which water-level records are available, but are not published by the USGS, may be noted.

EXTREMES FOR PERIOD OF RECORD.—This entry contains the highest and lowest instantaneously recorded or measured water levels of the period of published record, with respect to land-surface datum or sea level, and the dates of occurrence.

Water-Level Tables

A table of water levels follows the well description for each well. Water-level measurements in this report are given in feet with reference to either sea level or land-surface datum (lsd). Missing records are indicated by dashes in place of the water-level value.

For wells not equipped with recorders, water-level measurements were obtained periodically by steel or electric tape. Tables of periodic water-level measurements in these wells show the date of measurement and the measured water-level value.

Hydrographs

Hydrographs are a graphic display of water-level fluctuations over a period of time. In this report, current water year and, when appropriate, period-of-record hydrographs are shown. Hydrographs that display periodic water-level measurements show points that may be connected with a dashed line from one measurement to the next. Hydrographs that display recorder data show a solid line representing the mean water level recorded for each day. Missing data are indicated by a blank space or break in a hydrograph. Missing data may occur as a result of recorder malfunctions, battery failures, or mechanical problems related to the response of the recorder's float mechanism to water-level fluctuations in a well.

GROUND-WATER-QUALITY DATA

Data Collection and Computation

The ground-water-quality data in this report were obtained as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some wells within a county but not for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality Statewide.

Most methods for collecting and analyzing water samples are described in the TWRIs. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRI, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. Also, detailed information on collecting, treating, and shipping samples may be obtained from the USGS District office (see address shown on back of title page in this report).

Laboratory Measurements

Analysis for sulfide and measurement of alkalinity, pH, water temperature, specific conductance, and dissolved oxygen are performed on site. All other sample analyses are performed at the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used by the USGS laboratory are given in TWRI, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4.

ACCESS TO USGS WATER DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the World Wide Web (WWW). These data may be accessed from *http://water.usgs.gov*.

Water-quality data and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on various media. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each Water Discipline District Office (See address that is shown on the back of the title page of this report.)

DEFINITION OF TERMS

Specialized technical terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. Terms such as algae, water level, and precipitation are used in their common everyday meanings, definitions of which are given in standard dictionaries. Not all terms defined in this alphabetical list apply to every State. See also table for converting English units to International System (SI) Units. Other glossaries that also define water-related terms are accessible from *http://water.usgs.gov/glossaries.html*.

Acid neutralizing capacity (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point. This term designates titration of an “unfiltered” sample (formerly reported as alkalinity).

Acre-foot (AC-FT, acre-ft) is a unit of volume, commonly used to measure quantities of water used or stored, equivalent to the volume of water required to cover 1 acre to a depth of 1 foot and equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters. (See also “Annual runoff”)

Adenosine triphosphate (ATP) is an organic, phosphate-rich compound important in the transfer of energy in organisms. Its central role in living cells makes ATP an excellent indicator of the presence of living material in water. A measurement of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter.

Adjusted discharge is discharge data that have been mathematically adjusted (for example, to remove the effects of a daily tide cycle or reservoir storage).

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample. (See also “Biomass” and “Dry weight”)

Alkalinity is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a “filtered” sample.

Annual runoff is the total quantity of water that is discharged (“runs off”) from a drainage basin in a year. Data reports may present annual runoff data as volumes in acre-feet, as discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches.

Annual 7-day minimum is the lowest mean value for any 7-consecutive-day period in a year. Annual 7-day minimum values are reported herein for the calendar year and the water year (October 1 through September 30). Most low-flow frequency analyses use a climatic year (April 1-March 31), which tends to prevent the low-flow period from being artificially split between adjacent years. The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day, 10-year low-flow statistic.)

Aroclor is the registered trademark for a group of polychlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type, and the last two digits represent the percentage weight of the hydrogen-substituted chlorine.

Artificial substrate is a device that purposely is placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is collected. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection. (See also “Substrate”)

Ash mass is the mass or amount of residue present after the residue from a dry-mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. Ash mass of zooplankton and phytoplankton is expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2). (See also “Biomass” and “Dry mass”)

Aspect is the direction toward which a slope faces with respect to the compass.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, whereas others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Bankfull stage, as used in this report, is the stage at which a stream first overflows its natural banks formed by floods with 1- to 3-year recurrence intervals.

Base discharge (for peak discharge) is a discharge value, determined for selected stations, above which peak discharge data are published. The base discharge at each station is selected so that an average of about three peak flows per year will be published. (See also "Peak flow")

Base flow is sustained flow of a stream in the absence of direct runoff. It includes natural and human-induced streamflows. Natural base flow is sustained largely by ground-water discharge.

Bed material is the sediment mixture of which a streambed, lake, pond, reservoir, or estuary bottom is composed. (See also "Bedload" and "Sediment")

Bedload is material in transport that primarily is supported by the streambed. In this report, bedload is considered to consist of particles in transit from the bed to the top of the bedload sampler nozzle (an elevation ranging from 0.25 to 0.5 foot). These particles are retained in the bedload sampler. A sample collected with a pressure-differential bedload sampler also may contain a component of the suspended load.

Bedload discharge (tons per day) is the rate of sediment moving as bedload, reported as dry weight, that passes through a cross section in a given time. NOTE: Bedload discharge values in this report may include a component of the suspended-sediment discharge. A correction may be necessary when computing the total sediment discharge by summing the bedload discharge and the suspended-sediment discharge. (See also "Bedload," "Dry weight," "Sediment," and "Suspended-sediment discharge")

Benthic organisms are the group of organisms inhabiting the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are useful as indicators of water quality.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as mass per unit area or volume of habitat.

Biomass pigment ratio is an indicator of the total proportion of periphyton that are autotrophic (plants). This also is called the Autotrophic Index.

Blue-green algae (*Cyanophyta*) are a group of phytoplankton and periphyton organisms with a blue pigment in addition to a green pigment called chlorophyll. Blue-green algae can cause nuisance water-quality conditions in lakes and slow-flowing rivers; however, they are found commonly in streams throughout the year. The abundance of blue-green algae in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter (μm^3/mL). The abundance of blue-green algae in periphyton samples is given in cells per square centimeter (cells/cm^2) or biovolume per square centimeter ($\mu m^3/cm^2$). (See also "Phytoplankton"and "Periphyton")

Bottom material (See "Bed material")

Bulk electrical conductivity is the combined electrical conductivity of all material within a doughnut-shaped volume surrounding an induction probe. Bulk conductivity is affected by different physical and chemical properties of the material including the dissolved-solids content of the pore water, and the lithology and porosity of the rock.

Canadian Geodetic Vertical Datum 1928 is a geodetic datum derived from a general adjustment of Canada's first order level network in 1928.

Cell volume (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are used frequently in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume (μm^3) is determined by obtaining critical cell measurements or cell dimensions (for example, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

sphere $4/3\ \pi r^3$ cone $1/3\ \pi r^2 h$ cylinder $\pi r^2 h$.

pi (π) is the ratio of the circumference to the diameter of a circle; pi = 3.14159….

From cell volume, total algal biomass expressed as biovolume (μm^3/mL) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes for all species.

Cells/volume refers to the number of cells of any organism that is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample volume, and generally are reported as cells or units per milliliter (mL) or liter (L).

Cfs-day (See "Cubic foot per second-day")

Channel bars, as used in this report, are the lowest prominent geomorphic features higher than the channel bed.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with BOD or with carbonaceous organic pollution from sewage or industrial wastes. [See also "Biochemical oxygen demand (BOD)"]

***Clostridium perfringens** (C. perfringens)* is a spore-forming bacterium that is common in the feces of human and other warmblooded animals. Clostridial spores are being used experimentally as an indicator of past fecal contamination and the presence of microorganisms that are resistant to disinfection and environmental stresses. (See also "Bacteria")

Coliphages are viruses that infect and replicate in coliform bacteria. They are indicative of sewage contamination of water and of the survival and transport of viruses in the environment.

Color unit is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Confined aquifer is a term used to describe an aquifer containing water between two relatively impermeable boundaries. The water level in a well tapping a confined aquifer stands above the top of the confined aquifer and can be higher or lower than the water table that may be present in the material above it. In some cases, the water level can rise above the ground surface, yielding a flowing well.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Continuous-record station is a site where data are collected with sufficient frequency to define daily mean values and variations within a day.

Control designates a feature in the channel that physically affects the water-surface elevation and thereby determines the stage-discharge relation at the gage. This feature may be a constriction of the channel, a bedrock outcrop, a gravel bar, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure, as used in this report, is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of saltwater.

Cubic foot per second (CFS, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second or approximately 449 gallons per minute, or 0.02832 cubic meters per second. The term "second-foot" sometimes is used synonymously with "cubic foot per second" but is now obsolete.

Cubic foot per second-day (CFS-DAY, Cfs-day, $[(ft^3/s)/d]$) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.98347 acre-feet, 646,317 gallons, or 2,446.6 cubic meters. The daily mean discharges reported in the daily value data tables numerically are equal to the daily volumes in cfs-days, and the totals also represent volumes in cfs-days.

Cubic foot per second per square mile [CFSM, $(ft^3/s)/mi^2$] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area. (See also "Annual runoff")

Daily mean suspended-sediment concentration is the time-weighted mean concentration of suspended sediment passing a stream cross section during a 24-hour day. (See also "Sediment" and "Suspended-sediment concentration")

Daily record station is a site where data are collected with sufficient frequency to develop a record of one or more data values per day. The frequency of data collection can range from continuous recording to data collection on a daily or near-daily basis.

Data collection platform (DCP) is an electronic instrument that collects, processes, and stores data from various sensors, and transmits the data by satellite data relay, line-of-sight radio, and/or landline telemetry.

Data logger is a microprocessor-based data acquisition system designed specifically to acquire, process, and store data. Data usually are downloaded from onsite data loggers for entry into office data systems.

Datum is a surface or point relative to which measurements of height and/or horizontal position are reported. A vertical datum is a horizontal surface used as the zero point for measurements of gage height, stage, or elevation; a horizontal datum is a reference for positions given in terms of latitude-longitude, State Plane coordinates, or Universal Transverse Mercator (UTM) coordinates. (See also "Gage datum," "Land-surface datum," "National Geodetic Vertical Datum of 1929," and "North American Vertical Datum of 1988")

Diatoms *(Bacillariophyta)* are unicellular or colonial algae with a siliceous cell wall. The abundance of diatoms in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter (μm^3/mL). The abundance of diatoms in periphyton samples is given in cells per square centimeter (cells/cm^2) or biovolume per square centimeter ($\mu m^3/cm^2$). (See also "Phytoplankton" and "Periphyton")

Diel is of or pertaining to a 24-hour period of time; a regular daily cycle.

Discharge, or **flow**, is the rate that matter passes through a cross section of a stream channel or other water body per unit of time. The term commonly refers to the volume of water (including, unless otherwise stated, any sediment or other constituents suspended or dissolved in the water) that passes a cross section in a stream channel, canal, pipeline, and so forth, within a given period of time (cubic feet per second). Discharge also can apply to the rate at which constituents, such as suspended sediment, bedload, and dissolved or suspended chemicals, pass through a cross section, in which cases the quantity is expressed as the mass of constituent that passes the cross section in a given period of time (tons per day).

Dissolved refers to that material in a representative water sample that passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal and State agencies that collect water-quality data. Determinations of "dissolved" constituent concentrations are made on sample water that has been filtered.

Dissolved oxygen (DO) is the molecular oxygen (oxygen gas) dissolved in water. The concentration in water is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved-solids concentration. Photosynthesis and respiration by plants commonly cause diurnal variations in dissolved-oxygen concentration in water from some streams.

Dissolved solids concentration in water is the quantity of dissolved material in a sample of water. It is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. In the mathematical calculation, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to convert it to carbonate. Alternatively, alkalinity concentration (as mg/L $CaCO_3$) can be converted to carbonate concentration by multiplying by 0.60.

Diversity index (H) (Shannon index) is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i \approx 1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n},$$

where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specific location is that area upstream from the location, measured in a horizontal plane, that has a common outlet at the site for its surface runoff from precipitation that normally drains by gravity into a stream. Drainage areas given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

Drainage basin is a part of the Earth's surface that contains a drainage system with a common outlet for its surface runoff. (See "Drainage area")

Dry mass refers to the mass of residue present after drying in an oven at 105 °C, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass. (See also "Ash mass," "Biomass," and "Wet mass")

Dry weight refers to the weight of animal tissue after it has been dried in an oven at 65 °C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue. (See also "Wet weight")

Embeddedness is the degree to which gravel-sized and larger particles are surrounded or enclosed by finer-sized particles. (See also "Substrate embeddedness class")

Enterococcus bacteria commonly are found in the feces of humans and other warmblooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink to red colonies with black or reddish-brown precipitate after incubation at 41 °C on mE agar (nutrient medium for bacterial growth) and subsequent transfer to EIA medium. Enterococci include *Streptococcus feacalis, Streptococcus* *feacium, Streptococcus avium,* and their variants. (See also “Bacteria”)

EPT Index is the total number of distinct taxa within the insect orders Ephemeroptera, Plecoptera, and Trichoptera. This index summarizes the taxa richness within the aquatic insects that generally are considered pollution sensitive; the index usually decreases with pollution.

Escherichia coli *(E. coli)* are bacteria present in the intestine and feces of warmblooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing for 22 to 24 hours at 44.5 °C on mTEC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

Estimated (E) value of a concentration is reported when an analyte is detected and all criteria for a positive result are met. If the concentration is less than the method detection limit (MDL), an E code will be reported with the value. If the analyte is identified qualitatively as present, but the quantitative determination is substantially more uncertain, the National Water Quality Laboratory will identify the result with an E code even though the measured value is greater than the MDL. A value reported with an E code should be used with caution. When no analyte is detected in a sample, the default reporting value is the MDL preceded by a less than sign (<). For bacteriological data, concentrations are reported as estimated when results are based on non-ideal colony counts.

Euglenoids (*Euglenophyta*) are a group of algae that usually are free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark. (See also “Phytoplankton”)

Extractable organic halides (EOX) are organic compounds that contain halogen atoms such as chlorine. These organic compounds are semivolatile and extractable by ethyl acetate from air-dried streambed sediment. The ethyl acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the streambed sediment.

Fecal coliform bacteria are present in the intestines or feces of warmblooded animals. They often are used as indicators of the sanitary quality of the water. In the laboratory, they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5 °C plus or minus 0.2 °C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

Fecal streptococcal bacteria are present in the intestines of warmblooded animals and are ubiquitous in the environment. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that produce red or pink colonies within 48 hours at 35 °C plus or minus 1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

Fire algae (*Pyrrhophyta*) are free-swimming unicells characterized by a red pigment spot. (See also “Phytoplankton”)

Flow-duration percentiles are values on a scale of 100 that indicate the percentage of time for which a flow is not exceeded. For example, the 90th percentile of river flow is greater than or equal to 90 percent of all recorded flow rates.

Gage datum is a horizontal surface used as a zero point for measurement of stage or gage height. This surface usually is located slightly below the lowest point of the stream bottom such that the gage height is usually slightly greater than the maximum depth of water. Because the gage datum is not an actual physical object, the datum is usually defined by specifying the elevations of permanent reference marks such as bridge abutments and survey monuments, and the gage is set to agree with the reference marks. Gage datum is a local datum that is maintained independently of any national geodetic datum. However, if the elevation of the gage datum relative to the national datum (North American Vertical Datum of 1988 or National Geodetic Vertical Datum of 1929) has been determined, then the gage readings can be converted to elevations above the national datum by adding the elevation of the gage datum to the gage reading.

Gage height (G.H.) is the water-surface elevation, in feet above the gage datum. If the water surface is below the gage datum, the gage height is negative. Gage height often is used interchangeably with the more general term “stage,” although gage height is more appropriate when used in reference to a reading on a gage.

Gage values are values that are recorded, transmitted, and/or computed from a gaging station. Gage values typically are collected at 5-, 15-, or 30-minute intervals.

Gaging station is a site on a stream, canal, lake, or reservoir where systematic observations of stage, discharge, or other hydrologic data are obtained.

Gas chromatography/flame ionization detector (GC/FID) is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

Geomorphic channel units, as used in this report, are fluvial geomorphic descriptors of channel shape and stream velocity. Pools, riffles, and runs are types of geomorphic channel units considered for National Water-Quality Assessment (NAWQA) Program habitat sampling.

Green algae *(Chlorophyta)* are unicellular or colonial algae with chlorophyll pigments similar to those in terrestrial green plants. Some forms of green algae produce mats or floating "moss" in lakes. The abundance of green algae in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter (μm^3/mL). The abundance of green algae in periphyton samples is given in cells per square centimeter (cells/cm^2) or biovolume per square centimeter ($\mu m^3/cm^2$). (See also "Phytoplankton" and "Periphyton")

Habitat, as used in this report, includes all nonliving (physical) aspects of the aquatic ecosystem, although living components like aquatic macrophytes and riparian vegetation also are usually included. Measurements of habitat typically are made over a wider geographic scale than are measurements of species distribution.

Habitat quality index is the qualitative description (level 1) of instream habitat and riparian conditions surrounding the reach sampled. Scores range from 0 to 100 percent with higher scores indicative of desirable habitat conditions for aquatic life. Index only applicable to wadable streams.

Hardness of water is a physical-chemical characteristic that commonly is recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations (primarily calcium and magnesium) and is expressed as the equivalent concentration of calcium carbonate ($CaCO_3$).

High tide is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. *See NOAA Web site: http://www.co-ops.nos.noaa.gov/tideglos.html*

Hilsenhoff's Biotic Index (HBI) is an indicator of organic pollution that uses tolerance values to weight taxa abundances; usually increases with pollution. It is calculated as follows:

$$HBI = sum\frac{(n)(a)}{N},$$

where n is the number of individuals of each taxon, a is the tolerance value of each taxon, and N is the total number of organisms in the sample.

Horizontal datum (See "Datum")

Hydrologic index stations referred to in this report are continuous-record gaging stations that have been selected as representative of streamflow patterns for their respective regions. Station locations are shown on index maps.

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as defined by the former Office of Water Data Coordination and delineated on the State Hydrologic Unit Maps by the USGS. Each hydrologic unit is identified by an 8-digit number.

Inch (IN., in.), in reference to streamflow, as used in this report, refers to the depth to which the drainage area would be covered with water if all of the runoff for a given time period were distributed uniformly on it. (See also "Annual runoff")

Instantaneous discharge is the discharge at a particular instant of time. (See also "Discharge")

International Boundary Commission Survey Datum refers to a geodetic datum established at numerous monuments along the United States-Canada boundary by the International Boundary Commission.

Island, as used in this report, is a mid-channel bar that has permanent woody vegetation, is flooded once a year, on average, and remains stable except during large flood events.

Laboratory reporting level (LRL) generally is equal to twice the yearly determined long-term method detection level (LT-MDL). The LRL controls false negative error. The probability of falsely reporting a nondetection for a sample that contained an analyte at a concentration equal to or greater than the LRL is predicted to be less than or equal to 1 percent. The value of the LRL will be reported with a "less than" (<) remark code for samples in which the analyte was not detected. The National Water Quality Laboratory (NWQL) collects quality-control data from selected analytical methods on a continuing basis to determine LT-MDLs and to establish LRLs. These values are reevaluated annually on the basis of the most current quality-control data and, therefore, may change. The LRL replaces the term 'non-detection value' (NDV).

Land-surface datum (lsd) is a datum plane that is approximately at land surface at each ground-water observation well.

Latent heat flux (often used interchangeably with latent heat-flux density) is the amount of heat energy that converts water from liquid to vapor (evaporation) or from vapor to liquid (condensation) across a specified cross-sectional area per unit time. Usually expressed in watts per square meter.

Light-attenuation coefficient, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation:

$$I = I_o e^{-\lambda L},$$

where I_o is the source light intensity, I is the light intensity at length L (in meters) from the source, λ is the light-attenuation coefficient, and e is the base of the natural logarithm. The light-attenuation coefficient is defined as

$$\lambda = -\frac{1}{L}\log_e \frac{I}{I_o}.$$

Lipid is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells. Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

Long-term method detection level (LT-MDL) is a detection level derived by determining the standard deviation of a minimum of 24 method detection limit (MDL) spike-sample measurements over an extended period of time. LT-MDL data are collected on a continuous basis to assess year-to-year variations in the LT-MDL. The LT-MDL controls false positive error. The chance of falsely reporting a concentration at or greater than the LT-MDL for a sample that did not contain the analyte is predicted to be less than or equal to 1 percent.

Low tide is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. *See NOAA Web site: http://www.co-ops.nos.noaa.gov/tideglos.html*

Macrophytes are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that usually are arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

Mean concentration of suspended sediment (Daily mean suspended-sediment concentration) is the time-weighted concentration of suspended sediment passing a stream cross section during a given time period. (See also “Daily mean suspended-sediment concentration” and “Suspended-sediment concentration”)

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period. (See also “Discharge”)

Mean high or **low tide** is the average of all high or low tides, respectively, over a specific period.

Mean sea level is a local tidal datum. It is the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; for example, monthly mean sea level and yearly mean sea level. In order that they may be recovered when needed, such datums are referenced to fixed points known as benchmarks. (See also “Datum”)

Measuring point (MP) is an arbitrary permanent reference point from which the distance to water surface in a well is measured to obtain water level.

Megahertz is a unit of frequency. One megahertz equals one million cycles per second.

Membrane filter is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Method detection limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero. It is determined from the analysis of a sample in a given matrix containing the analyte. At the MDL concentration, the risk of a false positive is predicted to be less than or equal to 1 percent.

Method of Cubatures is a method of computing discharge in tidal estuaries based on the conservation of mass equation.

Methylene blue active substances (MBAS) indicate the presence of detergents (anionic surfactants). The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram (UG/G, µg/g) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per kilogram (UG/KG, µg/kg) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. One microgram per liter is equivalent to 1 part per billion.

Microsiemens per centimeter (US/CM, µS/cm) is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of Units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in water as the mass (milligrams) of constituent per unit volume (liter) of water. Concentration of suspended sediment also is expressed in milligrams per liter and is based on the mass of dry sediment per liter of water-sediment mixture.

Minimum reporting level (MRL) is the smallest measured concentration of a constituent that may be reliably reported by using a given analytical method.

Miscellaneous site, miscellaneous station, or miscellaneous sampling site is a site where streamflow, sediment, and/or water-quality data or water-quality or sediment samples are collected once, or more often on a random or discontinuous basis to provide better areal coverage for defining hydrologic and water-quality conditions over a broad area in a river basin.

Most probable number (MPN) is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. MPN is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

Multiple-plate samplers are artificial substrates of known surface area used for obtaining benthic invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

Nanograms per liter (NG/L, ng/L) is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

National Geodetic Vertical Datum of 1929 (NGVD 29) is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It formerly was called “Sea Level Datum of 1929” or “mean sea level.” Although the datum was derived from the mean sea level at 26 tide stations, it does not necessarily represent local mean sea level at any particular place. *See NOAA Web site: http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88* (See “North American Vertical Datum of 1988”)

Natural substrate refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives. (See also “Substrate”)

Nekton are the consumers in the aquatic environment and consist of large, free-swimming organisms that are capable of sustained, directed mobility.

Nephelometric turbidity unit (NTU) is the measurement for reporting turbidity that is based on use of a standard suspension of formazin. Turbidity measured in NTU uses nephelometric methods that depend on passing specific light of a specific wavelength through the sample.

North American Datum of 1927 (NAD 27) is the horizontal control datum for the United States that was defined by a location and azimuth on the Clarke spheroid of 1866.

North American Datum of 1983 (NAD 83) is the horizontal control datum for the United States, Canada, Mexico, and Central America that is based on the adjustment of 250,000 points including 600 satellite Doppler stations that constrain the system to a geocentric origin. NAD 83 has been officially adopted as the legal horizontal datum for the United States by the Federal government.

North American Vertical Datum of 1988 (NAVD 88) is a fixed reference adopted as the official civilian vertical datum for elevations determined by Federal surveying and mapping activities in the United States. This datum was established in 1991 by minimum-constraint adjustment of the Canadian, Mexican, and United States first-order terrestrial leveling networks.

Open or **screened interval** is the length of unscreened opening or of well screen through which water enters a well, in feet below land surface.

Organic carbon (OC) is a measure of organic matter present in aqueous solution, suspension, or bottom sediment. May be reported as dissolved organic carbon (DOC), particulate organic carbon (POC), or total organic carbon (TOC).

Organic mass or **volatile mass** of a living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. Organic mass is expressed in the same units as for ash mass and dry mass. (See also “Ash mass,” “Biomass,” and “Dry mass”)

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meter (m^2), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliter (mL) or liter (L). Numbers of planktonic organisms can be expressed in these terms.

Organochlorine compounds are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.

Parameter code is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property.

Partial-record station is a site where discrete measurements of one or more hydrologic parameters are obtained over a period of time without continuous data being recorded or computed. A common example is a crest-stage gage partial-record station at which only peak stages and flows are recorded.

Particle size is the diameter, in millimeters (mm), of a particle determined by sieve or sedimentation methods. The sedimentation method uses the principle of Stokes Law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, sedigraph) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification, as used in this report, agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	>0.00024 - 0.004	Sedimentation
Silt	>0.004 - 0.062	Sedimentation
Sand	>0.062 - 2.0	Sedimentation/sieve
Gravel	>2.0 - 64.0	Sieve
Cobble	>64 - 256	Manual measurement
Boulder	>256	Manual measurement

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. For the sedimentation method, most of the organic matter is removed, and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Peak flow (peak stage) is an instantaneous local maximum value in the continuous time series of streamflows or stages, preceded by a period of increasing values and followed by a period of decreasing values. Several peak values ordinarily occur in a year. The maximum peak value in a year is called the annual peak; peaks lower than the annual peak are called secondary peaks. Occasionally, the annual peak may not be the maximum value for the year; in such cases, the maximum value occurs at midnight at the beginning or end of the year, on the recession from or rise toward a higher peak in the adjoining year. If values are recorded at a discrete series of times, the peak recorded value may be taken as an approximation of the true peak, which may occur between the recording instants. If the values are recorded with finite precision, a sequence of equal recorded values may occur at the peak; in this case, the first value is taken as the peak.

Percent composition or **percent of total** is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, weight, mass, or volume.

Percent shading is a measure of the amount of sunlight potentially reaching the stream. A clinometer is used to measure left and right bank canopy angles. These values are added together, divided by 180, and multiplied by 100 to compute percentage of shade.

Periodic-record station is a site where stage, discharge, sediment, chemical, physical, or other hydrologic measurements are made one or more times during a year but at a frequency insufficient to develop a daily record.

Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. Although primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton are useful indicators of water quality.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7.0 standard units are termed “acidic,” and solutions with a pH greater than 7.0 are termed “basic.” Solutions with a pH of 7.0 are neutral. The presence and concentration of many dissolved chemical constituents found in water are affected, in part, by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms also are affected, in part, by the hydrogen-ion activity of water.

Phytoplankton is the plant part of the plankton. They usually are microscopic, and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment and commonly are known as algae. (See also “Plankton”)

Picocurie (PC, pCi) is one-trillionth (1×10^{-12}) of the amount of radioactive nuclide represented by a curie (Ci). A curie is the quantity of radioactive nuclide that yields 3.7×10^{10} radioactive disintegrations per second (dps). A picocurie yields 0.037 dps, or 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Polychlorinated naphthalenes (PCNs) are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (PCBs) and have been identified in commercial PCB preparations.

Pool, as used in this report, is a small part of a stream reach with little velocity, commonly with water deeper than surrounding areas.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated (carbon method) by the plants.

Primary productivity (carbon method) is expressed as milligrams of carbon per area per unit time [mg C/(m^2/time)] for periphyton and macrophytes or per volume [mg C/(m^3/time)] for phytoplankton. The carbon method defines the amount of carbon dioxide consumed as measured by radioactive carbon (carbon-14). The carbon-14 method is of greater sensitivity than the oxygen light- and dark-bottle method and is preferred for use with unenriched water samples. Unit time may be either the hour or day, depending on the incubation period. (See also “Primary productivity”)

Primary productivity (oxygen method) is expressed as milligrams of oxygen per area per unit time [mg O/(m^2/time)] for periphyton and macrophytes or per volume [mg O/(m^3/time)] for phytoplankton. The oxygen method defines production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light- and dark-bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period. (See also “Primary productivity”)

Radioisotopes are isotopic forms of elements that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

Reach, as used in this report, is a length of stream that is chosen to represent a uniform set of physical, chemical, and biological conditions within a segment. It is the principal sampling unit for collecting physical, chemical, and biological data.

Recoverable from bed (bottom) material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. (See also “Bed material”)

Recurrence interval, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or nonexceedance of a specified low flow). The terms “return period” and “recurrence interval” do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day, 10-year low flow ($7Q_{10}$) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the nonexceedances of the $7Q_{10}$ occur less than 10 years after the previous nonexceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous nonexceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the $7Q_{10}$.

Replicate samples are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

Return period (See “Recurrence interval”)

Riffle, as used in this report, is a shallow part of the stream where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.

River mileage is the curvilinear distance, in miles, measured upstream from the mouth along the meandering path of a stream channel in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council and typically is used to denote location along a river.

Run, as used in this report, is a relatively shallow part of a stream with moderate velocity and little or no surface turbulence.

Runoff is the quantity of water that is discharged (“runs off”) from a drainage basin during a given time period. Runoff data may be presented as volumes in acre-feet, as mean discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches. (See also “Annual runoff”)

Sea level, as used in this report, refers to one of the two commonly used national vertical datums (NGVD 1929 or NAVD 1988). See separate entries for definitions of these datums.

Sediment is solid material that originates mostly from disintegrated rocks; when transported by, suspended in, or deposited from water, it is referred to as “fluvial sediment.” Sediment includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are affected by environmental and land-use factors. Some major factors are topography, soil characteristics, land cover, and depth and intensity of precipitation.

Sensible heat flux (often used interchangeably with latent sensible heat-flux density) is the amount of heat energy that moves by turbulent transport through the air across a specified cross-sectional area per unit time and goes to heating (cooling) the air. Usually expressed in watts per square meter.

Seven-day, 10-year low flow ($7Q_{10}$) is the discharge below which the annual 7-day minimum flow falls in 1 year out of 10 on the long-term average. The recurrence interval of the $7Q_{10}$ is 10 years; the chance that the annual 7-day minimum flow will be less than the $7Q_{10}$ is 10 percent in any given year. (See also “Annual 7-day minimum” and “Recurrence interval”)

Shelves, as used in this report, are streambank features extending nearly horizontally from the flood plain to the lower limit of persistent woody vegetation.

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Sodium hazard in water is an index that can be used to evaluate the suitability of water for irrigating crops.

Soil heat flux (often used interchangeably with soil heat-flux density) is the amount of heat energy that moves by conduction across a specified cross-sectional area of soil per unit time and goes to heating (or cooling) the soil. Usually expressed in watts per square meter.

Soil-water content is the water lost from the soil upon drying to constant mass at 105 °C; expressed either as mass of water per unit mass of dry soil or as the volume of water per unit bulk volume of soil.

Specific electrical conductance (conductivity) is a measure of the capacity of water (or other media) to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific electrical conductance is a function of the types and quantity of dissolved substances in water and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is from 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stable isotope ratio (per MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific water, to evaluate mixing of different water, as an aid in determining reaction rates, and other chemical or hydrologic processes.

Stage (See “Gage height”)

Stage-discharge relation is the relation between the water-surface elevation, termed stage (gage height), and the volume of water flowing in a channel per unit time.

Streamflow is the discharge that occurs in a natural channel. Although the term “discharge” can be applied to the flow of a canal, the word “streamflow” uniquely describes the discharge in a surface stream course. The term “streamflow” is more general than “runoff” as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

Substrate embeddedness class is a visual estimate of riffle streambed substrate larger than gravel that is surrounded or covered by fine sediment (<2 mm, sand or finer). Below are the class categories expressed as the percentage covered by fine sediment:

0	no gravel or larger substrate	3	26-50 percent
1	> 75 percent	4	5-25 percent
2	51-75 percent	5	< 5 percent

Surface area of a lake is that area (acres) encompassed by the boundary of the lake as shown on USGS topographic maps, or other available maps or photographs. Because surface area changes with lake stage, surface areas listed in this report represent those determined for the stage at the time the maps or photographs were obtained.

Surficial bed material is the upper surface (0.1 to 0.2 foot) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Surrogate is an analyte that behaves similarly to a target analyte, but that is highly unlikely to occur in a sample. A surrogate is added to a sample in known amounts before extraction and is measured with the same laboratory procedures used to measure the target analyte. Its purpose is to monitor method performance for an individual sample.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is defined operationally as the material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative suspended water-sediment sample that is retained on a 0.45-micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment, and, thus, the determination represents something less than the “total” amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. Determinations of “suspended, recoverable” constituents are made either by directly analyzing the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total recoverable concentrations of the constituent. (See also “Suspended”)

Suspended sediment is the sediment maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid. (See also “Sediment”)

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 foot above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The analytical technique uses the mass of all of the sediment and the net weight of the water-sediment mixture in a sample to compute the suspended-sediment concentration. (See also “Sediment” and “Suspended sediment”)

Suspended-sediment discharge (tons/d) is the rate of sediment transport, as measured by dry mass or volume, that passes a cross section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft^3/s) x 0.0027. (See also “Sediment,” “Suspended sediment,” and “Suspended-sediment concentration”)

Suspended-sediment load is a general term that refers to a given characteristic of the material in suspension that passes a point during a specified period of time. The term needs to be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It is not synonymous with either suspended-sediment discharge or concentration. (See also “Sediment”)

Suspended solids, total residue at 105 °C concentration is the concentration of inorganic and organic material retained on a filter, expressed as milligrams of dry material per liter of water (mg/L). An aliquot of the sample is used for this analysis.

Suspended, total is the total amount of a given constituent in the part of a water-sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. Knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total." Determinations of "suspended, total" constituents are made either by directly analyzing portions of the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total concentrations of the constituent. (See also "Suspended")

Synoptic studies are short-term investigations of specific water-quality conditions during selected seasonal or hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

Taxa (Species) richness is the number of species (taxa) present in a defined area or sampling unit.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchial scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, *Hexagenia limbata,* is the following:

Kingdom:	Animal
Phylum:	Arthropeda
Class:	Insecta
Order:	Ephemeroptera
Family:	Ephemeridae
Genus:	*Hexagenia*
Species:	*Hexagenia limbata*

Thalweg is the line formed by connecting points of minimum streambed elevation (deepest part of the channel).

Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder" is used in the table descriptions and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water resulting from the mixing of flow proportionally to the duration of the concentration.

Tons per acre-foot (T/acre-ft) is the dry mass (tons) of a constituent per unit volume (acre-foot) of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY, tons/d) is a common chemical or sediment discharge unit. It is the quantity of a substance in solution, in suspension, or as bedload that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric ton per day.

Total is the amount of a given constituent in a representative whole-water (unfiltered) sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determined at least 95 percent of the constituent in the sample.)

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. This group includes coliforms that inhabit the intestine of warmblooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas formation within 48 hours at 35 °C. In the laboratory, these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35 °C plus or minus 1.0 °C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milliliters of sample. (See also "Bacteria")

Total discharge is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other than water, this term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

Total in bottom material is the amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as “total in bottom material.”

Total length (fish) is the straight-line distance from the anterior point of a fish specimen’s snout, with the mouth closed, to the posterior end of the caudal (tail) fin, with the lobes of the caudal fin squeezed together.

Total load refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

Total organism count is the number of organisms collected and enumerated in any particular sample. (See also “Organism count/volume”)

Total recoverable is the amount of a given constituent in a whole-water sample after a sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the “total” amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data for whole-water samples, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures may produce different analytical results.

Total sediment discharge is the mass of suspended-sediment plus bed-load transport, measured as dry weight, that passes a cross section in a given time. It is a rate and is reported as tons per day. (See also “Bedload,” “Bedload discharge,” “Sediment,” “Suspended sediment,” and “Suspended-sediment concentration”)

Total sediment load or **total load** is the sediment in transport as bedload and suspended-sediment load. The term may be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It differs from total sediment discharge in that load refers to the material, whereas discharge refers to the quantity of material, expressed in units of mass per unit time. (See also “Sediment,” “Suspended-sediment load,” and “Total load”)

Transect, as used in this report, is a line across a stream perpendicular to the flow and along which measurements are taken, so that morphological and flow characteristics along the line are described from bank to bank. Unlike a cross section, no attempt is made to determine known elevation points along the line.

Turbidity is the reduction in the transparency of a solution because of the presence of suspended and some dissolved substances. The measurement technique records the collective optical properties of the solution that cause light to be scattered and attenuated rather than transmitted in straight lines; the higher the intensity of scattered or attenuated light, the higher the value of the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU). Depending on the method used, the turbidity units as NTU can be defined as the intensity of light of a specified wavelength scattered or attenuated by suspended particles or absorbed at a method specified angle, usually 90 degrees, from the path of the incident light. Currently approved methods for the measurement of turbidity in the USGS include those that conform to USEPA Method 180.1, ASTM D1889-00, and ISO 7027. Measurements of turbidity by these different methods and different instruments are unlikely to yield equivalent values.

Ultraviolet (UV) absorbance (absorption) at 254 or 280 nanometers is a measure of the aggregate concentration of the mixture of UV absorbing organic materials dissolved in the analyzed water, such as lignin, tannin, humic substances, and various aromatic compounds. UV absorbance (absorption) at 254 or 280 nanometers is measured in UV absorption units per centimeter of path length of UV light through a sample.

Unconfined aquifer is an aquifer whose upper surface is a water table free to fluctuate under atmospheric pressure. (See “Water-table aquifer”)

Vertical datum (See “Datum”)

Volatile organic compounds (VOCs) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and, subsequently, analyzed by gas chromatography. Many VOCs are human-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They often are components of fuels, solvents, hydraulic fluids, paint thinners, and dry-cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human-health concern because many are toxic and are known or suspected human carcinogens.

Water table is that surface in a ground-water body at which the water pressure is equal to the atmospheric pressure.

Water-table aquifer is an unconfined aquifer within which the water table is found.

Water year in USGS reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the

12 months. Thus, the year ending September 30, 2002, is called the “2002 water year.”

Watershed (See “Drainage basin”)

WDR is used as an abbreviation for “Water-Data Report” in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports. (WRD was used as an abbreviation for “Water-Resources Data” in reports published prior to 1976.)

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

Wet mass is the mass of living matter plus contained water. (See also “Biomass” and “Dry mass”)

Wet weight refers to the weight of animal tissue or other substance including its contained water. (See also “Dry weight”)

WSP is used as an acronym for “Water-Supply Paper” in reference to previously published reports.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and often are large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers. (See also “Plankton”)

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Techniques of Water-Resources Investigations of the U.S. Geological Survey

The USGS publishes a series of manuals, the Techniques of Water-Resources Investigations, describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, section A of book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

Reports in the Techniques of Water-Resources Investigations series, which are listed below, are online at *http://water.usgs.gov/pubs/twri/*. Printed copies are for sale by the USGS, Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office), telephone 1-888-ASK-USGS. Please telephone 1-888-ASK-USGS for current prices, and refer to the title, book number, chapter number, and mention the "U.S. Geological Survey Techniques of Water-Resources Investigations." Products can then be ordered by telephone, or online at http://www.usgs.gov/sales.html, or by FAX to (303) 202-4693 of an order form available online at *http://mac.usgs.gov/isb/pubs/forms/*. Prepayment by major credit card or by a check or money order payable to the "U.S. Geological Survey" is required.

Book 1. Collection of Water Data by Direct Measurement

Section D. Water Quality

1–D1.*Water temperature—Influential factors, field measurement, and data presentation*, by H.H. Stevens, Jr., J.F. Ficke, and G.F. Smoot: USGS–TWRI book 1, chap. D1. 1975. 65 p.
1–D2.*Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W. Wood: USGS–TWRI book 1, chap. D2. 1976. 24 p.

Book 2. Collection of Environmental Data

Section D. Surface Geophysical Methods

2–D1.*Application of surface geophysics to ground-water investigations,* by A.A.R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS–TWRI book 2, chap. D1. 1974. 116 p.
2–D2.*Application of seismic-refraction techniques to hydrologic studies,* by F.P. Haeni: USGS–TWRI book 2, chap. D2. 1988. 86 p.

Section E. Subsurface Geophysical Methods

2–E1.*Application of borehole geophysics to water-resources investigations,* by W.S. Keys and L.M. MacCary: USGS–TWRI book 2, chap. E1. 1971. 126 p.
2–E2.*Borehole geophysics applied to ground-water investigations,* by W.S. Keys: USGS–TWRI book 2, chap. E2. 1990. 150 p.

Section F. Drilling and Sampling Methods

2–F1.*Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and W.E. Teasdale: USGS–TWRI book 2, chap. F1. 1989. 97 p.

Book 3. Applications of Hydraulics

Section A. Surface-Water Techniques

3–A1.*General field and office procedures for indirect discharge measurements,* by M.A. Benson and Tate Dalrymple: USGS–TWRI book 3, chap. A1. 1967. 30 p.
3–A2.*Measurement of peak discharge by the slope-area method,* by Tate Dalrymple and M.A. Benson: USGS–TWRI book 3, chap. A2. 1967. 12 p.
3–A3.*Measurement of peak discharge at culverts by indirect methods,* by G.L. Bodhaine: USGS–TWRI book 3, chap. A3. 1968. 60 p.
3–A4.*Measurement of peak discharge at width contractions by indirect methods,* by H.F. Matthai: USGS-TWRI book 3, chap. A4. 1967. 44 p.
3–A5.*Measurement of peak discharge at dams by indirect methods,* by Harry Hulsing: USGS–TWRI book 3, chap. A5. 1967. 29 p.
3–A6.*General procedure for gaging streams,* by R.W. Carter and Jacob Davidian: USGS–TWRI book 3, chap. A6. 1968. 13 p.
3–A7.*Stage measurement at gaging stations,* by T.J. Buchanan and W.P. Somers: USGS–TWRI book 3, chap. A7. 1968. 28 p.
3–A8.*Discharge measurements at gaging stations,* by T.J. Buchanan and W.P. Somers: USGS–TWRI book 3, chap. A8. 1969. 65 p.
3–A9.*Measurement of time of travel in streams by dye tracing,* by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS–TWRI book 3, chap. A9. 1989. 27 p.
3–Al0.*Discharge ratings at gaging stations,* by E.J. Kennedy: USGS–TWRI book 3, chap. A10. 1984. 59 p.
3–A11.*Measurement of discharge by the moving-boat method,* by G.F. Smoot and C.E. Novak: USGS–TWRI book 3, chap. A11. 1969. 22 p.
3–A12.*Fluorometric procedures for dye tracing*, Revised, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS–TWRI book 3, chap. A12. 1986. 34 p.
3–A13.*Computation of continuous records of streamflow*, by E.J. Kennedy: USGS–TWRI book 3, chap. A13. 1983. 53 p.
3–A14.*Use of flumes in measuring discharge,* by F.A. Kilpatrick and V.R. Schneider: USGS–TWRI book 3, chap. A14. 1983. 46 p.
3–A15.*Computation of water-surface profiles in open channels,* by Jacob Davidian: USGS–TWRI book 3, chap. A15. 1984. 48 p.
3–A16.*Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS–TWRI book 3, chap. A16. 1985. 52 p.
3–A17.*Acoustic velocity meter systems,* by Antonius Laenen: USGS–TWRI book 3, chap. A17. 1985. 38 p.
3–A18.*Determination of stream reaeration coefficients by use of tracers,* by F.A. Kilpatrick, R.E. Rathbun, Nobuhiro Yotsukura, G.W. Parker, and L.L. DeLong: USGS–TWRI book 3, chap. A18. 1989. 52 p.
3–A19.*Levels at streamflow gaging stations*, by E.J. Kennedy: USGS–TWRI book 3, chap. A19. 1990. 31 p.
3–A20.*Simulation of soluble waste transport and buildup in surface waters using tracers*, by F.A. Kilpatrick: USGS–TWRI book 3, chap. A20. 1993. 38 p.
3–A21*Stream-gaging cableways,* by C. Russell Wagner: USGS–TWRI book 3, chap. A21. 1995. 56 p.

Section B. Ground-Water Techniques

3–B1. *Aquifer-test design, observation, and data analysis,* by R.W. Stallman: USGS–TWRI book 3, chap. B1. 1971. 26 p.
3–B2.*Introduction to ground-water hydraulics, a programed text for self-instruction*, by G.D. Bennett: USGS–TWRI book 3, chap. B2. 1976. 172 p.
3–B3.*Type curves for selected problems of flow to wells in confined aquifers*, by J.E. Reed: USGS–TWRI book 3, chap. B3. 1980. 106 p.
3–B4.*Regression modeling of ground-water flow,* by R.L. Cooley and R.L. Naff: USGS–TWRI book 3, chap. B4. 1990. 232 p.

3–B4.*Supplement 1. Regression modeling of ground-water flow—Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems,* by R.L. Cooley: USGS–TWRI book 3, chap. B4. 1993. 8 p.
3–B5.*Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems—An introduction*, by O.L. Franke, T.E. Reilly, and G.D. Bennett: USGS–TWRI book 3, chap. B5. 1987. 15 p.
3–B6.*The principle of superposition and its application in ground-water hydraulics,* by T.E. Reilly, O.L. Franke, and G.D. Bennett: USGS–TWRI book 3, chap. B6. 1987. 28 p.
3–B7.*Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow,* by E.J. Wexler: USGS–TWRI book 3, chap. B7. 1992. 190 p.
3–B8.*System and boundary conceptualization in ground-water flow simulation,* by T.E. Reilly: USGS–TWRI book 3, chap. B8. 2001. 29 p.

Section C. Sedimentation and Erosion Techniques

3–C1.*Fluvial sediment concepts,* by H.P. Guy: USGS–TWRI book 3, chap. C1. 1970. 55 p.
3–C2.*Field methods for measurement of fluvial sediment*, by T.K. Edwards and G.D. Glysson: USGS–TWRI book 3, chap. C2. 1999. 89 p.
3–C3.*Computation of fluvial-sediment discharge,* by George Porterfield: USGS–TWRI book 3, chap. C3. 1972. 66 p.

Book 4. Hydrologic Analysis and Interpretation

Section A. Statistical Analysis

4–A1.*Some statistical tools in hydrology*, by H.C. Riggs: USGS–TWRI book 4, chap. A1. 1968. 39 p.
4–A2.*Frequency curves,* by H.C. Riggs: USGS–TWRI book 4, chap. A2. 1968. 15 p.
4–A3.*Statistical methods in water resources*, by D.R. Helsel and R.M. Hirsch: USGS–TWRI book 4, chap. A3. 1991. Available only online at http://water.usgs.gov/pubs/twri/twri4a3/. (Accessed August 30, 2002.)

Section B. Surface Water

4–B1.*Low-flow investigations,* by H.C. Riggs: USGS–TWRI book 4, chap. B1. 1972. 18 p.
4–B2.*Storage analyses for water supply*, by H.C. Riggs and C.H. Hardison: USGS–TWRI book 4, chap. B2. 1973. 20 p.
4–B3.*Regional analyses of streamflow characteristics,* by H.C. Riggs: USGS–TWRI book 4, chap. B3. 1973. 15 p.

Section D. Interrelated Phases of the Hydrologic Cycle

4–D1.*Computation of rate and volume of stream depletion by wells*, by C.T. Jenkins: USGS–TWRI book 4, chap. D1. 1970. 17 p.

Book 5. Laboratory Analysis

Section A. Water Analysis

5–A1.*Methods for determination of inorganic substances in water and fluvial sediments,* by M.J. Fishman and L.C. Friedman, editors: USGS–TWRI book 5, chap. A1. 1989. 545 p.
5–A2.*Determination of minor elements in water by emission spectroscopy,* by P.R. Barnett and E.C. Mallory, Jr.: USGS–TWRI book 5, chap. A2. 1971. 31 p.
5–A3.*Methods for the determination of organic substances in water and fluvial sediments*, edited by R.L. Wershaw, M.J. Fishman, R.R. Grabbe, and L.E. Lowe: USGS–TWRI book 5, chap. A3. 1987. 80 p.

5–A4.*Methods for collection and analysis of aquatic biological and microbiological samples,* by L.J. Britton and P.E. Greeson, editors: USGS–TWRI book 5, chap. A4. 1989. 363 p.
5–A5.*Methods for determination of radioactive substances in water and fluvial sediments,* by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS–TWRI book 5, chap. A5. 1977. 95 p.
5–A6.*Quality assurance practices for the chemical and biological analyses of water and fluvial sediments,* by L.C. Friedman and D.E. Erdmann: USGS–TWRI book 5, chap. A6. 1982. 181 p.

Section C. Sediment Analysis

5–C1.*Laboratory theory and methods for sediment analysis*, by H.P. Guy: USGS–TWRI book 5, chap. C1. 1969. 58 p.

Book 6. Modeling Techniques

Section A. Ground Water

6–A1.*A modular three-dimensional finite-difference ground-water flow model*, by M.G. McDonald and A.W. Harbaugh: USGS–TWRI book 6, chap. A1. 1988. 586 p.
6–A2.*Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model,* by S.A. Leake and D.E. Prudic: USGS–TWRI book 6, chap. A2. 1991. 68 p.
6–A3.*A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 1: Model Description and User's Manual,* by L.J. Torak: USGS–TWRI book 6, chap. A3. 1993. 136 p.
6–A4.*A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions,* by R.L. Cooley: USGS–TWRI book 6, chap. A4. 1992. 108 p.
6–A5.*A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 3: Design philosophy and programming details,* by L.J. Torak: USGS–TWRI book 6, chap. A5. 1993. 243 p.
6–A6.*A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction*, by Eric D. Swain and Eliezer J. Wexler: USGS–TWRI book 6, chap. A6. 1996. 125 p.
6–A7.*User's guide to SEAWAT: A computer program for simulation of three-dimensional variable-density ground-water flow*, by Weixing Guo and Christian D. Langevin: USGS–TWRI book 6, chap. A7. 2002. 77 p.

Book 7. Automated Data Processing and Computations

Section C. Computer Programs

7–C1.*Finite difference model for aquifer simulation in two dimensions with results of numerical experiments,* by P.C. Trescott, G.F. Pinder, and S.P. Larson: USGS–TWRI book 7, chap. C1. 1976. 116 p.
7–C2.*Computer model of two-dimensional solute transport and dispersion in ground water*, by L.F. Konikow and J.D. Bredehoeft: USGS–TWRI book 7, chap. C2. 1978. 90 p.
7–C3.*A model for simulation of flow in singular and interconnected channels,* by R.W. Schaffranek, R.A. Baltzer, and D.E. Goldberg: USGS–TWRI book 7, chap. C3. 1981. 110 p.

Book 8. Instrumentation

Section A. Instruments for Measurement of Water Level

8–A1.*Methods of measuring water levels in deep wells,* by M.S. Garber and F.C. Koopman: USGS–TWRI book 8, chap. A1. 1968. 23 p.

8–A2.*Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS–TWRI book 8, chap. A2. 1983. 57 p.

Section B. Instruments for Measurement of Discharge

8–B2.*Calibration and maintenance of vertical-axis type current meters,* by G.F. Smoot and C.E. Novak: USGS–TWRI book 8, chap. B2. 1968. 15 p.

Book 9. Handbooks for Water-Resources Investigations

Section A. National Field Manual for the Collection of Water-Quality Data

9–A1.*National field manual for the collection of water-quality data: Preparations for water sampling*, by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A1. 1998. 47 p.
9–A2.*National field manual for the collection of water-quality data: Selection of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A2. 1998. 94 p.
9–A3.*National field manual for the collection of water-quality data: Cleaning of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A3. 1998. 75 p.
9–A4.*National field manual for the collection of water-quality data: Collection of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A4. 1999. 156 p.
9–A5.*National field manual for the collection of water-quality data: Processing of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A5. 1999, 149 p.
9–A6.*National field manual for the collection of water-quality data: Field measurements*, edited by F.D. Wilde and D.B. Radtke: USGS–TWRI book 9, chap. A6. 1998. Variously paginated.
9–A7.*National field manual for the collection of water-quality data: Biological indicators*, edited by D.N. Myers and F.D. Wilde: USGS–TWRI book 9, chap. A7. 1997 and 1999. Variously paginated.
9–A8.*National field manual for the collection of water-quality data: Bottom-material samples*, by D.B. Radtke: USGS–TWRI book 9, chap. A8. 1998. 48 p.
9–A9.*National field manual for the collection of water-quality data: Safety in field activities*, by S.L. Lane and R.G. Fay: USGS–TWRI book 9, chap. A9. 1998. 60 p.

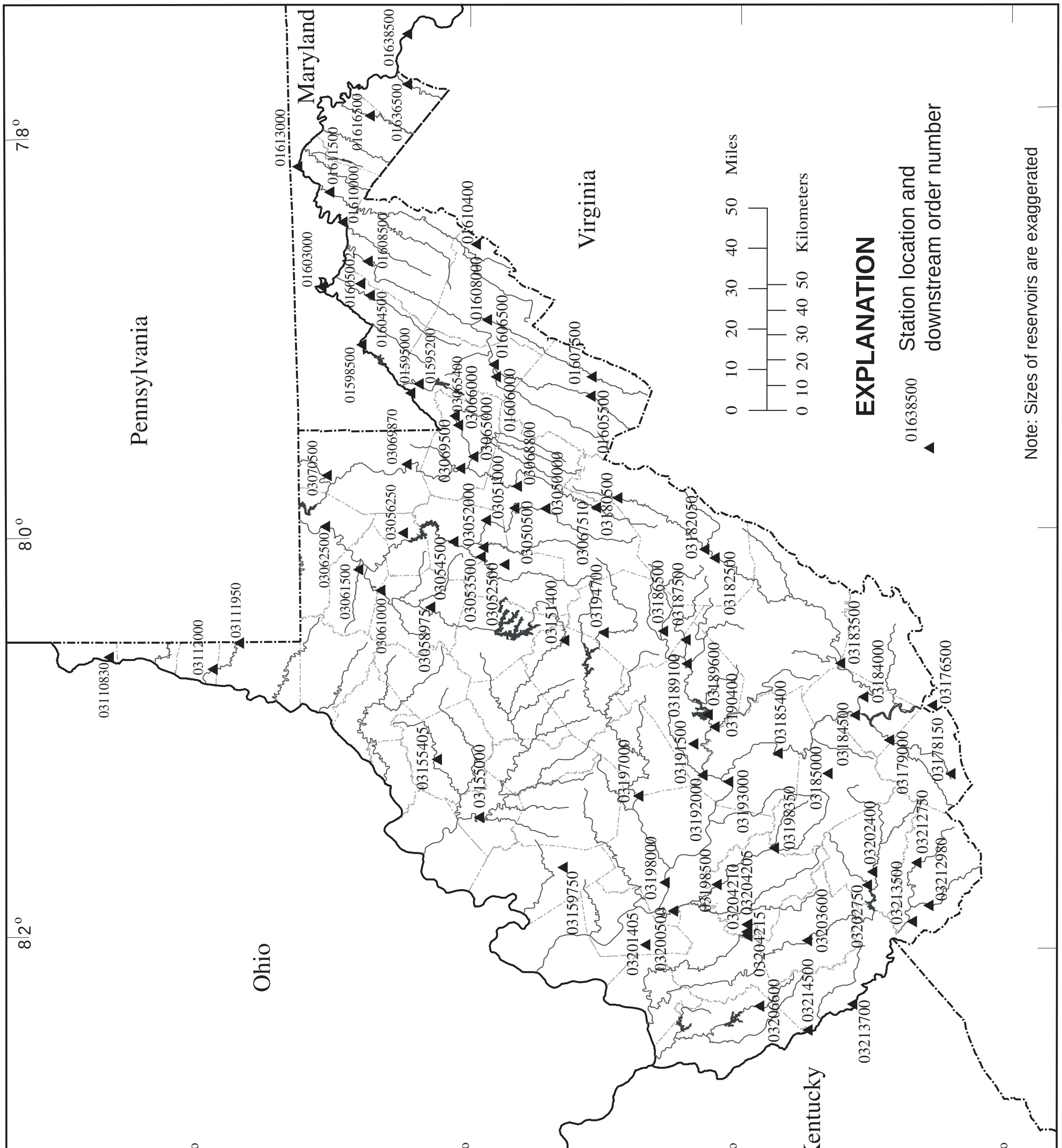


Figure 4. Map of West Virginia showing location of streamflow, detention reservoir, and water-quality stations.

SURFACE-WATER-DISCHARGE AND SURFACE-WATER-QUALITY RECORDS

Remark Codes

The following remark codes may appear with the water-quality data in this section:

PRINTED OUTPUT	REMARK
E	Value is estimated.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
M	Presence of material verified, but not quantified.
N	Presumptive evidence of presence of material.
U	Material specifically analyzed for, but not detected.
A	Value is an average.
V	Analyte was detected in both the environmental sample and the associated blanks.
S	Most probable value.

Dissolved Trace-Element Concentrations

NOTE.--Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter (µg/L) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Data above the µg/L level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols at some stations in water year 1994.

Water-Quality Control Data

NOTE.--See information related to quality-control data on pages 23-25.

01595000 NORTH BRANCH POTOMAC RIVER AT STEYER, MD

LOCATION.--Lat 39°18'06.8", long 79°18'24.8", Garrett County, Hydrologic Unit 02070002, on left bank 0.3 mi southeast of Steyer, 0.4 mi downstream from Steyer Run, 2.0 mi northeast of Gorman, and at mile 81.8.

DRAINAGE AREA.--73.1 mi^2.

PERIOD OF RECORD.--July 1956 to current year.

REVISED RECORDS.--WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,276.01 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except those for estimated daily discharges (missing record, ice effect), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 15, 1954, reached a stage of 13.0 ft, from floodmarks; discharge, 11,300 ft^3/s, from rating curve extended above 3,000 ft^3/s on basis of slope-area measurement at gage height of 10.30 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jul 8	1100	2,490	6.48	Sep 4	0700	4,620	8.46
Aug 12	1645	5,250	8.95	Sep 19	0445	*7,810	*10.78

Minimum discharge, 21 ft^3/s, Oct. 6, 7.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	214	151	503	88	189	257	106	423	98	77	611
2	29	165	138	704	85	227	384	184	269	96	65	1,010
3	41	133	119	461	87	205	276	130	314	91	55	578
4	40	128	112	344	212	188	230	166	334	95	61	2,360
5	28	138	134	276	205	307	304	302	260	94	63	783
6	25	374	127	242	167	814	250	280	210	132	61	451
7	27	293	99	e210	138	602	639	231	516	139	57	316
8	37	219	95	189	109	519	526	260	390	994	55	246
9	37	171	e94	201	124	845	781	525	291	634	134	201
10	39	147	e94	207	119	551	555	1,020	235	754	186	166
11	73	149	e96	165	112	396	741	866	199	457	165	143
12	90	350	101	e150	102	383	631	483	207	294	1,060	128
13	65	349	107	e140	111	896	427	457	451	249	443	122
14	65	236	181	130	99	1,110	330	320	372	187	217	117
15	62	190	144	e120	81	864	274	278	437	159	156	133
16	240	166	139	e110	71	921	235	244	356	127	126	139
17	219	342	e120	e100	e90	948	219	223	400	113	262	98
18	138	290	115	e98	e110	868	193	219	358	104	151	326
19	96	292	121	e94	e130	698	184	189	286	99	117	3,180
20	118	325	871	e93	e160	669	155	159	498	89	99	720
21	111	258	477	e93	202	548	171	165	503	81	93	408
22	96	229	356	e96	429	428	171	156	370	72	88	318
23	87	197	348	e100	973	332	156	140	280	71	83	501
24	78	183	270	e105	571	274	132	168	230	68	75	297
25	69	181	246	e105	351	234	121	129	194	62	69	243
26	156	174	198	e103	268	215	124	127	166	60	63	224
27	114	169	136	e100	221	194	120	121	145	55	640	227
28	109	149	144	e100	199	175	109	193	131	271	509	278
29	277	138	152	e95	---	153	105	169	118	182	262	233
30	430	151	140	e90	---	177	101	209	105	99	403	199
31	285	---	166	87	---	164	---	228	---	86	371	---
TOTAL	3,317	6,500	5,791	5,611	5,614	15,094	8,901	8,447	9,048	6,112	6,266	14,756
MEAN	107	217	187	181	200	487	297	272	302	197	202	492
MAX	430	374	871	704	973	1,110	781	1,020	516	994	1,060	3,180
MIN	25	128	94	87	71	153	101	106	105	55	55	98
CFSM	1.46	2.96	2.56	2.48	2.74	6.66	4.06	3.73	4.13	2.70	2.77	6.73
IN.	1.69	3.31	2.95	2.86	2.86	7.68	4.53	4.30	4.60	3.11	3.19	7.51

e Estimated

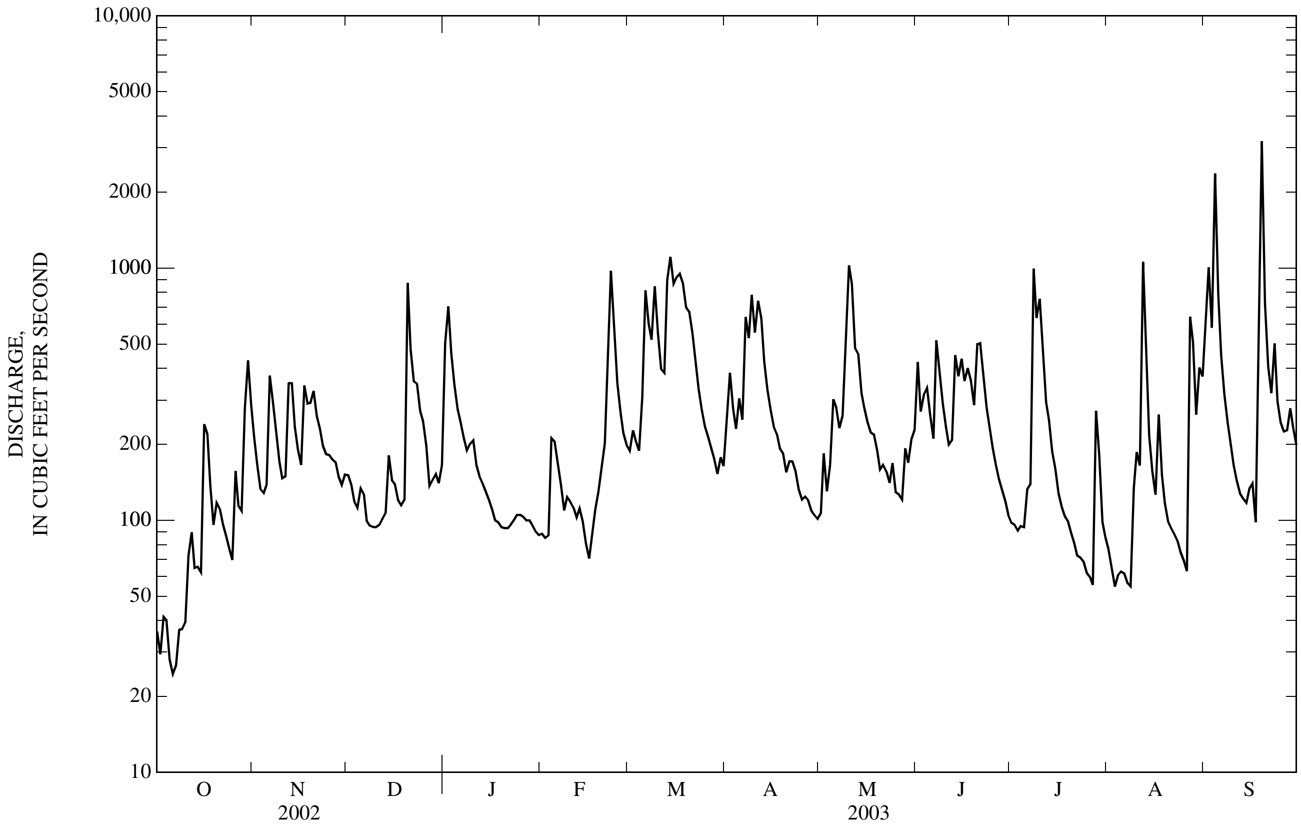
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2003, BY WATER YEAR (WY)

MEAN	70.7	135	219	231	263	342	277	201	122	103	80.7	64.2
MAX	316	588	527	569	604	885	573	540	442	340	355	492
(WY)	(1977)	(1986)	(1973)	(1974)	(1994)	(1963)	(1958)	(1996)	(1981)	(1978)	(1996)	(2003)
MIN	12.8	22.2	46.1	41.8	65.9	112	78.2	62.5	15.5	14.3	6.72	5.99
(WY)	(1964)	(2002)	(1999)	(1977)	(1993)	(1990)	(1995)	(1965)	(1965)	(1965)	(1965)	(1959)

01595000 NORTH BRANCH POTOMAC RIVER AT STEYER, MD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1956 - 2003	
ANNUAL TOTAL	65,173		95,457			
ANNUAL MEAN	179		262		175	
HIGHEST ANNUAL MEAN					297	1996
LOWEST ANNUAL MEAN					115	1959
HIGHEST DAILY MEAN	1,660	Mar 20	3,180	Sep 19	4,530	Feb 9, 1994
LOWEST DAILY MEAN	23	Sep 25	25	Oct 6	3.1	Sep 9, 1965
ANNUAL SEVEN-DAY MINIMUM	30	Sep 7	32	Oct 1	3.6	Sep 23, 1959
MAXIMUM PEAK FLOW			7,810	Sep 19	(a)11,500	Nov 5, 1985
MAXIMUM PEAK STAGE			10.78	Sep 19	13.14	Nov 5, 1985
INSTANTANEOUS LOW FLOW			21	(b)	2.7	Aug 18, 1999
ANNUAL RUNOFF (CFSM)	2.44		3.58		2.39	
ANNUAL RUNOFF (INCHES)	33.17		48.58		32.48	
10 PERCENT EXCEEDS	348		535		386	
50 PERCENT EXCEEDS	121		175		105	
90 PERCENT EXCEEDS	42		82		21	

a From rating curve extended above 3,000 ft^3/s on basis of slope-area measurement at gage height of 10.30 ft.
b Oct. 6, 7.



DAILY MEAN DISCHARGE - 2003 WATER YEAR

01595200 STONY RIVER NEAR MOUNT STORM, WV

LOCATION.--Lat 39°16'10", long 79°15'45", NAD27, Grant County, Hydrologic Unit 02070002, on left bank 100 ft downstream from highway bridge on U.S. Highway 50, 1.0 mi west of Mount Storm, and at mile 6.4.

DRAINAGE AREA.--48.7 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1961 to current year.

REVISED RECORDS.--WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 2,554.54 ft above NGVD of 1929.

REMARKS.--Water-discharge records good except those for periods of estimated daily discharges (ice effect, no gage-height record), which are poor. Flow regulated by Stony River Reservoir, 14.0 mi upstream from station until use of reservoir discontinued June 1987. Regulation since 1963 by Virginia Electric and Power Company dam (Mount Storm Lake), 4.0 mi upstream from station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,980 ft^3/s, Sept. 19, gage height, 10.33 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	132	35	327	e18	44	150	44	174	20	e25	70
2	10	105	31	539	21	62	218	44	148	16	24	92
3	9.9	59	74	435	25	88	217	54	157	16	23	90
4	9.0	43	85	228	202	62	174	103	209	14	35	526
5	6.3	39	68	170	196	145	193	182	241	13	53	383
6	5.0	181	40	150	218	556	161	164	209	13	57	313
7	4.7	290	26	94	208	483	427	142	285	14	52	250
8	9.0	275	20	61	110	405	440	204	285	e80	55	139
9	9.0	138	20	63	64	523	603	341	234	e200	39	38
10	8.7	83	17	71	50	309	453	813	174	453	54	35
11	12	68	17	90	e44	160	559	952	131	261	131	30
12	14	120	19	68	e40	188	390	110	122	145	162	29
13	10	149	58	50	e36	407	297	123	125	127	378	29
14	9.9	108	140	e40	e33	634	289	79	125	67	280	61
15	12	181	116	e34	e31	619	208	71	154	31	133	71
16	53	164	85	e28	e30	623	155	139	154	29	14	105
17	37	182	45	24	e29	637	134	233	221	23	33	196
18	29	128	45	e21	e27	638	137	250	250	20	51	369
19	43	109	51	e19	e26	608	179	239	199	20	57	2,190
20	38	177	320	e17	e80	631	161	200	248	19	42	403
21	35	186	372	e16	206	626	168	171	269	17	31	354
22	11	147	282	e14	254	557	177	155	205	14	21	255
23	8.8	112	154	e13	469	482	159	137	156	14	22	386
24	11	97	82	e12	552	421	138	151	88	13	20	336
25	12	102	90	e12	226	314	118	140	35	11	22	282
26	28	80	77	e11	61	178	97	124	31	11	19	253
27	88	63	66	e10	72	131	93	96	34	e20	173	189
28	120	44	55	e10	41	115	68	123	36	e40	129	175
29	138	29	43	e11	---	127	37	116	32	e35	72	162
30	172	28	128	e13	---	157	42	103	26	e32	73	142
31	148	---	191	e15	---	144	---	109	---	e28	81	---
TOTAL	1,112.3	3,619	2,852	2,666	3,369	11,074	6,642	5,912	4,757	1,816	2,361	7,953
MEAN	35.9	121	92.0	86.0	120	357	221	191	159	58.6	76.2	265
MAX	172	290	372	539	552	638	603	952	285	453	378	2,190
MIN	4.7	28	17	10	18	44	37	44	26	11	14	29

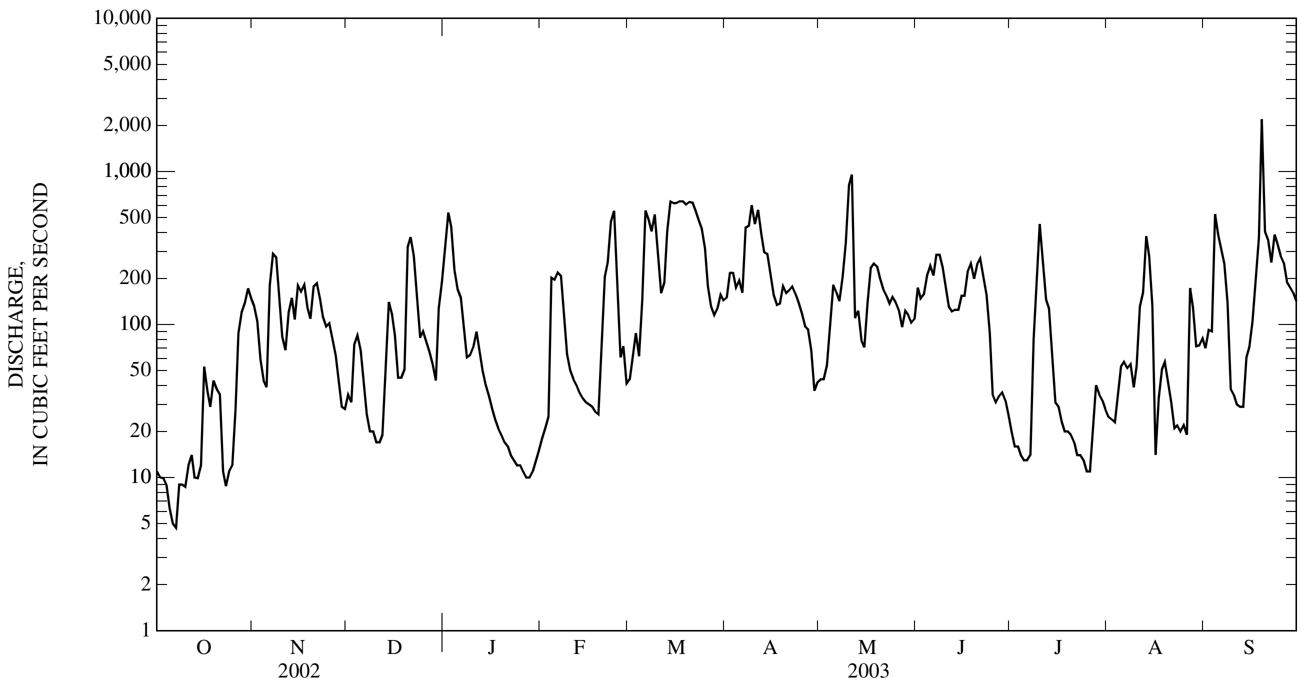
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	44.8	83.9	105	113	142	219	159	122	70.3	48.1	36.0	40.4
MAX	234	669	301	267	361	537	371	271	237	205	200	314
(WY)	(1977)	(1986)	(1973)	(1996)	(1994)	(1963)	(1987)	(1988)	(1981)	(1978)	(1996)	(1996)
MIN	3.36	5.53	8.36	20.9	21.3	46.9	51.8	28.3	9.91	4.36	3.28	3.89
(WY)	(1992)	(1999)	(1999)	(1981)	(1978)	(1990)	(1995)	(1964)	(1964)	(1968)	(1999)	(1985)

01595200 STONY RIVER NEAR MOUNT STORM, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1962 - 2003	
ANNUAL TOTAL	30,419.1		54,133.3			
ANNUAL MEAN	83.3		148		98.3	
HIGHEST ANNUAL MEAN					166	1996
LOWEST ANNUAL MEAN					42.0	1964
HIGHEST DAILY MEAN	1,010	Mar 20	2,190	Sep 19	9,880	Nov 5, 1985
LOWEST DAILY MEAN	3.5	Sep 8	4.7	Oct 7	1.3	Aug 28, 1988
ANNUAL SEVEN-DAY MINIMUM	5.0	Sep 7	7.4	Oct 4	1.7	Aug 28, 1988
MAXIMUM PEAK FLOW			4,980	Sep 19	(a)14,000	Nov 5, 1985
MAXIMUM PEAK STAGE			10.33	Sep 19	(b)16.41	Nov 5, 1985
INSTANTANEOUS LOW FLOW			4.6	Oct 7	1.3	(c)
10 PERCENT EXCEEDS	188		370		231	
50 PERCENT EXCEEDS	42		94		48	
90 PERCENT EXCEEDS	7.6		14		8.3	

a From rating curve extended above 7,500 ft^3/s on basis of slope-area measurement of peak flow.
b From floodmarks.
c Aug. 22, 23, 28, 29, 1988.
e Estimated.



01595200 STONY RIVER NEAR MOUNT STORM, WV—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: December 1961 to March 1974, September 1974 to September 1995, October 1996 to current year.

INSTRUMENTATION.--Temperature recorder (continuous ethyl alcohol-actuated thermograph) December 1961 to October 2001. Satellite telemetry installed Oct. 22, 2001.

REMARKS.--Upstream reservoir regulation defined on the discharge manuscript. No temperature record July 5-7, 9, 26-31, Aug. 1, due to equipment malfunction.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 31.3°C, Aug. 3, 2002, Aug. 14, 2003; minimum, -0.5°C, Jan. 16-20, 1999.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 31.3°C, Aug. 14, 2003; minimum, 0.1°C, Jan. 12-18, 20-28, Mar. 3, 4.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.5	13.2	1.2	7.7	0.8	5.6	10.2	19.1	16.3	22.9	---	23.2
2	17.9	11.1	1.6	9.6	2.2	4.0	14.2	19.1	19.4	20.1	26.0	21.1
3	19.2	9.8	4.0	9.7	2.6	4.2	15.4	17.4	17.4	21.9	24.6	22.0
4	19.5	9.3	5.4	7.7	5.1	4.3	13.9	15.6	18.7	23.9	24.6	24.2
5	20.0	8.3	4.3	6.7	5.0	5.3	13.9	13.3	20.4	---	24.9	25.4
6	15.7	12.0	4.0	6.7	7.5	8.5	12.2	17.0	22.2	---	25.2	26.8
7	15.2	14.3	2.1	4.2	7.8	9.7	10.3	17.7	20.1	---	23.7	26.8
8	12.5	16.0	2.8	3.0	4.9	10.6	11.9	19.5	21.6	21.9	25.4	24.6
9	12.1	14.6	1.2	4.3	3.2	8.0	10.1	18.0	21.9	---	24.8	20.5
10	12.6	14.6	1.2	3.3	3.3	7.1	10.2	20.1	21.4	29.0	23.9	18.9
11	13.6	14.4	1.2	1.7	4.0	6.6	10.2	21.2	22.6	27.8	26.6	18.2
12	15.6	12.1	2.3	1.8	5.9	8.1	11.9	14.7	21.8	25.7	28.9	16.9
13	14.6	10.8	5.5	1.1	6.0	7.1	13.9	11.6	20.3	25.0	31.2	17.0
14	12.4	10.9	7.0	0.7	7.5	10.1	15.1	14.8	22.5	24.5	31.3	21.9
15	10.2	14.6	7.1	0.8	7.0	11.7	16.3	12.5	20.4	24.4	29.4	21.1
16	10.9	14.6	6.8	0.4	6.6	12.2	16.0	15.8	21.2	24.2	26.5	21.8
17	10.6	12.0	3.2	0.3	6.9	12.5	13.3	16.0	20.5	24.1	24.2	25.8
18	9.7	9.1	4.4	1.0	5.2	11.6	10.6	16.6	23.6	20.9	24.0	24.3
19	13.2	8.9	5.9	0.5	6.6	11.4	15.9	19.9	23.4	24.0	25.6	24.2
20	13.1	12.7	7.4	0.2	9.1	10.4	16.3	20.4	21.4	23.6	25.6	23.0
21	13.1	13.5	9.3	0.2	9.1	12.4	15.9	18.8	18.6	24.2	25.8	24.1
22	11.6	12.4	9.1	0.2	8.0	12.4	14.4	16.8	22.6	24.3	26.4	23.2
23	11.1	8.1	6.9	0.2	6.0	12.2	14.8	16.3	23.0	22.3	24.9	22.3
24	8.8	9.3	3.5	0.2	9.2	13.6	15.0	19.2	22.7	23.0	23.3	23.6
25	9.0	10.9	3.0	0.2	6.8	14.7	14.2	19.8	22.3	22.3	24.2	22.6
26	10.4	9.9	2.6	0.4	2.6	11.3	13.7	18.3	22.7	---	25.2	22.9
27	16.1	7.3	2.6	0.2	2.2	12.8	16.0	17.1	20.1	---	21.1	22.8
28	16.6	5.0	2.3	0.4	3.2	13.7	17.5	16.6	21.0	---	23.9	20.4
29	15.2	3.9	3.1	0.3	---	13.2	14.8	17.3	22.9	---	23.6	18.4
30	13.2	4.6	8.8	0.4	---	10.5	16.0	19.4	22.4	---	22.9	18.4
31	12.6	---	9.6	0.4	---	8.2	---	17.8	---	---	22.1	---
MEAN	13.7	10.9	4.5	2.4	5.5	9.8	13.8	17.3	21.2	---	---	22.2
MAX	20.0	16.0	9.6	9.7	9.2	14.7	17.5	21.2	23.6	---	---	26.8
MIN	8.8	3.9	1.2	0.2	0.8	4.0	10.1	11.6	16.3	---	---	16.9

01595200 STONY RIVER NEAR MOUNT STORM, WV—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MINIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.5	10.9	0.2	5.1	0.3	2.4	6.3	13.2	13.5	18.1	---	21.1
2	14.5	9.7	0.2	6.3	0.6	1.5	7.8	14.6	13.8	18.1	20.1	19.8
3	15.9	8.3	0.3	7.7	0.8	0.1	10.7	14.1	15.9	17.5	21.3	19.7
4	15.8	8.3	3.7	5.6	0.7	0.1	11.4	12.8	16.2	18.0	20.8	18.8
5	15.7	6.3	1.4	5.6	3.5	3.2	10.0	11.3	17.7	---	21.5	24.2
6	12.0	6.5	1.1	4.2	4.3	3.3	8.5	12.8	18.0	---	21.5	23.9
7	12.2	12.0	0.4	2.0	4.9	6.8	7.7	14.6	17.0	---	22.1	23.7
8	9.4	14.2	1.1	2.0	2.2	7.2	10.1	16.0	19.2	19.0	22.1	20.5
9	9.3	12.9	0.2	2.8	1.5	5.7	8.1	15.6	19.3	---	21.8	17.0
10	11.5	12.8	0.2	0.8	1.2	1.9	9.2	15.9	19.0	25.4	20.2	15.7
11	12.4	12.1	0.5	0.2	0.9	1.5	7.4	14.7	19.1	23.9	23.0	13.8
12	13.1	9.2	1.2	0.1	4.0	4.6	8.4	10.3	19.2	22.9	25.3	15.3
13	12.4	9.4	1.7	0.1	4.4	4.4	8.3	9.5	19.1	21.7	26.6	15.4
14	9.3	9.3	5.5	0.1	5.0	4.6	9.5	8.7	18.7	21.5	28.7	16.9
15	8.1	9.9	6.2	0.1	5.8	8.5	11.4	11.1	18.9	19.2	26.0	18.3
16	9.4	12.0	3.2	0.1	3.6	8.9	11.5	11.2	19.1	21.1	23.7	16.9
17	8.7	9.1	1.2	0.1	4.3	9.4	10.6	15.5	18.1	18.5	21.7	19.5
18	7.6	7.8	2.8	0.1	4.1	10.3	9.3	15.6	19.7	18.4	20.3	17.7
19	8.5	7.7	3.7	0.2	3.5	10.4	9.8	16.0	21.4	18.5	21.5	17.3
20	11.9	7.7	4.3	0.1	6.6	9.4	12.8	16.6	13.6	16.7	21.6	19.7
21	10.8	12.1	7.4	0.1	6.9	9.5	13.4	16.3	16.6	18.4	21.7	22.1
22	8.5	8.1	6.9	0.1	4.8	10.4	11.8	15.9	18.6	20.4	22.6	20.4
23	7.4	7.3	3.5	0.1	4.8	10.5	10.5	15.7	18.4	19.3	21.2	20.1
24	7.9	7.6	2.8	0.1	6.0	10.1	9.5	15.3	18.5	18.2	18.2	20.7
25	7.6	8.4	1.4	0.1	2.6	10.4	11.3	15.3	16.2	16.5	18.8	21.8
26	8.6	7.3	1.4	0.1	0.7	8.8	12.5	16.9	17.1	---	20.8	21.8
27	9.4	5.0	0.9	0.1	0.7	7.9	10.6	15.0	17.4	---	19.4	20.4
28	15.2	3.0	1.2	0.1	1.0	9.3	10.6	14.5	15.3	---	19.5	18.4
29	10.4	2.2	1.8	0.2	---	10.5	12.0	15.2	17.5	---	21.0	17.2
30	11.4	1.0	1.1	0.2	---	6.4	10.5	15.3	17.8	---	21.2	16.4
31	12.0	---	7.7	0.2	---	6.2	---	14.9	---	---	20.6	---
MEAN	11.0	8.6	2.4	1.4	3.2	6.6	10.1	14.2	17.7	---	---	19.1
MAX	15.9	14.2	7.7	7.7	6.9	10.5	13.4	16.9	21.4	---	---	24.2
MIN	7.4	1.0	0.2	0.1	0.3	0.1	6.3	8.7	13.5	---	---	13.8

01598500 NORTH BRANCH POTOMAC RIVER AT LUKE, MD

LOCATION.--Lat 39°28'45.1", long 79°03'54.0", Mineral County, W. Va., Hydrologic Unit 02070002, on right bank 0.2 mi downstream from Savage River, 0.5 mi northwest of Luke, and at mile 53.3.

DRAINAGE AREA.--406 mi^2.

PERIOD OF RECORD.--June 1899 to July 1906 (published as "at Piedmont, W. Va."), October 1949 to current year.

REVISED RECORDS.--WSP 192: 1899-1904. WSP 1432: 1905-6, drainage area at former site. WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 944.22 ft above National Geodetic Vertical Datum of 1929. June 27, 1899, to July 15, 1906, nonrecording gage at bridge 1.1 mi downstream at datum about 35 ft lower.

REMARKS.--No estimated daily discharges. Records good. Flow regulated prior to July 1981 by Stony River Reservoir 45 mi upstream from station, since December 1950 by Savage River Reservoir, 5 mi upstream from station (see station 01597500), and since July 1981 by Jennings Randolph Lake, 9 mi upstream from station. Some regulation at low flow by West Virginia Pulp and Paper Company at site used 1899-1906. U.S. Army Corps of Engineers satellite collection platform at station. Upper Potomac River Commission gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,610 ft^3/s, May 11, gage height, 9.49 ft; minimum discharge, 90 ft^3/s, Oct. 23.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	165	283	611	1,800	368	1,410	525	406	2,860	424	341	872
2	165	279	581	3,150	368	1,410	428	404	2,520	412	340	2,320
3	165	263	575	3,050	368	1,390	416	402	2,500	412	374	2,060
4	165	336	566	2,760	369	1,380	465	637	3,060	407	461	4,550
5	163	431	574	2,410	365	1,420	494	1,320	2,360	380	443	4,000
6	162	504	571	1,790	360	2,070	716	1,310	1,900	602	430	2,010
7	162	448	566	1,300	364	3,130	2,140	754	2,430	481	406	1,780
8	162	814	567	1,120	359	3,630	3,160	1,400	2,880	1,120	326	1,060
9	162	1,200	535	981	357	3,760	3,190	3,530	2,460	2,230	323	427
10	165	1,200	496	931	360	3,480	3,590	5,370	1,850	2,680	324	422
11	184	1,190	502	915	360	3,050	3,980	8,000	1,370	2,470	312	407
12	179	1,390	475	835	358	2,980	3,010	4,070	1,260	2,300	323	400
13	169	1,650	541	763	358	3,140	2,510	2,550	2,790	1,830	410	799
14	164	1,330	658	757	386	3,240	2,710	2,160	2,590	1,140	566	1,070
15	164	1,320	715	728	420	3,190	2,320	1,690	2,550	768	567	1,080
16	199	1,320	787	648	427	3,250	1,240	1,590	2,370	633	797	1,070
17	185	1,580	707	550	674	3,470	922	1,480	2,180	566	967	1,060
18	171	1,760	629	515	424	3,580	835	1,690	2,180	456	603	1,110
19	166	1,580	623	489	523	3,530	827	1,670	2,130	408	360	4,140
20	165	1,570	1,350	444	649	3,610	758	1,470	2,240	401	358	7,480
21	165	1,520	2,290	440	658	3,610	733	1,380	2,280	395	349	7,680
22	164	1,330	2,320	430	710	3,370	861	1,110	2,050	373	311	7,610
23	155	1,170	2,160	412	1,130	2,790	763	1,030	1,780	348	278	5,410
24	171	1,010	1,780	411	1,920	1,960	629	1,020	1,240	346	276	3,170
25	175	794	1,420	404	2,220	1,360	629	849	910	341	281	2,250
26	190	741	1,090	402	1,880	857	775	690	715	341	289	1,440
27	173	671	875	385	1,510	602	698	705	569	341	321	1,510
28	169	614	868	368	1,410	592	416	1,100	562	614	512	2,120
29	241	610	728	368	---	585	404	1,160	511	786	635	1,800
30	270	613	631	368	---	588	405	1,000	441	348	709	1,010
31	245	---	636	368	---	579	---	1,410	---	342	763	---
TOTAL	5,500	29,521	27,427	30,292	19,655	73,013	40,549	53,357	57,538	24,695	13,755	72,117
MEAN	177	984	885	977	702	2,355	1,352	1,721	1,918	797	444	2,404
MAX	270	1,760	2,320	3,150	2,220	3,760	3,980	8,000	3,060	2,680	967	7,680
MIN	155	263	475	368	357	579	404	402	441	341	276	400
CFSM	0.44	2.42	2.18	2.41	1.73	5.80	3.33	4.24	4.72	1.96	1.09	5.92
IN.	0.50	2.70	2.51	2.78	1.80	6.69	3.72	4.89	5.27	2.26	1.26	6.61

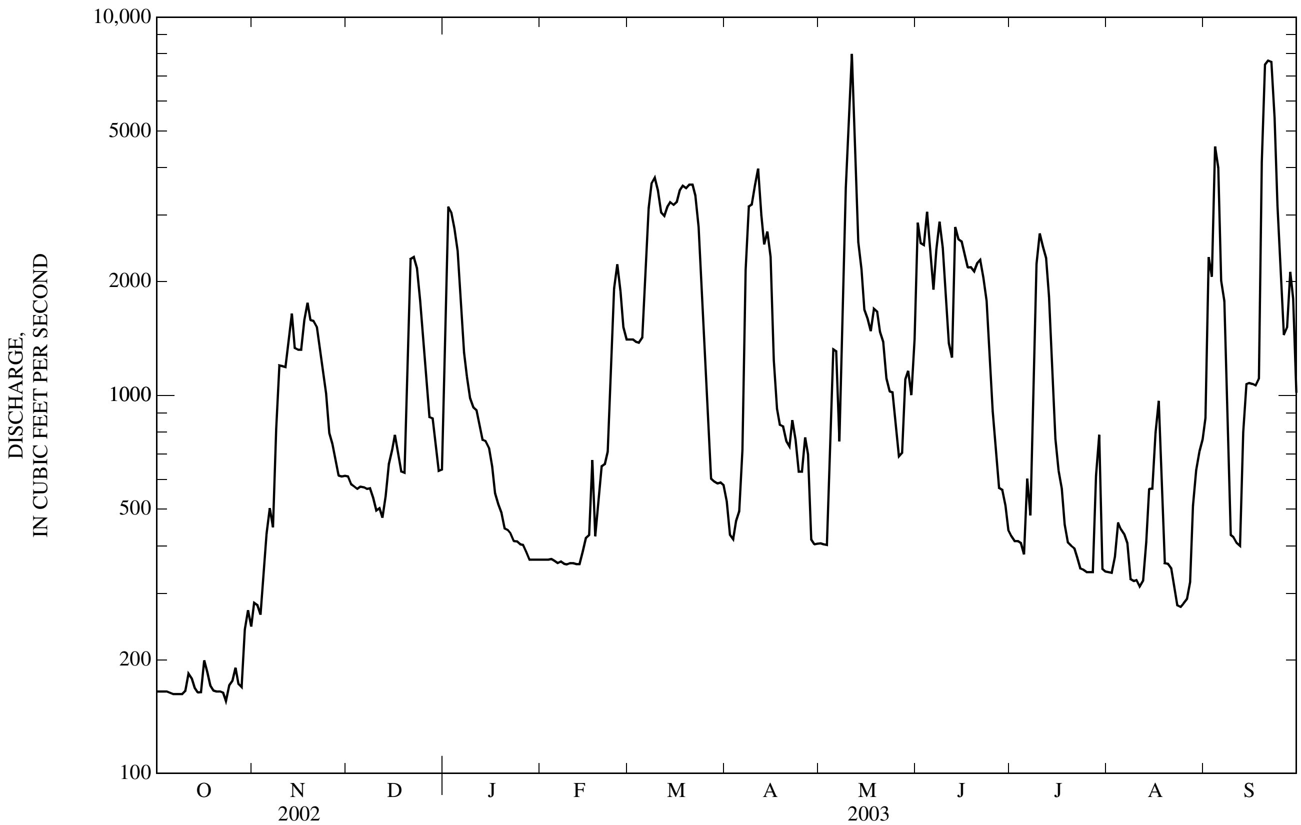
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1899 - 1906, 1950 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	330	455	797	892	1,074	1,535	1,208	916	555	358	327	321
MAX	1,423	2,806	2,536	2,368	2,487	3,414	3,098	2,484	1,918	1,294	1,525	2,404
(WY)	(1955)	(1986)	(1973)	(1996)	(1994)	(1963)	(1993)	(1996)	(2003)	(1990)	(1996)	(2003)
MIN	27.6	33.5	123	166	99.8	467	278	165	108	91.4	37.0	17.1
(WY)	(1905)	(1905)	(1999)	(1977)	(1905)	(1988)	(1995)	(1982)	(1969)	(1953)	(1904)	(1904)

01598500 NORTH BRANCH POTOMAC RIVER AT LUKE, MD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1899 - 2003	
ANNUAL TOTAL	230,932		447,419			
ANNUAL MEAN	633		1,226		731	
ANNUAL MEAN‡	642		1253		732	
HIGHEST ANNUAL MEAN					1,342	1996
LOWEST ANNUAL MEAN					412	1969
HIGHEST DAILY MEAN	3,790	Apr 29	8,000	May 11	18,400	Aug 18, 1955
LOWEST DAILY MEAN	155	Oct 23	155	Oct 23	6.0	Sep 4, 1904
ANNUAL SEVEN-DAY MINIMUM	163	Oct 3	163	Oct 3	11	Aug 29, 1904
MAXIMUM PEAK FLOW			9,610	May 11	(a)39,400	Oct 15, 1954
MAXIMUM PEAK STAGE			9.49	May 11	17.15	Oct 15, 1954
INSTANTANEOUS LOW FLOW			90	Oct 23	6.0	Sep 4, 1904
ANNUAL RUNOFF (CFSM)	1.56		3.02		1.80	
ANNUAL RUNOFF (CFSM)‡	1.58		3.08		1.80	
ANNUAL RUNOFF (INCHES)	21.16		41.00		24.46	
ANNUAL RUNOFF (INCHES)‡	21.46		41.89		24.50	
10 PERCENT EXCEEDS	1,570		2,920		1,650	
50 PERCENT EXCEEDS	336		728		412	
90 PERCENT EXCEEDS	175		282		115	

‡ Adjusted for change in reservoir contents since October 1949.
a From rating curve extended above 25,000 ft^3/s on basis of slope-area measurement of peak flow.



DAILY MEAN DISCHARGE - 2003 WATER YEAR

01603000 NORTH BRANCH POTOMAC RIVER NEAR CUMBERLAND, MD

LOCATION.--Lat 39°37'18.5", long 78°46'24.3", Allegany County, Hydrologic Unit 02070002, on left bank at downstream side of Wiley Ford Bridge, 2.0 mi south of Cumberland, 2.1 mi downstream from Wills Creek, and at mile 19.6.

DRAINAGE AREA.--877 mi^2.

PERIOD OF RECORD.--May 1929 to current year. Gage-height records collected at various sites about 2.0 mi upstream from September 1901 to December 1932 and thereafter at present site, are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 726: Drainage area. WSP 781: 1932(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 585.22 ft above National Geodetic Vertical Datum of 1929. Prior to June 18, 1929, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Prior to July 1981 some regulation at low flow by Stony River Reservoir, 79 mi upstream from station. Low-flow regulation since December 1950 by Savage River Reservoir, 39 mi upstream from station (see station 01597500). Flow regulated by Jennings Randolph Lake, 43 mi upstream from station since July 1981. Prior to July 1957, small amount of inflow from industrial wastes and sewage from city of Cumberland from water diverted from Evitts Creek, mouth of which is downstream from station. Diversion to Chesapeake and Ohio Canal prior to 1935. National Weather Service gage height telemeter at station. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 29.2 ft, June 1, 1889, discharge, about 89,000 ft^3/s. Flood of Mar. 29, 1924, reached a stage of 28.4 ft, discharge, about 82,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16,300 ft^3/s, Sept. 19, gage height, 13.81 ft; minimum discharge, 202 ft^3/s, Oct. 8-10.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	247	900	976	4,940	e590	2,090	1,380	846	4,950	777	528	886
2	236	776	901	10,300	e585	2,080	1,410	824	4,340	743	518	2,150
3	230	669	875	6,770	e585	2,080	1,280	790	5,550	729	612	2,760
4	225	599	784	5,330	e590	2,000	1,340	915	9,530	703	845	3,690
5	222	708	852	4,250	e595	2,260	1,780	1,610	5,660	672	767	5,490
6	218	1,680	848	3,480	e580	5,930	1,980	2,810	3,960	827	757	2,600
7	210	1,480	793	2,620	e580	6,380	3,570	1,670	5,430	823	661	2,100
8	206	1,190	850	2,250	e575	6,080	5,860	3,010	5,990	1,080	561	1,910
9	202	1,760	818	2,150	e560	7,470	5,430	5,780	5,010	2,390	589	699
10	218	1,710	737	2,020	e550	6,940	6,300	10,700	3,680	3,460	565	638
11	357	1,670	819	1,880	e540	5,290	7,160	12,200	2,850	3,280	590	607
12	472	1,900	983	1,740	e540	4,790	6,310	7,940	2,360	2,770	551	577
13	382	2,900	1,100	1,530	539	5,450	4,850	4,630	4,140	2,640	592	685
14	310	2,290	1,880	1,470	580	7,450	4,150	4,070	4,140	1,710	703	1,300
15	280	2,060	1,980	1,400	650	6,490	4,100	3,110	3,610	1,380	735	1,320
16	524	1,960	1,930	1,170	598	6,450	2,680	4,600	3,430	988	745	1,280
17	693	2,620	1,750	1,150	487	7,160	2,080	4,300	3,080	885	1,110	1,240
18	465	3,030	1,470	917	718	7,260	1,840	4,050	3,430	746	1,060	1,280
19	377	2,630	1,370	e860	722	6,470	1,770	3,890	3,110	658	534	9,780
20	337	2,460	1,880	e820	945	7,320	1,670	3,100	3,470	615	506	9,920
21	316	2,310	3,820	e770	936	8,650	1,510	2,950	4,100	592	493	8,490
22	293	2,130	3,700	732	1,400	6,610	1,680	2,390	3,580	581	472	7,900
23	275	1,830	3,410	703	2,590	5,190	1,580	2,140	3,020	589	418	8,650
24	258	1,700	2,980	e690	3,270	3,940	1,310	2,250	2,430	610	396	4,810
25	283	1,390	2,510	e670	3,460	2,880	1,230	1,880	1,810	545	387	3,530
26	503	1,210	2,080	e655	3,010	2,340	1,350	2,610	1,530	521	416	2,550
27	512	1,180	1,670	e640	2,460	1,770	1,280	2,260	1,240	508	507	2,940
28	420	1,020	1,530	e630	2,190	1,570	1,090	2,660	1,090	530	589	5,370
29	569	984	1,460	e615	---	1,470	874	2,630	1,010	1,300	771	3,520
30	1,810	980	1,250	e610	---	1,480	845	2,260	846	565	768	2,570
31	1,170	---	1,230	604	---	1,430	---	2,720	---	522	872	---
TOTAL	12,820	49,726	49,236	64,366	31,425	144,770	79,689	107,595	108,376	34,739	19,618	101,242
MEAN	414	1,658	1,588	2,076	1,122	4,670	2,656	3,471	3,613	1,121	633	3,375
MAX	1,810	3,030	3,820	10,300	3,460	8,650	7,160	12,200	9,530	3,460	1,110	9,920
MIN	202	599	737	604	487	1,430	845	790	846	508	387	577
CFSM	0.47	1.89	1.81	2.37	1.28	5.32	3.03	3.96	4.12	1.28	0.72	3.85
IN.	0.54	2.11	2.09	2.73	1.33	6.14	3.38	4.56	4.60	1.47	0.83	4.29

e Estimated

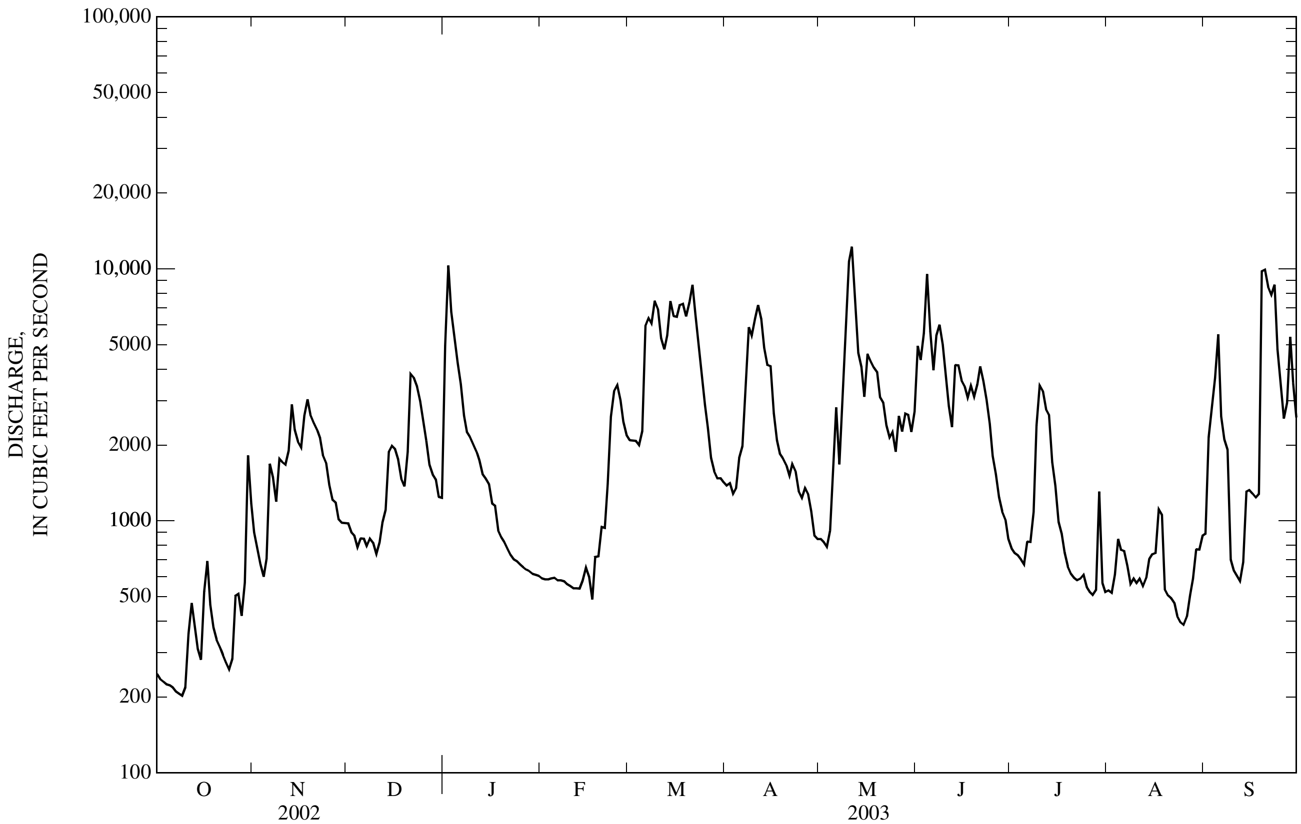
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2003, BY WATER YEAR (WY)

MEAN	588	782	1,278	1,552	1,978	2,890	2,358	1,754	943	541	470	480
MAX	3,791	5,350	4,652	5,115	4,410	8,763	5,866	4,070	3,613	2,270	2,152	4,117
(WY)	(1943)	(1986)	(1973)	(1937)	(1998)	(1936)	(1993)	(1996)	(2003)	(1989)	(1996)	(1996)
MIN	28.9	44.8	134	269	393	789	705	374	209	89.7	57.7	40.3
(WY)	(1931)	(1931)	(1931)	(1940)	(1934)	(1990)	(1995)	(1934)	(1965)	(1930)	(1930)	(1932)

01603000 NORTH BRANCH POTOMAC RIVER NEAR CUMBERLAND, MD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1929 - 2003	
ANNUAL TOTAL	395,611		803,602			
ANNUAL MEAN	1,084		2,202		1,299	
ANNUAL MEAN‡	1,093		2,228		1,299	
HIGHEST ANNUAL MEAN					2,390	1996
LOWEST ANNUAL MEAN					632	1969
HIGHEST DAILY MEAN	7,030	Apr 29	12,200	May 11	47,400	Mar 18, 1936
LOWEST DAILY MEAN	202	Oct 9	202	Oct 9	13	(a)
ANNUAL SEVEN-DAY MINIMUM	214	Oct 4	214	Oct 4	16	Sep 20, 1932
MAXIMUM PEAK FLOW			16,300	Sep 19	(b)88,200	Mar 17, 1936
MAXIMUM PEAK STAGE			13.81	Sep 19	29.10	Mar 17, 1936
INSTANTANEOUS LOW FLOW			202	(c)	12	Sep 22, 1932
ANNUAL RUNOFF (CFSM)	1.24		2.51		1.48	
ANNUAL RUNOFF (CFSM)‡	1.25		2.54		1.48	
ANNUAL RUNOFF (INCHES)	16.78		34.09		20.13	
ANNUAL RUNOFF (INCHES)‡	16.92		34.51		20.16	
10 PERCENT EXCEEDS	2,630		5,430		3,020	
50 PERCENT EXCEEDS	521		1,410		680	
90 PERCENT EXCEEDS	307		516		179	

‡ Adjusted for change in reservoir contents since October 1949.
a Sept. 21-24, 1932.
b From rating curve extended above 33,000 ft^3/s on basis of slope-area measurement of peak flow.
c Oct. 8-10.



DAILY MEAN DISCHARGE - 2003 WATER YEAR

01604500 PATTERSON CREEK NEAR HEADSVILLE, WV

LOCATION.--Lat 39°26'35", long 78°49'20", NAD27, Mineral County, Hydrologic Unit 02070002, on right bank 100 ft downstream from Hazel Run, 1.0 mi downstream from Cabin Run, 4.0 mi northeast of Headsville, 8.0 mi east of Keyser, and at mile 13.0.

DRAINAGE AREA.--211 mi^2.

PERIOD OF RECORD.--August 1938 to current year.

REVISED RECORDS.--WSP 951: 1939-40. WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 624.90 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 11, 1946, nonrecording gage on bridge 1.0 mi upstream at datum 6.14 ft higher. Oct. 11-23, 1946, nonrecording gage at present site and datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor. The flow from 115 mi^2 upstream from station is partially controlled, but not diverted, by several floodwater detention reservoirs with a total combined detention capacity of 19,887 acre-ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,510 ft^3/s, Sept. 19, gage height, 10.22 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	348	105	793	e52	344	257	140	425	117	81	56
2	26	264	98	1,360	e58	346	249	138	277	105	71	108
3	22	206	91	930	69	397	233	128	333	98	73	95
4	19	160	81	821	76	400	217	155	508	91	178	522
5	17	143	75	635	85	553	233	269	507	82	109	498
6	14	443	88	553	89	2,010	225	423	426	78	215	362
7	13	365	79	516	87	1,670	621	359	794	73	153	258
8	12	274	88	482	81	1,330	844	414	846	151	133	201
9	10	223	103	434	77	2,320	1,240	767	738	259	108	156
10	11	181	118	387	75	1,970	1,150	1,500	509	455	107	122
11	24	148	152	336	73	1,040	1,440	1,450	459	380	155	96
12	46	211	321	282	71	834	1,380	900	407	244	175	78
13	46	439	530	246	65	997	907	702	631	201	222	81
14	41	343	919	221	e56	1,150	667	540	526	180	226	83
15	34	267	717	192	e47	818	540	494	437	379	202	76
16	113	229	570	179	e40	647	504	674	353	221	174	71
17	209	461	526	155	32	565	484	568	344	158	151	64
18	142	511	469	e130	e38	526	441	510	472	126	132	69
19	99	424	399	115	e50	493	430	490	424	107	108	3,860
20	73	346	379	e100	e74	812	381	459	670	88	86	1,940
21	55	300	349	e90	100	1,200	350	414	873	75	68	1,020
22	44	303	308	e84	386	758	340	362	583	66	57	659
23	37	262	279	75	e1,000	568	302	319	490	60	49	928
24	32	228	253	e70	607	503	263	291	410	58	44	658
25	30	195	247	e67	525	479	239	245	336	54	40	578
26	86	165	227	e64	490	445	234	226	277	48	37	521
27	100	150	199	61	434	402	215	207	231	45	38	483
28	87	133	179	60	386	341	188	274	194	54	52	549
29	173	119	167	e58	---	295	166	259	160	159	60	420
30	597	110	177	e56	---	275	151	220	137	129	57	328
31	465	---	182	e54	---	260	---	333	---	93	55	---
TOTAL	2,709	7,951	8,475	9,606	5,223	24,748	14,891	14,230	13,777	4,434	3,416	14,940
MEAN	87.4	265	273	310	187	798	496	459	459	143	110	498
MAX	597	511	919	1,360	1,000	2,320	1,440	1,500	873	455	226	3,860
MIN	10	110	75	54	32	260	151	128	137	45	37	56
CFSM	0.41	1.26	1.30	1.47	0.88	3.78	2.35	2.18	2.18	0.68	0.52	2.36
IN.	0.48	1.40	1.49	1.69	0.92	4.36	2.63	2.51	2.43	0.78	0.60	2.63

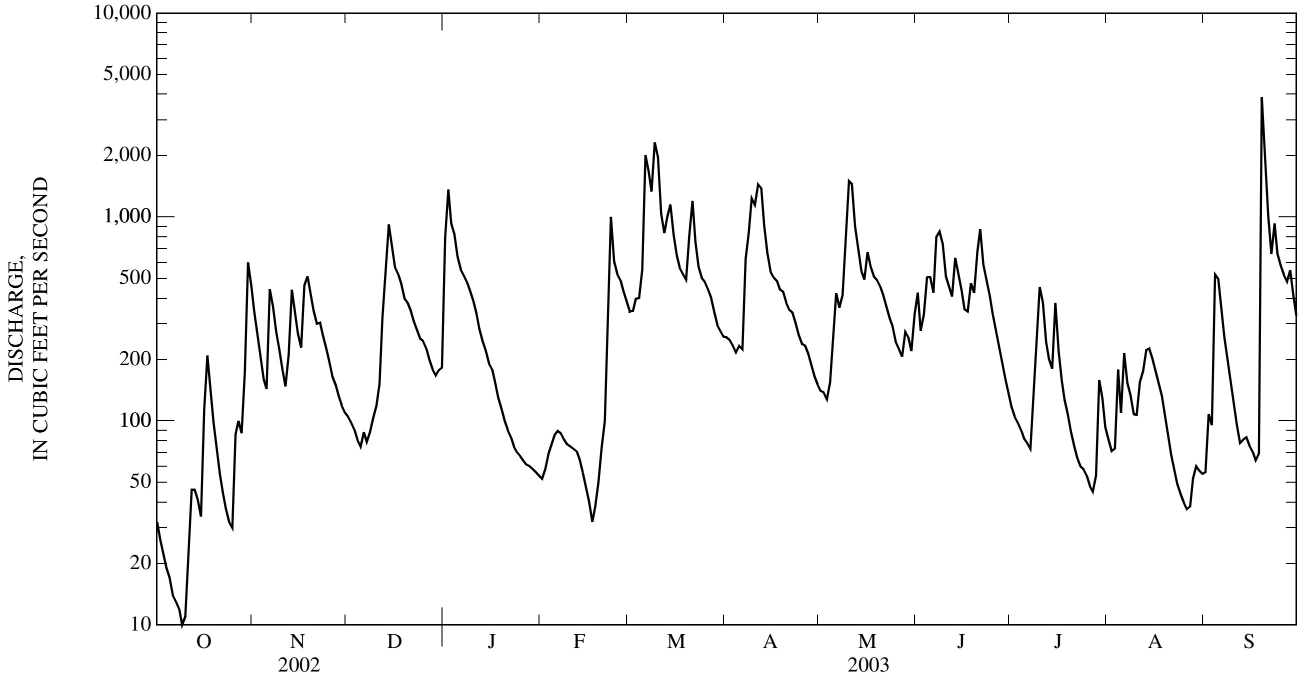
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2003, BY WATER YEAR (WY)

MEAN	71.6	84.4	160	207	302	430	315	226	110	60.2	58.4	54.9
MAX	745	901	825	908	893	1,346	1,085	763	459	415	586	767
(WY)	(1943)	(1986)	(1973)	(1996)	(1994)	(1963)	(1993)	(1988)	(2003)	(1989)	(1996)	(1996)
MIN	2.24	4.39	9.70	18.1	22.2	58.3	54.1	21.2	8.38	3.14	5.20	2.80
(WY)	(1992)	(1992)	(1944)	(2002)	(2002)	(1990)	(1969)	(1969)	(1999)	(1999)	(1966)	(1991)

01604500 PATTERSON CREEK NEAR HEADSVILLE, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1938 - 2003	
ANNUAL TOTAL	48,505.6		124,400			
ANNUAL MEAN	133		341		173	
HIGHEST ANNUAL MEAN					387	1996
LOWEST ANNUAL MEAN					35.1	1969
HIGHEST DAILY MEAN	1,050	May 2	3,860	Sep 19	11,100	Oct 15, 1942
LOWEST DAILY MEAN	1.9	(a)	10	Oct 9	0.48	Aug 23, 1999
ANNUAL SEVEN-DAY MINIMUM	2.8	Sep 10	14	Oct 4	0.87	Aug 17, 1999
MAXIMUM PEAK FLOW			5,510	Sep 19	(b)16,000	Aug 19, 1955
MAXIMUM PEAK STAGE			10.22	Sep 19	12.20	Aug 19, 1955
INSTANTANEOUS LOW FLOW			8.7	Oct 10	0.45	(c)
ANNUAL RUNOFF (CFSM)	0.63		1.62		0.82	
ANNUAL RUNOFF (INCHES)	8.55		21.93		11.12	
10 PERCENT EXCEEDS	409		746		447	
50 PERCENT EXCEEDS	40		226		60	
90 PERCENT EXCEEDS	7.6		55		10	

a Sept. 14, 15.
b From rating curve extended above 4,900 ft^3/s on basis of contracted-opening measurement of peak flow.
c Aug. 23, 24, 1999.
e Estimated.



01605002 PAINTER RUN NEAR FORT ASHBY, WV
(Detention Reservoir)

LOCATION.--Lat 39°29'08", long 78°45'37", NAD27, Mineral County, Hydrologic Unit 02070002.

DAM NAME.--Patterson Creek No. 4.

SURFACE AREA.--8 acres.

DRAINAGE AREA.--7.73 mi^2.

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

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 700.0 ft above NGVD of 1929.

REMARKS.-- Normal Pool = 20.6 ft (Normal storage=106 acre-ft)

Top of Riser = 31.1 ft

Emergency Spillway = 38.7 ft

Top of Dam = 47.6 ft

EXTREMES FOR JUNE 2002 TO SEPTEMBER 2002.--Maximum gage height, 20.90 ft, June 7; minimum gage height, 19.09 ft, Sept. 25, 26.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 26.73 ft, Mar. 10; minimum gage height, 19.51 ft, Oct. 9, 10.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	20.60	20.71	20.43
2	---	---	---	---	---	---	---	---	---	20.59	20.70	20.42
3	---	---	---	---	---	---	---	---	---	20.57	20.72	---
4	---	---	---	---	---	---	---	---	---	20.56	20.77	20.40
5	---	---	---	---	---	---	---	---	---	20.53	20.75	20.39
6	---	---	---	---	---	---	---	---	20.86	20.51	20.75	20.36
7	---	---	---	---	---	---	---	---	20.90	20.48	20.72	---
8	---	---	---	---	---	---	---	---	20.88	20.46	20.70	---
9	---	---	---	---	---	---	---	---	20.86	20.44	20.68	---
10	---	---	---	---	---	---	---	---	20.84	20.47	20.64	20.29
11	---	---	---	---	---	---	---	---	20.82	20.46	---	20.21
12	---	---	---	---	---	---	---	---	20.79	20.44	---	20.18
13	---	---	---	---	---	---	---	---	20.79	20.43	---	20.07
14	---	---	---	---	---	---	---	---	20.82	20.50	---	19.97
15	---	---	---	---	---	---	---	---	20.82	20.50	---	19.89
16	---	---	---	---	---	---	---	---	20.80	20.49	---	19.79
17	---	---	---	---	---	---	---	---	20.77	20.48	---	19.70
18	---	---	---	---	---	---	---	---	20.76	20.48	---	19.60
19	---	---	---	---	---	---	---	---	20.74	20.50	---	19.53
20	---	---	---	---	---	---	---	---	20.73	20.50	20.53	19.45
21	---	---	---	---	---	---	---	---	20.71	20.49	20.51	19.33
22	---	---	---	---	---	---	---	---	20.69	20.48	20.50	19.22
23	---	---	---	---	---	---	---	---	20.68	20.47	20.49	19.17
24	---	---	---	---	---	---	---	---	20.66	20.45	20.51	19.11
25	---	---	---	---	---	---	---	---	20.65	20.44	20.52	19.09
26	---	---	---	---	---	---	---	---	20.65	20.57	20.50	19.13
27	---	---	---	---	---	---	---	---	20.66	20.68	20.49	19.30
28	---	---	---	---	---	---	---	---	20.65	20.75	20.48	19.51
29	---	---	---	---	---	---	---	---	20.63	20.74	20.47	19.55
30	---	---	---	---	---	---	---	---	20.62	20.74	20.45	19.56
31	---	---	---	---	---	---	---	---	---	20.72	20.44	---
MEAN	---	---	---	---	---	---	---	---	---	20.53	---	---
MAX	---	---	---	---	---	---	---	---	---	20.75	---	---
MIN	---	---	---	---	---	---	---	---	---	20.43	---	---

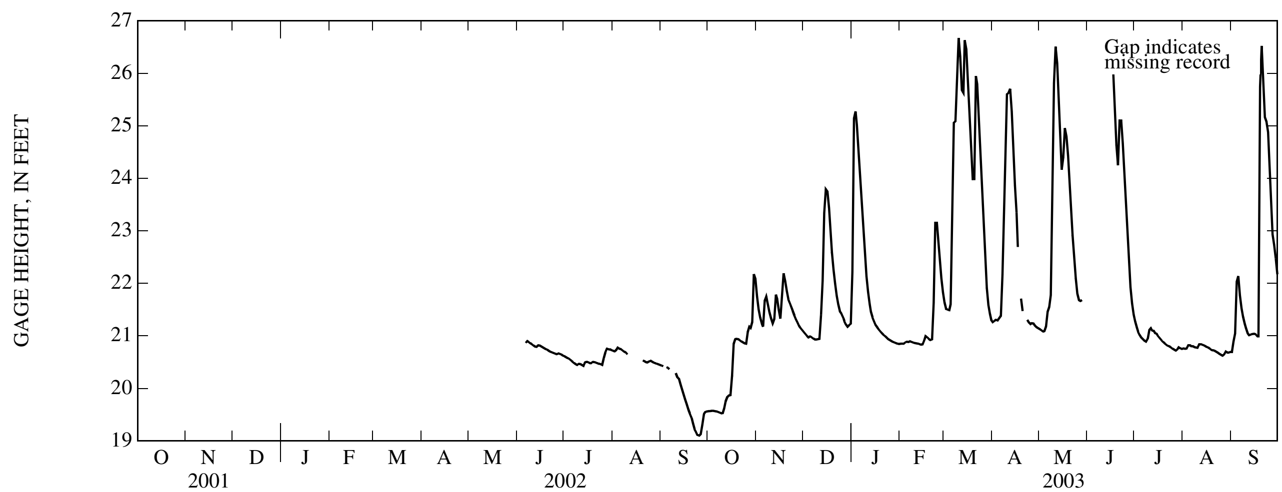
POTOMAC RIVER BASIN

01605002 PAINTER RUN NEAR FORT ASHBY, WV- -Continued

(Detention Reservoir)

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.56	21.75	21.07	22.22	20.85	21.63	21.26	21.12	---	21.26	20.76	20.69
2	19.57	21.50	21.03	25.14	20.85	21.51	21.28	21.11	---	21.16	20.75	20.89
3	19.57	21.35	21.00	25.27	20.85	21.49	21.30	21.08	---	21.08	20.76	21.05
4	19.57	21.23	20.96	25.01	20.87	21.49	21.29	21.08	---	21.02	20.82	22.03
5	19.57	21.17	20.98	24.60	20.89	21.60	21.33	21.17	---	20.97	20.82	22.14
6	19.56	21.67	20.97	24.08	20.88	23.44	21.37	21.45	---	20.94	20.80	21.77
7	19.54	21.75	20.95	23.51	20.89	25.06	22.16	21.54	---	20.91	20.80	21.53
8	19.53	21.59	20.93	22.97	20.88	25.08	23.64	21.78	---	20.89	20.78	21.35
9	19.52	21.44	20.93	22.51	20.87	25.73	24.54	23.59	---	20.94	20.78	21.23
10	19.53	21.32	20.94	22.14	20.86	26.67	25.60	25.81	---	21.11	20.77	21.14
11	19.61	21.23	20.94	21.83	20.86	26.32	25.63	26.51	---	21.15	20.84	21.05
12	19.75	21.32	21.39	21.60	20.85	25.69	25.71	26.19	---	21.10	20.84	21.01
13	19.83	21.78	22.04	21.45	20.84	25.63	25.27	25.60	---	21.09	20.83	21.02
14	19.86	21.69	23.34	21.35	20.83	26.63	24.59	24.87	---	21.05	20.81	21.03
15	19.87	21.49	23.79	21.28	20.84	26.46	23.86	24.17	---	21.03	20.80	21.04
16	20.24	21.32	23.75	21.20	20.90	25.93	23.35	24.40	---	20.98	20.78	21.03
17	20.84	21.76	23.44	21.16	21.00	25.32	22.69	24.95	26.04	20.94	20.77	20.99
18	20.93	22.19	23.03	21.11	20.97	24.66	---	24.80	25.31	20.91	20.75	20.99
19	20.94	22.04	22.59	21.07	20.93	23.99	21.71	24.43	24.64	20.88	20.73	25.75
20	20.93	21.85	22.26	21.04	20.92	23.99	21.47	23.95	24.25	20.85	20.72	26.52
21	20.92	21.70	21.99	21.02	20.93	25.95	---	23.44	25.10	20.83	20.71	25.86
22	20.89	21.63	21.77	20.99	21.62	25.80	---	22.92	25.10	20.81	20.69	25.16
23	20.88	21.55	21.59	20.96	23.15	25.14	21.30	22.54	24.66	20.79	20.67	25.08
24	20.86	21.47	21.46	20.94	23.15	24.38	21.25	22.10	24.06	20.78	20.65	24.88
25	20.85	21.39	21.42	20.91	22.83	23.63	21.22	21.80	23.43	20.75	20.63	24.24
26	21.07	21.31	21.35	20.90	22.44	22.96	21.24	21.68	22.85	20.74	20.62	23.55
27	21.17	21.25	21.28	20.88	22.10	22.39	21.23	21.66	22.34	20.72	20.64	22.93
28	21.15	21.19	21.21	20.87	21.83	21.92	21.19	21.68	21.93	20.74	20.70	22.73
29	21.26	21.13	21.18	20.86	---	21.59	21.16	---	21.62	20.77	20.68	22.48
30	22.17	21.10	21.20	20.85	---	21.41	21.14	---	21.41	20.76	20.68	22.17
31	22.08	---	21.23	20.85	---	21.30	---	---	---	20.75	20.69	---
MEAN	20.37	21.51	21.68	21.95	21.27	24.03	---	---	---	20.93	20.74	22.44
MAX	22.17	22.19	23.79	25.27	23.15	26.67	---	---	---	21.26	20.84	26.52
MIN	19.52	21.10	20.93	20.85	20.83	21.30	---	---	---	20.72	20.62	20.69



01605500 SOUTH BRANCH POTOMAC RIVER AT FRANKLIN, WV

LOCATION.--Lat 38°38'08", long 79°20'17", NAD27, Pendleton County, Hydrologic Unit 02070001, on left bank 0.5 mi southwest of Franklin, 2 mi upstream from Friends Run, 2.5 mi downstream from Thorn Creek, and at mile 112.5.

DRAINAGE AREA.--179 mi^2.

PERIOD OF RECORD.--April 1940 to September 1969, October 1976 to current year.

REVISED RECORDS.--WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,692.5 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark).

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 1936 reached a stage of about 13 ft.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 20	1030	2,700	5.12	May 9	2000	2,660	5.09
Feb 23	0800	5,280	6.67	May 10	2330	3,500	5.64
Mar 5	2100	1,760	4.43	Jun 4	2400	1,840	4.50
Mar 6	1900	1,890	4.54	Sep 19	0430	*16,500	*12.14

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	284	140	487	e50	374	262	324	286	123	63	58
2	48	214	121	785	e50	709	365	349	248	126	61	62
3	43	166	114	613	71	742	329	317	261	182	58	76
4	40	140	96	478	91	565	304	914	1,070	140	69	112
5	38	126	105	380	97	883	281	937	1,070	117	81	115
6	35	440	101	330	83	1,410	248	801	654	104	79	77
7	33	327	86	284	82	1,150	694	637	725	98	77	67
8	32	255	e80	266	72	835	840	515	868	152	108	62
9	32	207	e75	255	68	850	1,240	984	816	140	249	58
10	34	173	e72	227	e62	753	1,170	1,860	619	157	289	56
11	45	215	133	196	e56	582	1,410	2,170	495	129	375	52
12	60	392	268	156	e52	480	1,230	1,110	400	107	563	50
13	48	578	364	149	e48	558	928	820	415	96	286	55
14	42	393	639	142	e44	700	706	603	345	110	266	56
15	39	306	455	126	e40	561	561	489	293	225	191	54
16	143	257	388	109	37	484	467	409	341	148	150	81
17	255	377	330	e100	e45	451	389	343	489	116	133	58
18	145	357	281	e95	e55	415	352	696	605	102	111	99
19	106	305	257	e90	e72	360	448	905	521	97	98	5,900
20	87	268	1,640	e85	e80	668	353	700	539	88	88	1,090
21	76	261	1,100	e80	89	1,070	331	701	472	81	82	609
22	67	344	694	e76	1,560	754	350	632	396	77	77	434
23	61	305	498	e74	4,020	570	308	550	323	74	70	673
24	56	266	385	e70	1,400	456	272	480	273	71	66	454
25	52	231	347	e67	834	369	252	395	237	65	62	351
26	88	204	291	e64	585	325	267	365	209	62	59	288
27	84	203	244	e62	451	291	422	313	187	60	57	243
28	82	175	217	e58	366	254	338	309	168	60	57	284
29	301	159	201	e56	---	245	309	289	153	62	58	216
30	789	152	191	e54	---	258	290	273	135	60	54	186
31	409	---	190	e52	---	246	---	259	---	61	53	---
TOTAL	3,425	8,080	10,103	6,066	10,560	18,368	15,716	20,449	13,613	3,290	4,090	11,976
MEAN	110	269	326	196	377	593	524	660	454	106	132	399
MAX	789	578	1,640	785	4,020	1,410	1,410	2,170	1,070	225	563	5,900
MIN	32	126	72	52	37	245	248	259	135	60	53	50
CFSM	0.62	1.50	1.82	1.09	2.11	3.31	2.93	3.69	2.54	0.59	0.74	2.23
IN.	0.71	1.68	2.10	1.26	2.19	3.82	3.27	4.25	2.83	0.68	0.85	2.49

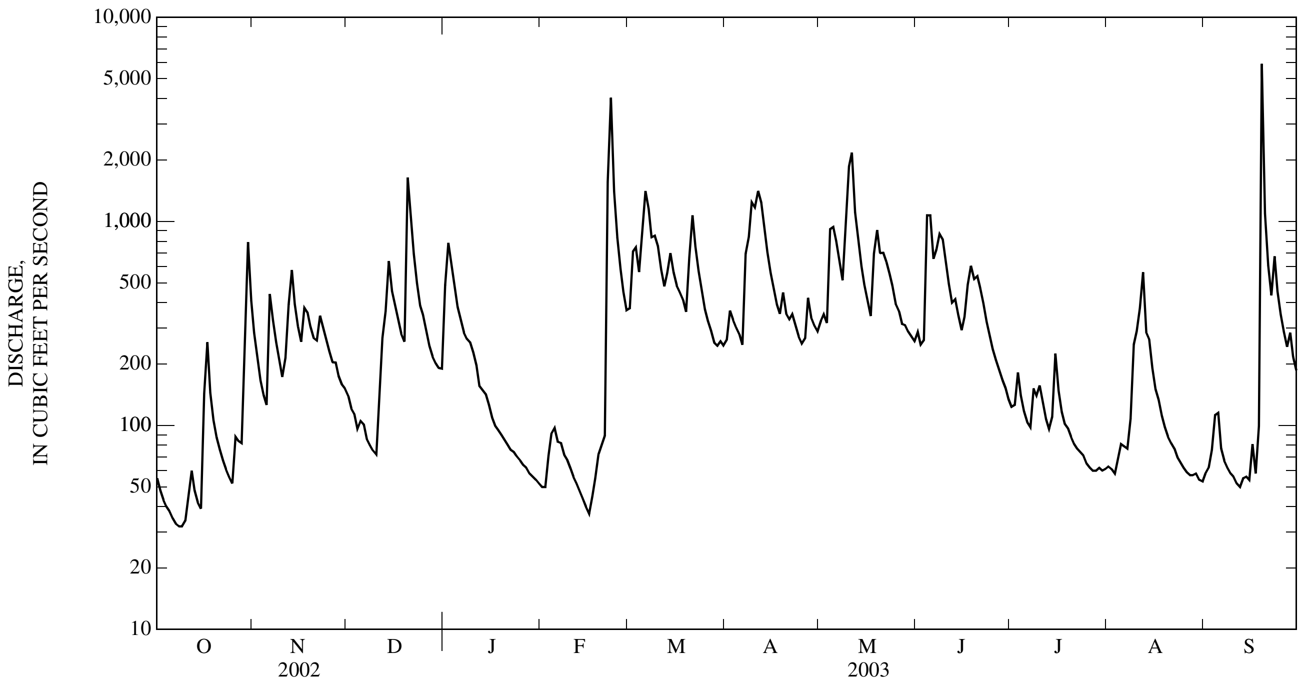
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	78.1	134	157	208	255	396	289	235	138	71.6	78.9	82.8
MAX	546	2,219	496	815	668	832	797	665	664	381	351	750
(WY)	(1977)	(1986)	(1997)	(1996)	(1998)	(1963)	(1987)	(1996)	(1940)	(1949)	(1984)	(1996)
MIN	20.0	25.5	23.5	32.5	45.6	80.8	90.2	59.3	33.7	27.8	23.3	21.4
(WY)	(1964)	(1966)	(1966)	(1981)	(2002)	(1981)	(1988)	(1941)	(1964)	(1964)	(1966)	(1963)

01605500 SOUTH BRANCH POTOMAC RIVER AT FRANKLIN, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	58,253		125,736			
ANNUAL MEAN	160		344		176	
HIGHEST ANNUAL MEAN					344	2003
LOWEST ANNUAL MEAN					85.2	1999
HIGHEST DAILY MEAN	3,270	Apr 22	5,900	Sep 19	25,000	Nov 4, 1985
LOWEST DAILY MEAN	21	(a)	32	(b)	14	(c)
ANNUAL SEVEN-DAY MINIMUM	22	Sep 8	35	Oct 4	14	Sep 6, 1966
MAXIMUM PEAK FLOW			16,500	Sep 19	(d)44,000	Nov 4, 1985
MAXIMUM PEAK STAGE			12.14	Sep 19	(f)22.58	Nov 4, 1985
INSTANTANEOUS LOW FLOW			29	Feb 16	13	Jan 17, 1966
ANNUAL RUNOFF (CFSM)	0.89		1.92		0.98	
ANNUAL RUNOFF (INCHES)	12.11		26.13		13.33	
10 PERCENT EXCEEDS	371		753		374	
50 PERCENT EXCEEDS	69		245		88	
90 PERCENT EXCEEDS	27		56		32	

a Sept. 12-14.
b Oct. 8, 9.
c Sept. 7-12, 1966.
d From rating curve extended above 15,000 ft^3/s, on basis of slope-area measurement of peak flow.
e Estimated.
f From floodmarks.



01606000 NORTH FORK SOUTH BRANCH POTOMAC RIVER AT CABINS, WV

LOCATION.--Lat 38°59'04", long 79°14'02", NAD27, Grant County, Hydrologic Unit 02070001, on right bank 10 ft upstream from bridge on County Route 28/11, 2 mi downstream from Jordan Run, 6 mi west of Petersburg, at Cabins, and at mile 2.9.

DRAINAGE AREA.--335 mi^2.

PERIOD OF RECORD.--February 1940 to September 1961, October 1961 to September 1978 (occasional discharge measurements and annual maximums only), October 1978 to September 1980, April 1998 to current year.

REVISED RECORDS.--WSP 1272: 1945.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,045.848 ft above NGVD of 1929.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect, no gage-height record), which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Discharge, 90,000 ft^3/s, Nov. 5, 1985, from slope-area measurement. Estimated discharge, 80,000 ft^3/s, Sept. 6, 1996, from modification of Nov. 5, 1985, slope-area measurement.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 20	1630	4,760	7.99	Apr 9	2230	3,360	7.24
Jan 2	0400	3,500	7.32	May 10	0200	4,580	7.90
Feb 23	1200	6,620	8.85	May 11	0400	8,590	9.65
Mar 6	2100	3,910	7.55	Jun 9	0300	4,340	7.78
Mar 21	0600	3,680	7.42	Sep 19	0700	*15,300	*11.95

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	890	438	1,000	e135	707	382	516	962	181	61	57
2	68	637	375	3,130	e135	952	e650	671	1,040	168	61	91
3	56	481	356	2,220	157	1,340	e1,000	718	905	182	60	261
4	48	386	301	1,590	364	1,150	e900	922	1,570	181	60	e270
5	44	347	326	1,180	677	1,750	742	1,740	2,090	144	70	e446
6	41	1,200	309	938	497	3,710	605	1,890	1,440	123	e90	e306
7	38	1,210	271	763	443	e3,000	1,420	1,510	1,490	111	e120	e225
8	35	893	e250	666	364	e2,500	2,540	1,170	2,020	992	e154	e181
9	32	693	e235	613	295	e2,300	2,890	958	3,410	843	328	e150
10	34	558	e220	586	326	e2,600	3,010	4,140	2,100	574	844	e129
11	58	472	e400	523	290	e1,900	2,950	6,460	1,370	415	1,620	e113
12	128	635	708	426	e270	e1,500	2,940	2,940	1,010	308	1,160	e93
13	122	1,680	862	e370	e240	e1,800	2,390	2,030	901	237	691	95
14	119	1,240	1,820	e360	e210	e2,700	1,710	1,550	1,000	201	448	97
15	118	906	1,340	342	e175	e2,200	1,280	1,190	801	203	320	94
16	361	699	1,090	e310	e140	e1,900	995	968	742	217	244	119
17	1,010	998	912	292	e115	e1,950	797	820	1,010	180	213	110
18	530	1,170	749	e270	e130	1,990	653	1,310	1,490	148	185	110
19	347	975	650	e260	e170	e1,500	800	2,250	1,230	134	150	7,600
20	261	885	3,080	249	e230	e2,000	749	1,760	1,300	120	128	2,760
21	215	782	2,990	237	320	3,290	693	1,340	1,400	104	109	1,430
22	175	909	1,760	e220	2,060	e2,200	692	1,070	1,180	92	95	903
23	146	907	1,320	e210	5,590	e1,800	621	891	894	85	84	847
24	125	779	1,000	e200	3,130	e1,400	538	779	662	80	73	647
25	112	671	855	e190	1,890	e1,100	488	649	503	75	63	497
26	173	586	688	e180	1,330	e900	466	579	398	65	55	406
27	251	565	532	e170	1,040	e780	561	505	330	58	52	354
28	205	505	466	160	842	e670	537	529	284	62	63	370
29	384	455	419	e150	---	e580	497	557	242	73	e64	309
30	2,400	448	388	e145	---	e540	452	564	208	79	e59	265
31	1,400	---	384	e140	---	e500	---	540	---	65	53	---
TOTAL	9,124	23,562	25,494	18,090	21,565	53,209	34,948	43,516	33,982	6,500	7,777	19,335
MEAN	294	785	822	584	770	1,716	1,165	1,404	1,133	210	251	644
MAX	2,400	1,680	3,080	3,130	5,590	3,710	3,010	6,460	3,410	992	1,620	7,600
MIN	32	347	220	140	115	500	382	505	208	58	52	57
CFSM	0.88	2.34	2.45	1.74	2.30	5.12	3.48	4.19	3.38	0.63	0.75	1.92
IN.	1.01	2.62	2.83	2.01	2.39	5.91	3.88	4.83	3.77	0.72	0.86	2.15

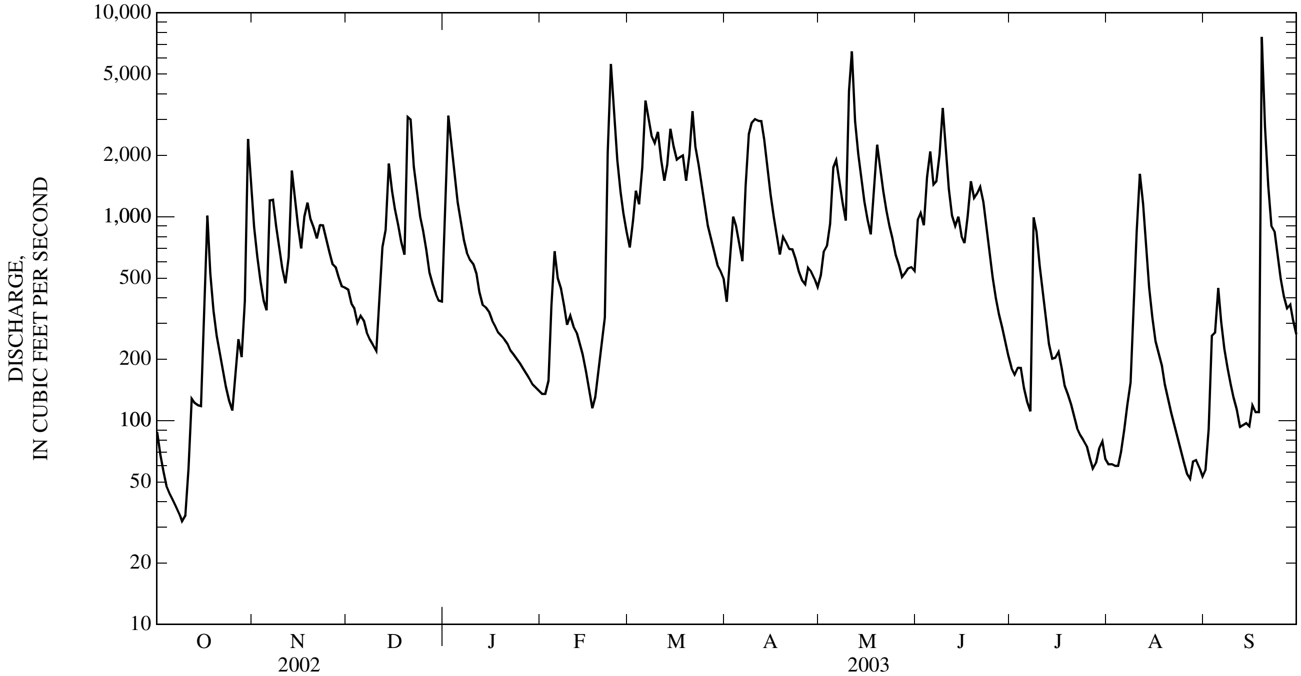
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	142	186	381	487	678	866	792	584	321	132	147	133
MAX	913	785	1,114	1,053	1,473	1,716	1,703	1,404	1,133	655	767	678
(WY)	(1980)	(2003)	(1949)	(1952)	(1961)	(2003)	(1958)	(2003)	(2003)	(1949)	(1955)	(1950)
MIN	7.08	16.2	30.2	116	142	418	229	134	55.6	16.9	12.0	6.83
(WY)	(1954)	(1954)	(1999)	(1956)	(1941)	(1959)	(1955)	(1941)	(1999)	(1999)	(1999)	(1953)

01606000 NORTH FORK SOUTH BRANCH POTOMAC RIVER AT CABINS, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	166,549		297,102			
ANNUAL MEAN	456		814		400	
HIGHEST ANNUAL MEAN					814	2003
LOWEST ANNUAL MEAN					213	1959
HIGHEST DAILY MEAN	7,040	Apr 22	7,600	Sep 19	10,600	Aug 18, 1955
LOWEST DAILY MEAN	11	(a)	32	Oct 9	5.0	(b)
ANNUAL SEVEN-DAY MINIMUM	11	Sep 11	39	Oct 4	5.1	Sep 30, 1953
MAXIMUM PEAK FLOW			15,300	Sep 19	(c)90,000	Nov 5, 1985
MAXIMUM PEAK STAGE			11.95	Sep 19	(d)	Nov 5, 1985
INSTANTANEOUS LOW FLOW			31	(f)	5.0	(b)
ANNUAL RUNOFF (CFSM)	1.36		2.43		1.20	
ANNUAL RUNOFF (INCHES)	18.49		32.99		16.24	
10 PERCENT EXCEEDS	1,130		1,970		992	
50 PERCENT EXCEEDS	212		523		184	
90 PERCENT EXCEEDS	26		91		26	

a Sept. 13-17.
b Oct. 1-5, 9-11, 1953.
c From slope-area measurement.
d Not determined.
e Estimated.
f Oct. 9, 10.



01606500 SOUTH BRANCH POTOMAC RIVER NEAR PETERSBURG, WV

LOCATION.--Lat 38°59'28", long 79°10'34", NAD27, Grant County, Hydrologic Unit 02070001, on right bank 1.1 mi downstream from North Fork South Branch Potomac River, 2.6 mi west of Petersburg, and at mile 74.7.

DRAINAGE AREA.--676 mi^2.

PERIOD OF RECORD.--June 1928 to current year.

REVISED RECORDS.--WSP 951: 1939-41. WSP 1141: 1932, 1933(M), 1936-38. WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 968.34 ft above NGVD of 1929. Prior to Dec. 4, 1928, nonrecording gage and June 1928 to Nov. 5, 1985, water-stage recorder at site 1,125 ft downstream at datum 6.34 ft lower. Nov. 5, 1985, to June 22, 1994, and October 23, 1996 to current year, water-stage recorder at present site and datum. June 22, 1994, to October 23, 1996, water-stage recorder at site 325 ft downstream at datum 2.34 ft lower.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect, no gage-height record), which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1877 reached a stage of 21.2 ft, from floodmarks at previous site and datum, about 59,000 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 20	1800	7,450	8.14	May 10	0100	8,630	7.69
Feb 23	1300	15,300	9.54	May 11	0230	16,500	9.87
Mar 6	0230	7,500	7.30	Jun 9	0300	7,700	7.37
Mar 21	0300	6,050	6.73	Sep 19	0830	*37,700	*13.96
Apr 11	1100	6,630	6.97				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	211	1,310	652	1,490	e310	1,480	898	1,180	1,550	484	206	171
2	172	950	574	4,200	e300	2,190	1,520	1,420	1,620	457	205	218
3	149	745	537	3,160	463	3,040	1,680	1,400	1,440	492	191	431
4	135	621	477	2,430	635	2,470	1,510	2,290	2,780	521	198	467
5	124	559	481	1,890	953	3,420	1,340	3,720	3,930	425	218	735
6	113	1,550	474	1,590	826	7,120	1,130	3,660	2,810	374	242	535
7	107	1,670	416	1,370	781	5,890	2,470	2,980	2,760	341	244	405
8	100	1,220	e390	1,240	707	4,110	4,470	2,380	3,850	1,850	345	341
9	95	966	e370	1,180	618	4,580	5,110	2,700	6,070	1,520	476	285
10	99	804	e350	1,130	644	4,280	5,640	9,050	3,850	1,060	1,670	254
11	129	706	447	1,040	e540	3,190	5,990	11,800	2,700	814	2,770	227
12	215	919	917	913	e470	2,490	5,730	5,550	2,110	640	2,220	203
13	245	2,480	1,140	854	e410	2,920	4,480	4,100	1,980	515	1,400	210
14	214	1,520	2,340	853	e364	5,020	3,430	3,150	2,090	457	976	220
15	204	1,180	1,770	800	e290	3,700	2,660	2,490	1,640	578	739	211
16	395	978	1,450	692	e230	3,250	2,130	2,090	1,530	562	580	232
17	1,420	1,250	1,280	e650	176	3,310	1,740	1,760	2,140	454	502	253
18	833	1,460	1,090	e620	e220	3,250	1,470	2,520	3,010	384	441	221
19	574	1,240	974	e590	e280	2,860	1,780	4,220	2,540	354	371	18,600
20	448	1,120	4,060	e560	e360	3,020	1,570	3,410	2,650	322	324	5,950
21	374	1,020	4,410	e520	476	5,370	1,440	2,770	2,770	286	286	3,120
22	316	1,160	2,780	e500	2,980	3,930	1,460	2,430	2,280	261	257	2,080
23	275	1,160	2,130	e480	12,500	2,960	1,320	2,050	1,790	247	233	2,150
24	241	1,020	1,670	e450	6,330	2,280	1,160	1,810	1,380	238	213	1,670
25	220	915	1,490	e430	3,880	1,820	1,060	1,520	1,090	224	203	1,240
26	286	832	1,300	e410	2,790	1,540	1,030	1,360	907	202	189	992
27	397	802	1,110	e390	2,150	1,330	1,260	1,210	780	188	173	844
28	343	756	1,020	e370	1,750	1,110	1,240	1,190	692	195	175	865
29	479	691	950	e360	---	999	1,130	1,180	613	213	187	736
30	3,900	663	912	e340	---	1,010	1,050	1,160	540	219	190	623
31	2,150	---	894	e330	---	956	---	1,080	---	208	170	---
TOTAL	14,963	32,267	38,855	31,832	42,433	94,895	68,898	89,630	65,892	15,085	16,594	44,489
MEAN	483	1,076	1,253	1,027	1,515	3,061	2,297	2,891	2,196	487	535	1,483
MAX	3,900	2,480	4,410	4,200	12,500	7,120	5,990	11,800	6,070	1,850	2,770	18,600
MIN	95	559	350	330	176	956	898	1,080	540	188	170	171
CFSM	0.71	1.59	1.85	1.52	2.24	4.53	3.40	4.28	3.25	0.72	0.79	2.19
IN.	0.82	1.78	2.14	1.75	2.34	5.22	3.79	4.93	3.63	0.83	0.91	2.45

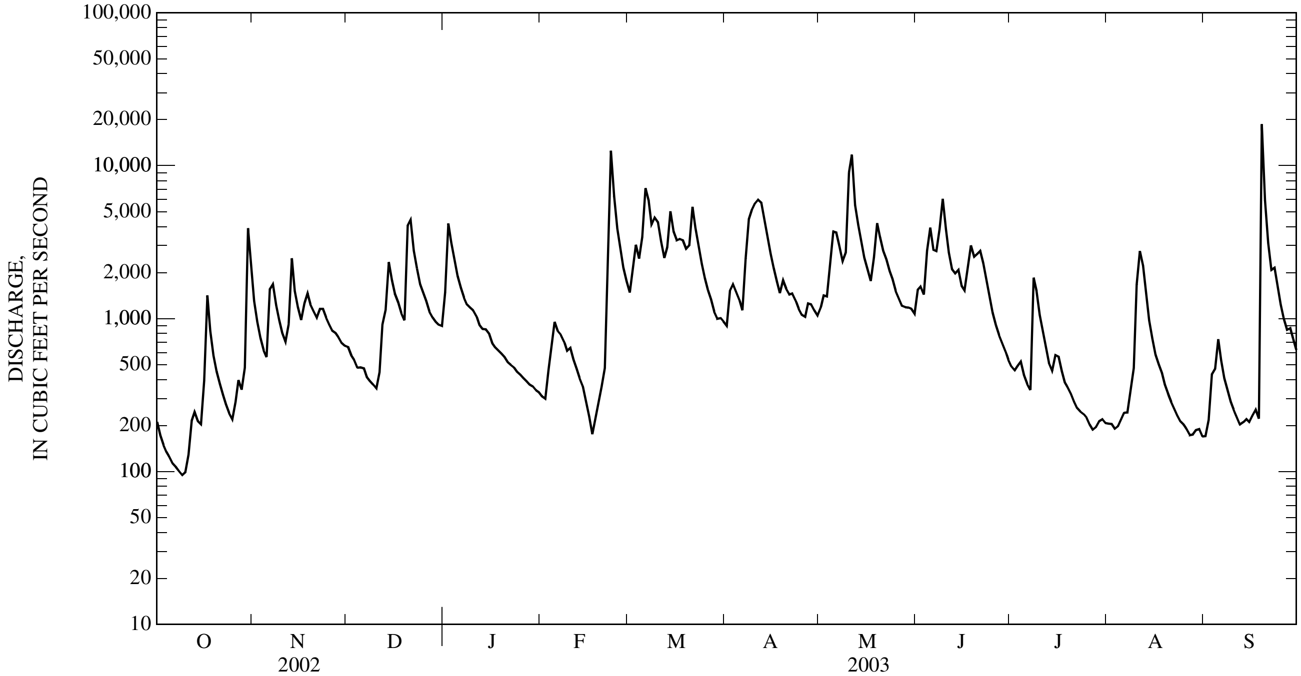
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	320	486	703	925	1,159	1,650	1,286	1,033	550	293	289	271
MAX	1,863	5,569	2,511	3,386	3,519	4,090	2,888	3,546	2,196	1,479	1,601	2,968
(WY)	(1977)	(1986)	(1973)	(1996)	(1994)	(1936)	(1993)	(1996)	(2003)	(1949)	(1996)	(1996)
MIN	49.3	62.7	95.1	143	212	543	398	233	125	63.9	54.1	52.3
(WY)	(1931)	(1931)	(1966)	(1981)	(1934)	(1990)	(1986)	(1930)	(1999)	(1999)	(1930)	(1930)

01606500 SOUTH BRANCH POTOMAC RIVER NEAR PETERSBURG, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1928 - 2003	
ANNUAL TOTAL	267,789		555,833			
ANNUAL MEAN	734		1,523		745	
HIGHEST ANNUAL MEAN					1,619	1996
LOWEST ANNUAL MEAN					365	1969
HIGHEST DAILY MEAN	14,900	Apr 22	18,600	Sep 19	77,000	Nov 5, 1985
LOWEST DAILY MEAN	51	(a)	95	Oct 9	43	(b)
ANNUAL SEVEN-DAY MINIMUM	53	Sep 9	110	Oct 5	44	Sep 6, 1966
MAXIMUM PEAK FLOW			37,700	Sep 19	(c)130,000	Nov 5, 1985
MAXIMUM PEAK STAGE			13.96	Sep 19	(d)25.40	Nov 5, 1985
INSTANTANEOUS LOW FLOW			91	Oct 9	42	(f)
ANNUAL RUNOFF (CFSM)	1.09		2.25		1.10	
ANNUAL RUNOFF (INCHES)	14.74		30.59		14.97	
10 PERCENT EXCEEDS	1,570		3,420		1,680	
50 PERCENT EXCEEDS	315		976		377	
90 PERCENT EXCEEDS	84		217		95	

a Sept. 13, 14.
b Sept. 27-29, 1959, Sept. 11, 12, 1966.
c From rating curve extended above 16,700 ft^3/s on basis of slope-area measurement of peak flow.
d From floodmarks at former site at gage datum 962.00 ft.
e Estimated.
f Sept. 28, 29, 1959, Sept. 11, 12, 1966.



01607500 SOUTH FORK SOUTH BRANCH POTOMAC RIVER AT BRANDYWINE, WV

LOCATION.--Lat 38°37'53", long 79°14'38", NAD27, Pendleton County, Hydrologic Unit 0207000l, on left bank 50 ft upstream from bridge on U.S. Highway 33, 0.1 mi upstream from Hawes Run, 0.4 mi north of Brandywine, 0.9 mi downstream from Broad Run, and at mile 44.9.

DRAINAGE AREA.--103 mi^2.

PERIOD OF RECORD.--August 1943 to current year.

REVISED RECORDS.--WSP 1141: 1945(M), 1947(M). WDR WV-84-1: 1983. WDR WV-88-1: 1987. WDR WV-97-1: Drainage area, 1967(M), 1971-75(M), 1977-78(M).

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,558.35 ft above NGVD of 1929. Prior to Sept. 24, 1956, nonrecording gage at highway bridge 50 ft downstream at same datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor. The flow from 41.3 mi^2 upstream from station is partially controlled, but not diverted, by several floodwater detention reservoirs with a total combined detention capacity of 8,882 acre-ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharges for the November 1877 and 1896 peaks were about 40,000 ft^3/s and 45,000 ft^3/s, respectively; based on notes from local residents comparing these peaks to the 1949 peak.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,430 ft^3/s, Sept. 19, gage height, (a)9.07 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	279	70	267	e23	208	94	106	69	36	13	14
2	33	185	60	798	e23	505	197	94	61	35	13	24
3	28	132	54	498	24	633	219	83	56	49	13	46
4	25	102	44	346	e23	415	181	222	225	46	24	56
5	22	88	49	262	e23	527	150	342	507	42	42	78
6	20	282	45	211	22	912	120	323	310	38	53	50
7	18	270	39	164	e21	734	380	254	251	33	32	37
8	17	198	e36	137	e21	447	591	197	368	54	34	30
9	16	154	34	118	e20	413	882	394	347	56	98	25
10	16	124	e32	102	e19	393	906	1,090	276	73	159	22
11	23	500	54	87	e18	276	1,170	1,170	203	72	269	19
12	34	876	146	68	18	208	823	605	155	61	235	18
13	29	1,150	419	63	e17	202	528	341	200	49	101	17
14	26	553	848	60	e17	289	356	230	155	54	72	18
15	24	321	564	54	e16	240	258	173	134	50	52	18
16	203	224	383	51	e16	191	202	140	161	37	43	21
17	574	437	284	e47	e18	166	167	117	341	33	38	18
18	233	562	219	e45	e22	150	142	215	517	32	31	135
19	125	381	174	e42	e27	133	183	439	388	27	27	3,250
20	85	266	1,350	40	e38	335	195	330	347	25	25	1,620
21	66	216	1,300	38	54	845	186	281	390	22	20	1,330
22	52	271	640	e35	1,370	457	177	264	282	19	18	1,060
23	42	272	334	e33	2,080	294	148	232	191	18	17	1,030
24	37	224	229	e31	1,180	214	123	199	128	17	15	511
25	34	177	190	e30	844	166	108	167	95	15	14	209
26	45	140	146	e28	381	139	104	140	76	14	13	141
27	49	110	109	e27	250	117	149	121	65	13	13	112
28	51	92	93	26	197	97	150	102	59	13	19	132
29	291	82	86	25	---	87	133	84	54	14	18	102
30	1,090	77	77	e24	---	93	118	77	39	13	15	85
31	503	---	72	e24	---	92	---	68	---	13	14	---
TOTAL	3,851	8,745	8,180	3,781	6,782	9,978	9,140	8,600	6,450	1,073	1,550	10,228
MEAN	124	292	264	122	242	322	305	277	215	34.6	50.0	341
MAX	1,090	1,150	1,350	798	2,080	912	1,170	1,170	517	73	269	3,250
MIN	16	77	32	24	16	87	94	68	39	13	13	14
CFSM	1.21	2.83	2.56	1.18	2.35	3.12	2.96	2.69	2.09	0.34	0.49	3.31
IN.	1.39	3.16	2.95	1.37	2.45	3.60	3.30	3.11	2.33	0.39	0.56	3.69

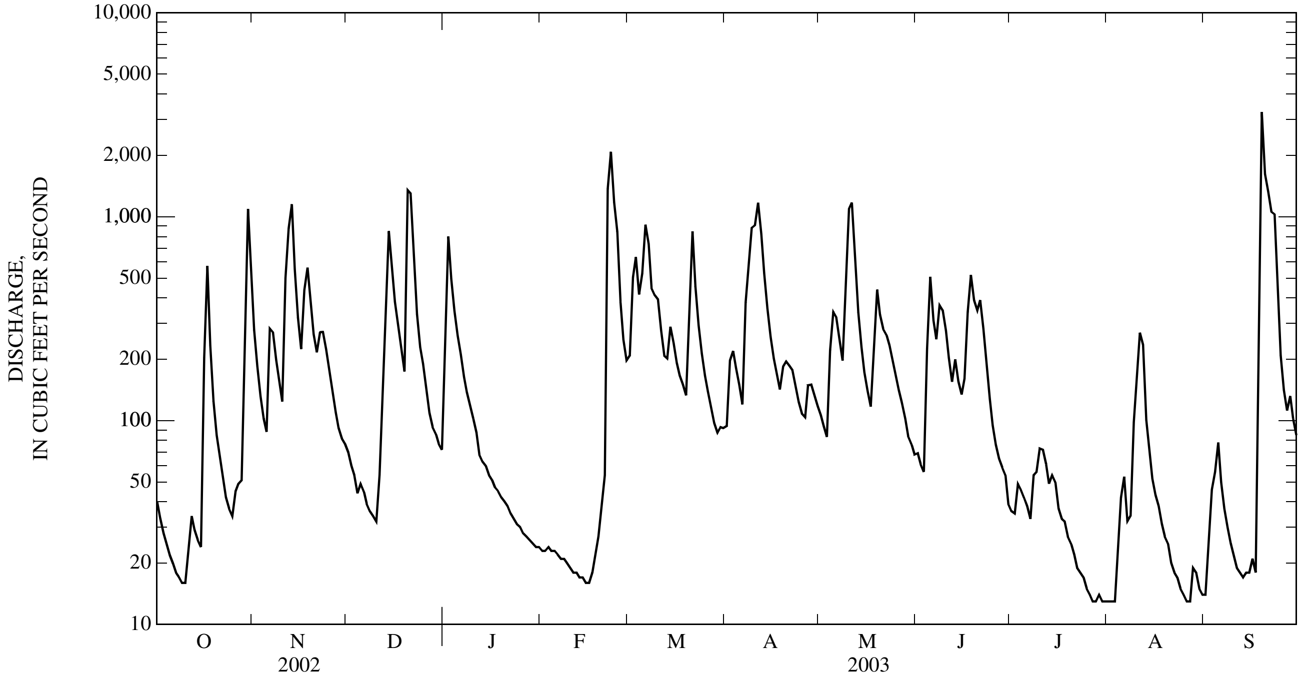
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	56.9	85.0	106	128	152	233	166	130	75.6	32.1	39.0	52.4
MAX	340	965	473	519	681	588	583	324	570	220	301	568
(WY)	(1973)	(1986)	(1974)	(1996)	(1998)	(1994)	(1987)	(1960)	(1949)	(1949)	(1984)	(1996)
MIN	4.57	5.09	6.45	7.70	11.0	30.4	34.0	18.3	7.68	3.90	3.39	2.88
(WY)	(1964)	(1999)	(1956)	(1981)	(2002)	(1988)	(1981)	(1977)	(1977)	(1999)	(1957)	(1968)

01607500 SOUTH FORK SOUTH BRANCH POTOMAC RIVER AT BRANDYWINE, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1943 - 2003	
ANNUAL TOTAL	36,883.07		78,358			
ANNUAL MEAN	101		215		104	
HIGHEST ANNUAL MEAN					215	2003
LOWEST ANNUAL MEAN					38.6	1981
HIGHEST DAILY MEAN	2,280	Apr 22	3,250	Sep 19	7,500	Nov 4, 1985
LOWEST DAILY MEAN	0.82	Sep 10	13	(b)	0.20	Aug 13, 1999
ANNUAL SEVEN-DAY MINIMUM	1.3	Sep 6	13	Jul 27	0.42	Aug 4, 1999
MAXIMUM PEAK FLOW			6,430	Sep 19	(c)41,200	Jun 17, 1949
MAXIMUM PEAK STAGE			(a)9.07	Sep 19	(d)18.42	Nov 4, 1985
INSTANTANEOUS LOW FLOW			12	(f)	0.17	Aug 13, 1999
ANNUAL RUNOFF (CFSM)	0.98		2.08		1.01	
ANNUAL RUNOFF (INCHES)	13.32		28.30		13.78	
10 PERCENT EXCEEDS	268		513		223	
50 PERCENT EXCEEDS	26		102		39	
90 PERCENT EXCEEDS	6.7		18		7.3	

a From float tape indicator.
b July 27, 28, 30, 31, Aug. 1-3, 26, 27.
c From rating curve extended above 5,300 ft^3/s on basis of slope-area measurement of peak flow.
d From floodmarks.
e Estimated.
f July 27, 28, 30, 31, Aug. 2, 3, 26-28.



01608000 SOUTH FORK SOUTH BRANCH POTOMAC RIVER NEAR MOOREFIELD, WV

LOCATION.--Lat 39°00'44", long 78°57'23", NAD27, Hardy County, Hydrologic Unit 02070001, on right bank 0.2 mi downstream from Stony Creek, 3.5 mi south of Moorefield, and at mile 5.3.

DRAINAGE AREA.--277 mi^2.

PERIOD OF RECORD.--June 1928 to September 1935, August 1938 to current year.

REVISED RECORDS.--WSP 1141: 1933(M), 1940, 1942-43, 1945, 1948(M). WSP 1302:l93l(M), l935(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 861.51 ft above sea level (U.S. Army Corps of Engineers datum). Prior to Mar. 11, 1940, nonrecording gage at Harness Ford Bridge 2.0 mi upstream at datum about 31 ft higher.

REMARKS.--Records good except those for periods of estimated discharges (ice effect, doubtful gage-height record), which are poor. The flow from 92.7 mi^2 upstream from station is partially controlled, but not diverted, by several floodwater detention reservoirs with a total combined detention capacity of 19,870 acre-ft. Water-quality data furnished by Maryland USGS.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,000 ft^3/s, Sept. 19, gage height, 10.94 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	127	579	162	364	e63	594	324	256	219	88	e32	31
2	100	374	144	1,640	e60	988	577	273	199	80	e36	35
3	80	267	129	1,170	68	1,730	694	246	181	81	e45	41
4	62	209	117	835	74	1,310	592	318	239	82	e56	70
5	50	176	114	628	73	1,540	489	761	793	78	e65	86
6	42	244	108	502	69	3,100	396	857	801	68	e67	91
7	38	436	105	403	67	2,490	758	741	617	63	e72	69
8	34	358	94	335	61	1,590	1,860	590	781	255	e80	56
9	31	282	e88	295	58	1,520	1,880	509	1,210	389	e110	48
10	32	229	e84	254	56	1,430	2,640	2,260	951	267	e350	44
11	37	222	109	222	e54	982	3,480	3,970	683	225	e460	39
12	43	675	234	193	e52	704	2,660	2,070	552	164	e370	36
13	56	1,690	590	169	e50	638	1,690	1,190	1,100	126	e260	38
14	61	1,060	1,480	161	e48	969	1,160	821	1,360	103	e170	38
15	52	662	1,210	151	e46	814	856	603	688	96	e140	36
16	151	446	889	130	e44	603	667	518	491	84	e120	36
17	906	587	692	127	e43	487	533	418	630	71	e95	34
18	562	1,030	530	e120	e58	433	437	478	1,200	63	e82	51
19	309	810	418	e115	e76	388	448	1,050	1,050	60	e70	9,680
20	207	578	740	e110	e100	506	462	992	1,160	55	e60	5,190
21	159	438	1,850	e105	139	2,110	471	781	1,310	51	e54	3,010
22	130	491	1,180	e100	1,350	1,480	515	692	960	48	e48	1,830
23	108	515	703	e96	5,690	968	470	591	641	e46	e43	1,570
24	92	445	488	e92	3,530	713	400	521	419	e43	e38	1,200
25	79	361	393	e87	2,170	550	353	438	286	e41	e36	666
26	79	296	322	e83	1,400	452	325	369	212	e39	e33	449
27	74	254	256	e80	917	393	306	314	164	e36	e32	336
28	75	219	216	e76	723	327	315	290	135	e35	e33	295
29	89	189	195	e73	---	290	290	262	116	e42	e34	273
30	1,250	173	182	e70	---	295	267	242	100	e36	e35	224
31	1,000	---	171	e66	---	299	---	224	---	e34	31	---
TOTAL	6,115	14,295	13,993	8,852	17,139	30,693	26,315	23,645	19,248	2,949	3,157	25,602
MEAN	197	476	451	286	612	990	877	763	642	95.1	102	853
MAX	1,250	1,690	1,850	1,640	5,690	3,100	3,480	3,970	1,360	389	460	9,680
MIN	31	173	84	66	43	290	267	224	100	34	31	31
CFSM	0.71	1.72	1.63	1.03	2.21	3.57	3.17	2.75	2.32	0.34	0.37	3.08
IN.	0.82	1.92	1.88	1.19	2.30	4.12	3.53	3.18	2.58	0.40	0.42	3.44

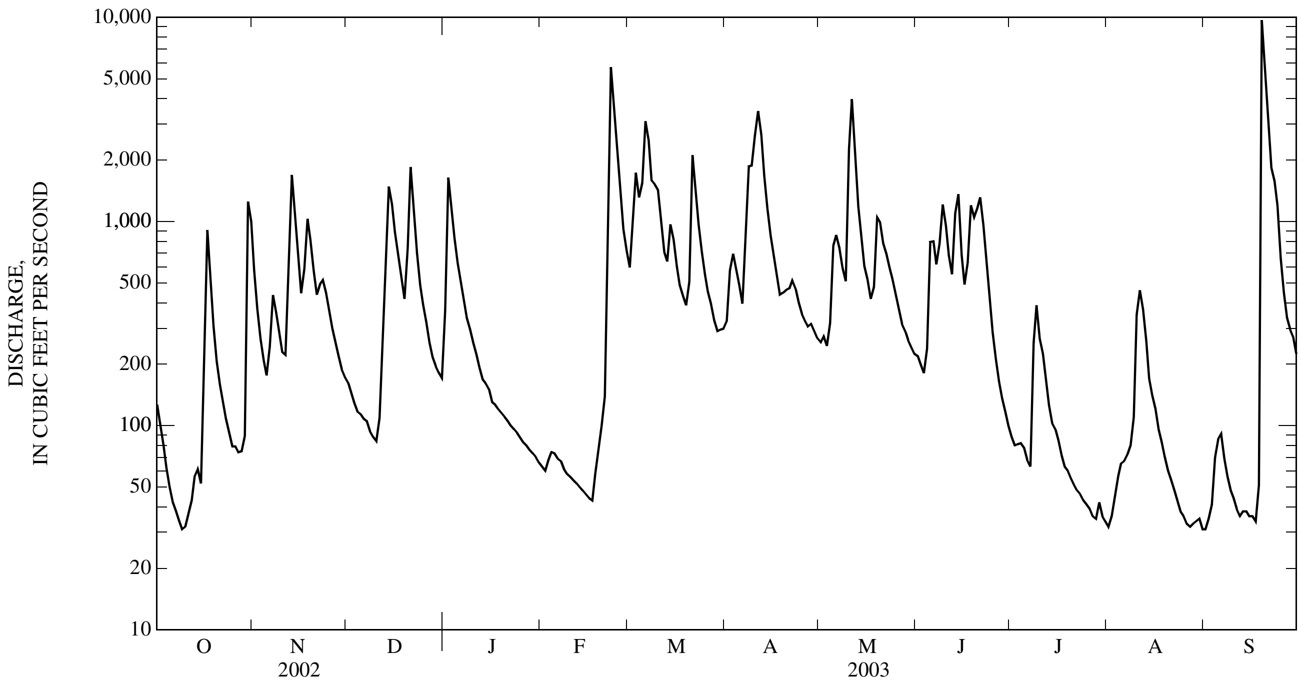
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	126	177	206	265	336	497	413	330	173	84.5	106	104
MAX	776	2,951	879	1,267	1,591	1,327	1,787	946	1,071	510	801	1,340
(WY)	(1977)	(1986)	(1974)	(1996)	(1998)	(1993)	(1987)	(1988)	(1949)	(1949)	(1955)	(1996)
MIN	12.8	14.0	17.4	21.3	25.2	72.2	91.7	51.2	28.1	9.48	10.4	10.2
(WY)	(1992)	(1999)	(1966)	(1981)	(1934)	(1981)	(1981)	(1930)	(1977)	(1999)	(1965)	(1968)

01608000 SOUTH FORK SOUTH BRANCH POTOMAC RIVER NEAR MOOREFIELD, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1928 - 2003	
ANNUAL TOTAL	80,364		192,003			
ANNUAL MEAN	220		526		234	
HIGHEST ANNUAL MEAN					526	2003
LOWEST ANNUAL MEAN					85.9	1934
HIGHEST DAILY MEAN	5,690	Apr 22	9,680	Sep 19	28,000	Nov 5, 1985
LOWEST DAILY MEAN	(e)10	Sep 12	31	(a)	4.4	Sep 10, 1966
ANNUAL SEVEN-DAY MINIMUM	11	Sep 7	33	Aug 26	5.3	Sep 5, 1966
MAXIMUM PEAK FLOW			15,000	Sep 19	(b)110,000	Nov 5, 1985
MAXIMUM PEAK STAGE			10.94	Sep 19	(c)19.99	Nov 5, 1985
INSTANTANEOUS LOW FLOW			30	(d)	3.1	Aug 13, 1999
ANNUAL RUNOFF (CFSM)	0.79		1.90		0.85	
ANNUAL RUNOFF (INCHES)	10.79		25.79		11.48	
10 PERCENT EXCEEDS	582		1,230		520	
50 PERCENT EXCEEDS	71		256		96	
90 PERCENT EXCEEDS	19		43		21	

a Oct. 9, Aug. 31, Sept 1.
b From rating curve extended above 39,000 ft^3/s on basis of slope-area measurement of peak flow.
c From floodmarks.
d Oct. 10, Aug. 31, Sept. 1.
e Estimated.



01608500 SOUTH BRANCH POTOMAC RIVER NEAR SPRINGFIELD, WV

LOCATION.--Lat 39°26'49", long 78°39'16", NAD27, Hampshire County, Hydrologic Unit 02070001, on left bank at highway bridge, 2.0 mi east of Springfield, and at mile 13.5.

DRAINAGE AREA.--1,486 mi^2.

PERIOD OF RECORD.--June 1894 to February 1896 (fragmentary), June 1899 to February 1902, August 1903 to July 1906, August 1928 to current year.

REVISED RECORDS.--WSP 1552: 1903-06, 1929-30(M), 1932-33(M), 1935(M), 1937-40(M), 1942-43(M), 1945(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 562.02 ft above NGVD of 1929. June 1894 to February 1896, nonrecording gage at Baltimore & Ohio Railroad bridge 11.2 mi upstream at different datum. June 26, 1899, to Feb. 2, 1902, nonrecording gage at bridge 10.0 mi upstream at different datum. Aug. 28, 1903, to July 14, 1906, nonrecording gage at present site at different datum. Aug. 8 to Sept. 24, 1928, nonrecording gage at present site and datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1877 reached a stage of about 34 ft, from floodmarks, discharge, 140,000 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 2	1600	10,400	9.44	Apr 11	2200	16,500	12.63
Feb 24	0230	21,600	15.07	May 11	1530	23,600	15.93
Mar 6	1800	17,400	13.12	Jun 9	1700	11,300	9.97
Mar 9	2300	12,200	10.44	Sep 20	0400	*67,500	*24.70
Mar 21	1800	11,100	9.83				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	574	2,970	1,060	1,910	e410	2,650	1,830	1,560	1,650	920	375	359
2	433	2,030	1,020	8,990	e400	2,830	2,100	1,670	1,890	835	363	400
3	352	1,530	915	7,520	e390	4,940	2,760	1,850	1,840	796	364	469
4	299	1,230	844	5,610	516	4,960	2,590	1,910	2,110	805	1,060	1,640
5	260	1,050	797	4,360	656	4,650	2,340	3,580	4,930	823	702	1,880
6	231	1,590	774	3,430	965	14,900	2,060	4,940	4,430	724	639	1,340
7	210	2,880	756	2,840	820	14,300	2,570	4,420	3,770	646	578	980
8	191	2,370	705	2,270	750	9,480	8,100	3,710	5,770	786	704	764
9	179	1,840	e680	1,950	668	10,300	8,210	3,480	8,230	4,050	682	640
10	175	1,500	e660	1,760	589	10,100	10,800	9,520	7,030	2,600	1,690	553
11	194	1,280	762	1,590	600	6,500	12,400	21,200	4,440	2,080	4,380	488
12	242	1,370	1,510	1,400	581	4,760	12,800	12,400	3,260	1,550	3,680	435
13	351	4,130	2,850	1,220	530	4,340	8,880	6,950	3,930	1,200	3,310	426
14	406	4,370	6,770	1,130	463	6,930	6,300	5,050	5,780	960	2,070	439
15	361	2,940	6,120	1,100	e400	6,540	4,690	3,690	3,960	926	1,510	434
16	466	2,210	4,370	1,010	e360	4,900	3,650	3,750	3,030	977	1,170	415
17	1,950	2,520	3,520	833	321	4,370	3,030	3,030	2,860	873	961	398
18	2,440	4,080	2,780	801	391	4,190	2,560	2,720	5,040	732	849	439
19	1,480	3,390	2,270	e740	527	3,800	2,750	4,770	4,830	646	735	22,700
20	1,060	2,670	2,190	e700	764	3,930	2,800	5,210	5,480	598	637	34,700
21	828	2,230	8,010	e660	892	9,710	2,520	3,980	8,030	547	563	9,360
22	684	2,220	5,780	e620	1,530	8,140	2,620	3,410	5,400	495	504	5,760
23	576	2,430	3,890	e600	15,100	5,450	2,520	2,910	3,780	461	455	5,640
24	493	2,190	2,920	e570	16,500	3,970	2,210	2,570	2,790	438	412	4,590
25	439	1,870	2,440	e540	8,660	3,110	1,970	2,270	2,160	417	379	3,110
26	453	1,620	2,110	e520	5,840	2,600	1,880	1,980	1,750	383	352	2,370
27	540	1,450	1,760	e490	4,060	2,370	1,810	1,810	1,480	355	341	1,970
28	637	1,360	1,480	e470	3,200	2,000	1,910	1,740	1,290	342	342	2,280
29	642	1,220	1,350	e450	---	1,750	1,790	1,720	1,150	615	329	1,890
30	3,530	1,110	1,300	e440	---	1,670	1,650	1,580	1,030	532	337	1,560
31	5,200	---	1,260	e420	---	1,780	---	1,620	---	404	358	---
TOTAL	25,876	65,650	73,653	56,944	66,883	171,920	124,100	131,000	113,120	28,516	30,831	108,429
MEAN	835	2,188	2,376	1,837	2,389	5,546	4,137	4,226	3,771	920	995	3,614
MAX	5,200	4,370	8,010	8,990	16,500	14,900	12,800	21,200	8,230	4,050	4,380	34,700
MIN	175	1,050	660	420	321	1,670	1,650	1,560	1,030	342	329	359
CFSM	0.56	1.47	1.60	1.24	1.61	3.73	2.78	2.84	2.54	0.62	0.67	2.43
IN.	0.65	1.64	1.84	1.43	1.67	4.30	3.11	3.28	2.83	0.71	0.77	2.71

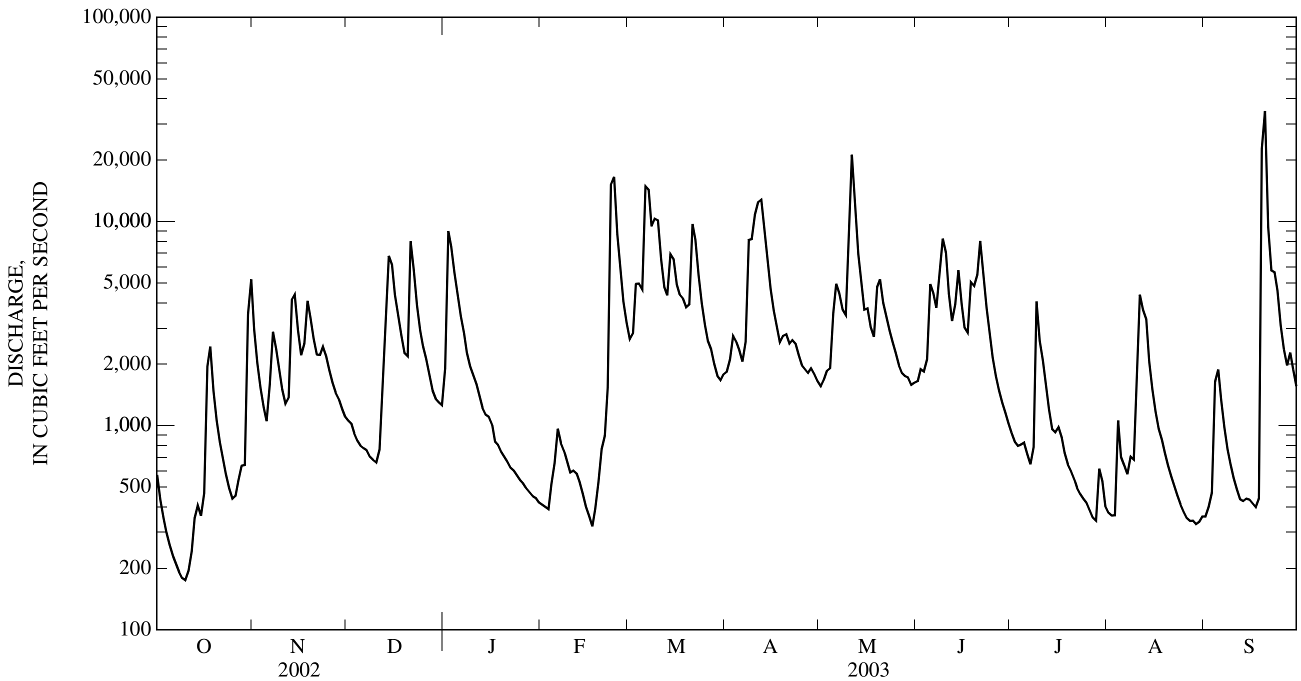
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1899 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	611	857	1,228	1,626	2,039	3,026	2,387	1,844	1,045	529	546	503
MAX	4,629	12,850	5,000	6,928	6,474	10,490	6,421	5,785	5,231	2,638	3,923	6,538
(WY)	(1977)	(1986)	(1973)	(1996)	(1998)	(1936)	(1987)	(1996)	(1949)	(1949)	(1955)	(1996)
MIN	79.4	82.2	147	271	330	791	829	366	217	86.7	73.5	76.6
(WY)	(1931)	(1905)	(1966)	(1981)	(2002)	(1981)	(1976)	(1977)	(1999)	(1999)	(1930)	(1930)

01608500 SOUTH BRANCH POTOMAC RIVER NEAR SPRINGFIELD, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1899 - 2003	
ANNUAL TOTAL	450,257		996,922			
ANNUAL MEAN	1,234		2,731		1,350	
HIGHEST ANNUAL MEAN					2,975	1996
LOWEST ANNUAL MEAN					566	1969
HIGHEST DAILY MEAN	17,800	Apr 23	34,700	Sep 20	145,000	Nov 5, 1985
LOWEST DAILY MEAN	74	Sep 15	175	Oct 10	52	(a)
ANNUAL SEVEN-DAY MINIMUM	77	Sep 11	203	Oct 6	54	Sep 7, 1966
MAXIMUM PEAK FLOW			67,500	Sep 20	(b)240,000	Nov 5, 1985
MAXIMUM PEAK STAGE			24.70	Sep 20	(a)44.22	Nov 5, 1985
INSTANTANEOUS LOW FLOW			143	Feb 17	29	(d)
ANNUAL RUNOFF (CFSM)	0.83		1.84		0.91	
ANNUAL RUNOFF (INCHES)	11.27		24.96		12.34	
10 PERCENT EXCEEDS	2,940		5,800		3,060	
50 PERCENT EXCEEDS	514		1,720		652	
90 PERCENT EXCEEDS	131		408		152	

a Sept. 11, 12, 1966.
b From rating curve extended above 145,000 ft^3/s on basis of slope-area measurement of peak flow.
c From floodmarks.
d Jan. 28, 1956 (result of freeze-up), July 30, 1966 (result of temporary dam).
e Estimated.



01610000 POTOMAC RIVER AT PAW PAW, WV

LOCATION.--Lat 39°32'20.1", long 78°27'23.0", Allegany County, Md., Hydrologic Unit 02070003, on left bank 250 ft upstream from bridge on Maryland State Highway 51 at Paw Paw, 3.3 mi downstream from Little Cacapon River, and at mile 277.

DRAINAGE AREA.--3,129 mi^2.

PERIOD OF RECORD.--October 1938 to current year.

REVISED RECORDS.--WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 487.88 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 25, 1939, nonrecording gage at bridge 250 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Low flow affected by Stony River Reservoir prior to July 1981, since December 1950 by Savage River Reservoir (see station 01597500), and since July 1981 by Jennings Randolph Lake. National Weather Service gage-height telemeter at station. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 54.0 ft on Mar. 18, 1936, discharge, 240,000 ft^3/s, from rating curve extended above 85,000 ft^3/s on basis of slope-area measurement of peak flow at site 5.0 mi upstream at Okonoko, WV.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 2	1030	30,500	19.19	Apr 12	0000	28,700	18.58
Feb 24	0730	27,200	18.05	May 11	1630	40,100	22.24
Mar 6	2230	33,200	20.07	Jun 4	1100	21,300	15.91
Mar 10	0100	28,000	18.33	Sep 20	0900	*60,500	*27.91
Mar 21	0800	27,400	18.14	Sep 23	1330	21,900	16.14

Minimum discharge, 509 ft^3/s, Oct. 10.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,270	5,880	2,770	6,870	1,730	6,360	4,750	3,270	10,100	2,530	1,370	1,660
2	1,010	4,310	2,680	27,000	1,720	6,120	5,020	3,400	8,860	2,330	1,310	2,290
3	846	3,430	2,480	19,900	1,680	7,990	5,580	3,520	8,700	2,220	1,280	4,040
4	746	2,850	2,280	15,500	1,780	8,820	5,490	3,490	19,300	2,180	2,240	5,760
5	672	2,510	2,220	11,800	1,860	8,240	5,620	5,560	15,600	2,150	2,310	9,670
6	607	3,990	2,230	9,590	2,160	23,600	5,970	9,330	12,100	2,000	2,220	5,600
7	560	5,890	2,120	7,670	2,190	28,000	7,850	7,960	12,800	2,170	2,050	4,060
8	528	5,100	2,170	6,490	2,020	20,600	17,500	7,710	17,400	1,990	2,040	3,540
9	514	4,500	2,130	6,040	1,870	22,600	17,800	11,400	17,100	6,130	1,840	2,570
10	510	4,170	2,130	5,580	1,850	24,500	22,500	22,600	14,700	7,430	2,430	1,880
11	638	3,770	2,260	5,090	1,780	16,500	22,800	38,100	10,300	6,890	5,340	1,710
12	1,090	3,740	3,660	4,540	1,770	12,900	24,700	27,400	8,060	5,580	5,360	1,560
13	1,260	7,570	6,020	4,020	1,560	12,800	17,600	15,100	14,400	4,890	4,840	1,520
14	1,140	8,780	11,700	3,750	1,530	18,600	13,300	12,000	14,400	3,710	3,710	1,970
15	1,000	6,590	12,200	3,550	1,690	17,300	11,300	9,220	11,000	3,260	3,080	2,350
16	1,410	5,440	9,380	3,110	1,690	14,500	8,940	13,300	9,040	2,910	2,650	2,360
17	3,490	6,440	7,780	2,940	e1,800	14,200	7,190	12,500	7,860	2,540	2,520	2,200
18	4,320	9,310	6,350	2,650	e2,000	14,100	6,130	10,500	10,000	2,210	2,530	2,250
19	2,920	8,210	5,360	2,520	e2,150	12,800	5,850	11,300	10,000	1,950	2,100	31,700
20	2,190	6,850	5,130	2,540	e2,200	13,700	5,960	11,200	10,500	1,790	1,680	48,500
21	1,790	6,050	11,300	2,430	2,550	25,900	5,410	9,410	17,700	1,680	1,520	21,500
22	1,500	5,780	11,400	2,080	3,880	19,800	5,640	8,030	13,500	1,560	1,400	15,700
23	1,290	5,630	9,000	1,960	17,800	14,300	5,500	6,980	9,890	1,500	1,270	19,700
24	1,120	5,140	7,490	1,730	23,800	11,000	4,840	6,570	7,670	1,600	1,110	13,200
25	1,020	4,480	6,400	1,880	15,000	8,610	4,330	5,990	5,900	1,440	1,040	9,290
26	1,500	3,900	5,640	1,950	11,300	7,200	4,230	6,930	4,840	1,310	1,030	6,980
27	1,980	3,580	4,700	1,830	8,750	6,210	4,250	6,710	4,040	1,220	1,090	5,560
28	1,800	3,320	4,040	1,760	7,240	5,330	4,060	6,510	3,510	1,200	1,330	12,200
29	1,750	3,060	3,750	1,800	---	4,760	3,670	6,700	3,170	1,770	1,380	8,410
30	6,020	2,880	3,590	1,810	---	4,610	3,440	6,000	2,850	2,160	1,520	6,310
31	9,180	---	3,480	1,760	---	4,730	---	6,100	---	1,440	1,590	---
TOTAL	55,671	153,150	163,840	172,140	127,350	416,680	267,220	314,790	315,290	83,740	67,180	256,040
MEAN	1,796	5,105	5,285	5,553	4,548	13,440	8,907	10,150	10,510	2,701	2,167	8,535
MAX	9,180	9,310	12,200	27,000	23,800	28,000	24,700	38,100	19,300	7,430	5,360	48,500
MIN	510	2,510	2,120	1,730	1,530	4,610	3,440	3,270	2,850	1,200	1,030	1,520
CFSM	0.57	1.63	1.69	1.77	1.45	4.30	2.85	3.25	3.36	0.86	0.69	2.73
IN.	0.66	1.82	1.95	2.05	1.51	4.95	3.18	3.74	3.75	1.00	0.80	3.04

e Estimated

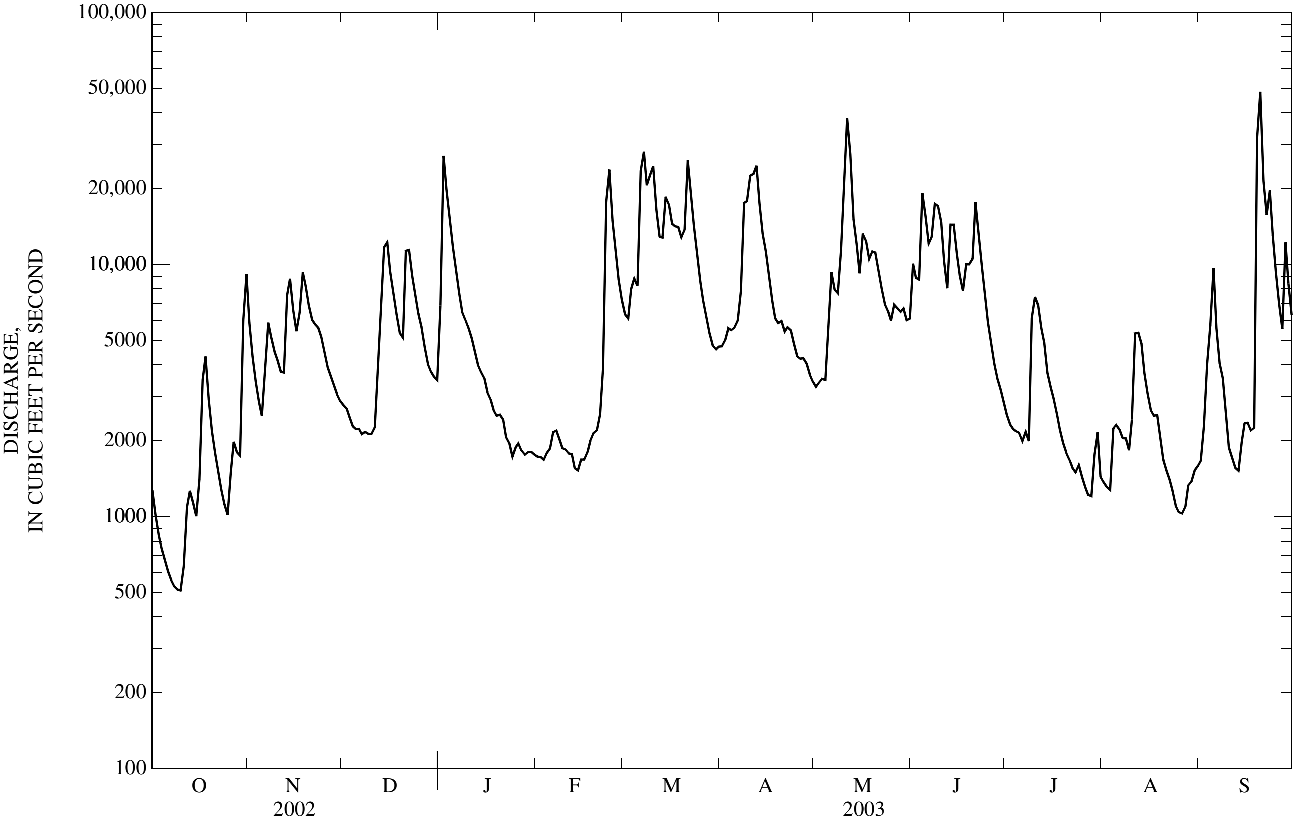
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,492	2,038	3,267	3,955	5,275	7,508	6,039	4,569	2,658	1,372	1,281	1,256
MAX	9,709	17,180	12,300	13,040	14,040	17,440	15,620	11,210	10,510	5,071	6,775	12,080
(WY)	(1977)	(1986)	(1973)	(1996)	(1998)	(1994)	(1993)	(1996)	(2003)	(1949)	(1996)	(1996)
MIN	261	327	388	679	853	2,043	1,882	1,074	544	303	278	252
(WY)	(1952)	(1966)	(1966)	(1981)	(2002)	(1990)	(1995)	(1941)	(1965)	(1966)	(1944)	(1959)

01610000 POTOMAC RIVER AT PAW PAW, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939 - 2003	
ANNUAL TOTAL	1,082,194		2,393,091			
ANNUAL MEAN	2,965		6,556		3,383	
HIGHEST ANNUAL MEAN					6,556	2003
LOWEST ANNUAL MEAN					1,499	1969
HIGHEST DAILY MEAN	26,000	Apr 23	48,500	Sep 20	125,000	Nov 6, 1985
LOWEST DAILY MEAN	(e)440	(a)	510	Oct 10	172	(b)
ANNUAL SEVEN-DAY MINIMUM	444	Jan 1	576	Oct 5	179	Sep 7, 1966
MAXIMUM PEAK FLOW			60,500	Sep 20	(c)235,000	Nov 5, 1985
MAXIMUM PEAK STAGE			27.91	Sep 20	53.58	Nov 5, 1985
INSTANTANEOUS LOW FLOW			509	Oct 10	164	(d)
ANNUAL RUNOFF (CFSM)	0.95		2.10		1.08	
ANNUAL RUNOFF (INCHES)	12.87		28.45		14.69	
10 PERCENT EXCEEDS	7,010		14,800		7,720	
50 PERCENT EXCEEDS	1,360		4,480		1,800	
90 PERCENT EXCEEDS	580		1,500		450	

e Estimated
a Jan. 2-6.
b Sept. 10, 12, 13, 1966.
c From rating curve extended above 85,000 ft^3/s on basis of slope-area measurement of peak flow at site 5.0 mi upstream at Okonoko, WV.
d Sept 10, 11, 1966.



DAILY MEAN DISCHARGE - 2003 WATER YEAR

01610400 WAITES RUN NEAR WARDENSVILLE, WV

LOCATION.--Lat 39°02'33.8", long 78°35'54.0", Hardy County, Hydrologic Unit 02070003, on left bank at downstream side of bridge on Waites Run Road, 2.6 mi south of Wardensville, 4.3 mi upstream from mouth, and 8.2 mi east of Baker.

DRAINAGE AREA.--12.6 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1240.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good except those for estimated daily discharges (missing record, ice effect), which are poor. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR JANUARY 2002 TO SEPTEMBER 2002.--Peak discharges greater than base discharge of 140 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	0930	*147	*4.35	No other peak greater than base discharge.			

Minimum discharge, UNKNOWN.

DISCHARGE, CUBIC FEET PER SECOND
JANUARY 2002 TO SEPTEMBER 2002
DAILY MEAN VALUES

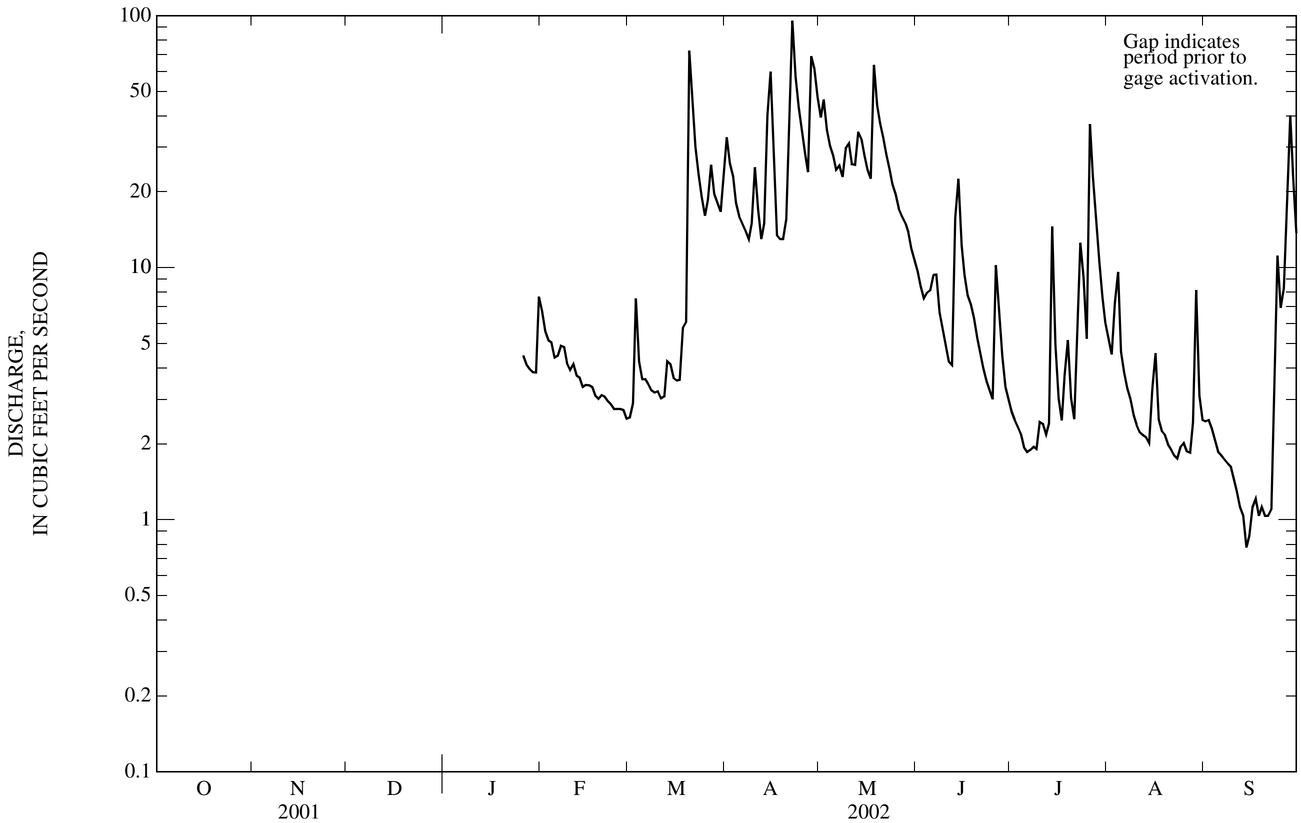
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	6.7	2.5	33	39	9.6	2.7	5.2	2.5
2	---	---	---	---	5.6	2.9	26	46	8.4	2.5	4.5	2.5
3	---	---	---	---	5.1	7.5	23	35	7.5	2.3	7.3	2.3
4	---	---	---	---	5.1	4.2	e18	30	7.9	2.2	9.6	2.1
5	---	---	---	---	4.4	3.6	e16	28	8.1	1.9	4.6	1.9
6	---	---	---	---	4.5	3.6	e15	24	9.4	1.9	3.8	1.8
7	---	---	---	---	4.9	3.4	e14	25	9.4	1.9	3.3	1.7
8	---	---	---	---	4.8	3.3	e13	23	6.6	1.9	3.0	1.7
9	---	---	---	---	4.2	3.2	e15	30	5.7	1.9	2.6	1.6
10	---	---	---	---	3.9	3.2	e25	31	4.9	2.4	2.4	1.5
11	---	---	---	---	4.1	3.0	e17	26	4.2	2.4	2.2	e1.3
12	---	---	---	---	3.7	3.1	e13	26	4.1	2.2	2.2	e1.1
13	---	---	---	---	3.7	4.2	e15	35	16	2.4	2.1	e1.0
14	---	---	---	---	3.4	4.1	e40	32	22	15	2.0	e0.78
15	---	---	---	---	3.4	3.7	e60	28	12	5.0	3.3	e0.86
16	---	---	---	---	3.4	3.6	e33	24	9.4	3.0	4.6	e1.1
17	---	---	---	---	3.4	3.6	13	23	7.7	2.5	2.5	e1.2
18	---	---	---	---	3.1	5.8	13	64	7.1	3.8	2.2	e1.0
19	---	---	---	---	3.0	6.1	13	44	6.3	5.2	2.2	e1.1
20	---	---	---	---	3.1	72	16	37	5.3	3.0	2.0	e1.0
21	---	---	---	---	3.1	45	35	33	4.6	2.5	1.9	e1.0
22	---	---	---	---	3.0	30	95	28	4.0	5.5	1.8	e1.1
23	---	---	---	---	2.9	23	57	24	3.5	13	1.8	e5.4
24	---	---	---	---	2.7	19	43	21	3.2	9.2	1.9	e11
25	---	---	---	---	2.8	16	35	19	3.0	5.2	2.0	e6.9
26	---	---	---	4.5	2.8	19	28	17	10	37	1.9	e8.3
27	---	---	---	4.1	2.7	26	24	16	6.9	23	1.8	e19
28	---	---	---	4.0	2.5	20	69	15	4.5	16	2.4	e40
29	---	---	---	3.9	---	18	61	14	3.4	11	8.1	e23
30	---	---	---	3.8	---	17	47	12	3.0	7.6	3.1	e14
31	---	---	---	7.7	---	24	---	11	---	6.1	2.5	---
TOTAL	---	---	---	---	106.0	403.6	925	860	217.7	202.2	100.8	159.74
MEAN	---	---	---	---	3.79	13.0	30.8	27.7	7.26	6.52	3.25	5.32
MAX	---	---	---	---	6.7	72	95	64	22	37	9.6	40
MIN	---	---	---	---	2.5	2.5	13	11	3.0	1.9	1.8	0.78
CFSM	---	---	---	---	0.30	1.03	2.45	2.20	0.58	0.52	0.26	0.42
IN.	---	---	---	---	0.31	1.19	2.73	2.54	0.64	0.60	0.30	0.47

e Estimated.

STATISTICS OF MONTHLY MEAN DATA FOR JANUARY 2002 TO SEPTEMBER 2002

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	---	---	---	---	3.79	13.0	30.8	27.7	7.26	6.52	3.25	5.32
MAX	---	---	---	---	3.79	13.0	30.8	27.7	7.26	6.52	3.25	5.32
(WY)	(---)	(---)	(---)	(---)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)
MIN	---	---	---	---	3.79	13.0	30.8	27.7	7.26	6.52	3.25	5.32
(WY)	(---)	(---)	(---)	(---)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)

01610400 WAITES RUN NEAR WARDENSVILLE, WV—Continued



DAILY MEAN DISCHARGE - JANUARY 2002 TO SEPTEMBER 2002

EXTREMES FOR 2003 WATER YEAR.--Peak discharges greater than base discharge of 140 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 1	----	470	a5.20	Jun 12	1815	230	4.72
Feb 23	0630	290	4.87	Jun 13	1630	809	5.64
Mar 20	1645	413	5.11	Aug 10	2200	222	4.70
Apr 11	0415	252	4.78	Sep 19	0645	*1,380	*6.09
May 10	1515	149	4.36				

a High-water mark.

Minimum discharge, UNKNOWN.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e10	e20	14	e140	7.1	32	37	16	14	14	7.0	4.1
2	e6.0	e18	13	e90	7.5	e32	44	15	12	12	4.6	5.4
3	e3.8	e16	12	69	7.9	e31	39	13	12	17	5.7	e8.0
4	e2.6	e14	11	53	e7.6	e31	36	20	29	12	7.0	e15
5	e2.4	e54	11	43	e7.0	68	32	19	21	9.8	6.3	9.2
6	e2.2	e36	9.9	37	e6.5	94	27	19	18	9.0	4.8	6.4
7	e2.0	e22	12	32	e6.0	74	59	18	29	10	4.3	5.4
8	e2.0	e19	8.9	31	e5.7	67	47	21	26	12	4.2	4.9
9	e3.0	17	8.4	31	e5.5	83	69	26	29	12	6.4	4.7
10	e6.0	17	7.7	27	e5.3	69	67	87	22	12	24	4.5
11	e11	20	17	24	e5.1	55	156	88	20	9.6	46	4.1
12	e6.0	47	25	21	e5.0	47	99	59	55	8.1	22	4.1
13	e4.0	48	40	20	e5.0	52	72	45	179	7.4	17	8.0
14	e3.6	38	48	19	e5.1	62	57	36	119	6.7	13	8.1
15	e8.0	32	38	17	e5.2	53	48	31	93	6.3	11	6.1
16	e14	30	34	e16	e5.6	47	42	58	68	5.7	9.1	5.1
17	e10	69	27	e15	e6.5	43	36	48	72	5.2	9.2	4.5
18	e6.0	53	23	e14	e13	40	34	56	64	5.0	15	93
19	e5.0	42	23	e14	e11	35	37	53	55	5.0	8.8	679
20	e4.2	35	60	e13	e9.0	162	30	46	78	4.4	7.4	151
21	e3.6	35	57	12	e11	131	30	41	66	4.9	6.4	81
22	e3.2	37	46	e12	e40	83	40	35	54	4.7	5.9	57
23	e3.0	31	37	11	177	61	32	31	43	4.5	5.4	72
24	e2.8	28	31	e10	89	48	29	29	34	4.2	4.8	46
25	e11	24	28	e9.5	60	41	27	26	27	3.7	4.4	38
26	e10	21	24	e8.8	46	40	26	24	22	3.5	4.2	32
27	e8.0	20	20	8.3	39	34	22	21	19	3.4	5.0	28
28	e14	18	18	e8.0	34	29	20	20	16	8.4	4.6	26
29	e40	16	17	e7.7	---	28	18	18	14	6.6	4.1	21
30	e30	16	16	7.4	---	29	16	16	12	4.2	3.9	18
31	e24	---	18	6.9	---	28	---	16	---	3.8	4.0	---
TOTAL	261.4	893	754.9	827.6	632.6	1,729	1,328	1,051	1,322	235.1	285.5	1,449.6
MEAN	8.43	29.8	24.4	26.7	22.6	55.8	44.3	33.9	44.1	7.58	9.21	48.3
MAX	40	69	60	140	177	162	156	88	179	17	46	679
MIN	2.0	14	7.7	6.9	5.0	28	16	13	12	3.4	3.9	4.1
CFSM	0.67	2.36	1.93	2.12	1.79	4.43	3.51	2.69	3.50	0.60	0.73	3.83
IN.	0.77	2.64	2.23	2.44	1.87	5.10	3.92	3.10	3.90	0.69	0.84	4.28

e Estimated.

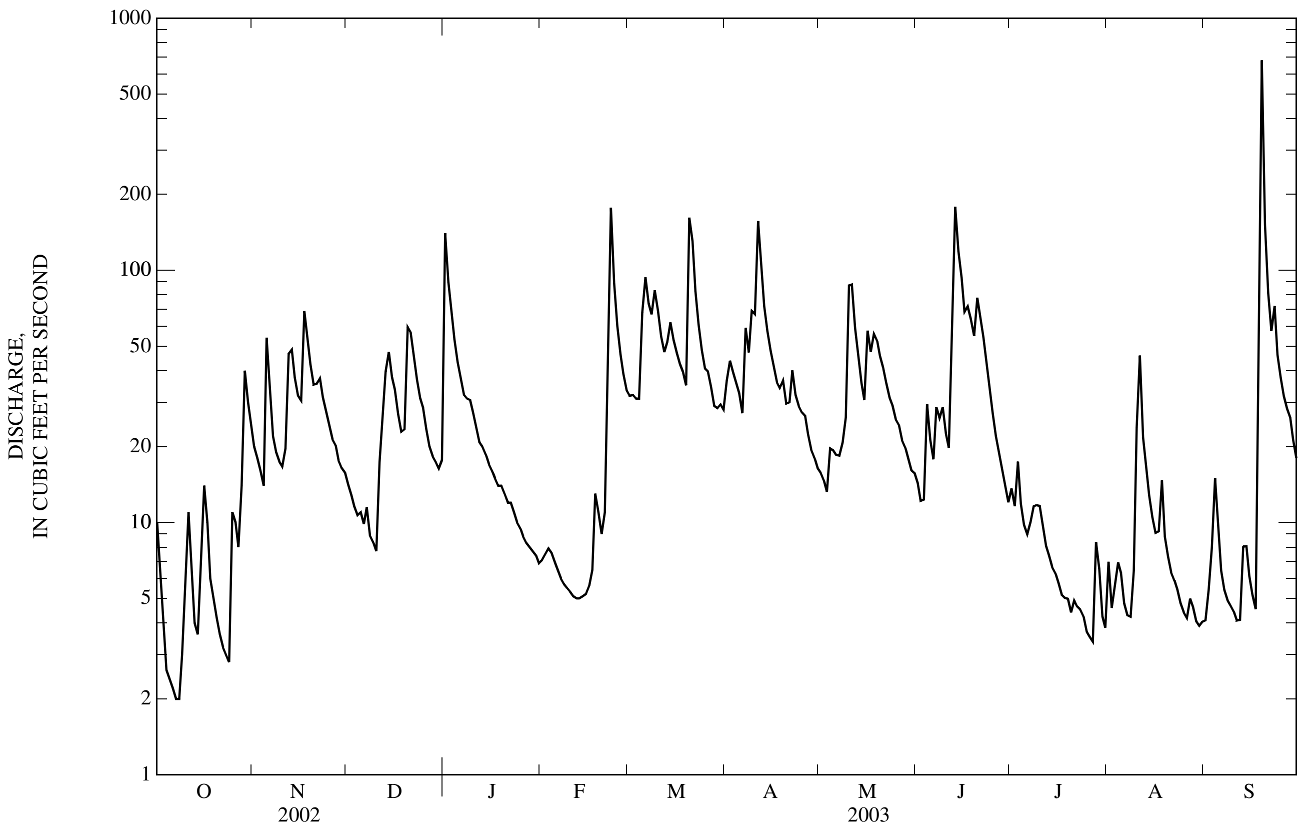
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	8.43	29.8	24.4	26.7	13.2	34.4	37.5	30.8	25.7	7.05	6.23	26.8
MAX	8.43	29.8	24.4	26.7	22.6	55.8	44.3	33.9	44.1	7.58	9.21	48.3
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)
MIN	8.43	29.8	24.4	26.7	3.79	13.0	30.8	27.7	7.26	6.52	3.25	5.32
(WY)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)

01610400 WAITES RUN NEAR WARDENSVILLE, WV—Continued

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 2002 - 2003	
ANNUAL TOTAL	10769.7			
ANNUAL MEAN	29.5		29.5	
HIGHEST ANNUAL MEAN			29.5	2003
LOWEST ANNUAL MEAN			29.5	2003
HIGHEST DAILY MEAN	679	Sep 19	679	Sep 19, 2003
LOWEST DAILY MEAN	(e)2.0	(a)	(e)0.78	Sep 14, 2002
ANNUAL SEVEN-DAY MINIMUM	2.6	Oct 3	1.0	Sep 12, 2002
MAXIMUM PEAK FLOW	1,380	Sep 19	(b)1,380	Sep 19, 2003
MAXIMUM PEAK STAGE	6.09	Sep 19	6.09	Sep 19, 2003
INSTANTANEOUS LOW FLOW	UNKNOWN		UNKNOWN	
ANNUAL RUNOFF (CFSM)	2.34		2.34	
ANNUAL RUNOFF (INCHES)	31.80		31.82	
10 PERCENT EXCEEDS	61		61	
50 PERCENT EXCEEDS	19		19	
90 PERCENT EXCEEDS	4.7		4.7	

e Estimated.
a Oct. 7, 8.
b From rating curve extended above 420 ft^3/s.



DAILY MEAN DISCHARGE - 2003 WATER YEAR

01610400 WAITES RUN NEAR WARDENSVILLE, WV—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2001 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 2002 to current year.
WATER TEMPERATURE: January 2002 to current year.

INSTRUMENTATION.--Water-quality monitor January 2002 to current year.

REMARKS.--Missing record due to instrument malfunctions. Records good.

EXTREMES FOR PERIOD OF DAILY RECORD--
SPECIFIC CONDUCTANCE: Maximum, 109 microsiemens/cm, Sept. 10, 2002; minimum, 23 microsiemens/cm, Feb. 22, 2003.
WATER TEMPERATURE: Maximum, 24.5°C, July 3, 2002; minimum, 0.0°C, on many day during winter periods.

EXTREMES FOR JANUARY 2002 TO SEPTEMBER 2002.--
SPECIFIC CONDUCTANCE: Maximum, 109 microsiemens/cm, Sept. 10; minimum, 27 microsiemens/cm, May 1, 13, 20-22.
WATER TEMPERATURE: Maximum, 24.5°C, July 3; minimum, 0.0°C, Feb. 5, 28, March 1, 4, 5.

EXTREMES FOR WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003.--
SPECIFIC CONDUCTANCE: Maximum, 82 microsiemens/cm, July 28; minimum, 23 microsiemens/cm, Feb. 22.
WATER TEMPERATURE: Maximum, 22.4°C, July 27, Aug. 22; minimum 0.0°C, on many day during winter periods.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instan-taneous dis-charge, cfs (00061)	Baro-metric pres-sure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of sat-uration (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, air, deg C (00020)	Temper-ature, water, deg C (00010)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)
OCT												
15...	1300	Environmental	3.8	729	10.5	100	7.4	64	13.5	11.3	23	28
NOV												
05...	1300	Environmental	15	728	13.2	116	6.8	38	7.0	7.7	13	15
DEC												
10...	1235	Environmental	8.6	733	17.8	132	6.7	40	4.0	1.4	15	19
JAN												
09...	1320	Environmental	31	713	13.0	110	6.6	29	18.0	5.6	8	10
FEB												
11...	1145	Environmental	8.6	723	16.4	121	6.0	50	2.0	0.9	25	31
MAR												
06...	1200	Environmental	94	720	13.6	110	6.1	26	5.0	4.2	4	5
APR												
01...	1145	Environmental	27	724	15.7	134	6.5	32	14.0	6.5	7	9
MAY												
08...	*1000*	*Blank*	--	--	--	--	--	--	--	--	--	--
08...	1030	Environmental	20	727	9.6	98	5.8	35	21.0	14.0	10	13
JUN												
05...	1115	Environmental	22	729	10.0	100	6.2	36	19.0	13.3	11	13
05...	*1116*	*Replicate*	--	--	--	--	--	--	--	--	*10*	*12*
JUL												
10...	1030	Environmental	11	729	8.1	92	6.5	43	22.0	19.1	16	19
AUG												
04...	1115	Environmental	6.0	730	7.8	89	6.8	68	26.0	19.8	27	32
05...	1600	Environmental	--	--	--	--	--	--	--	--	--	--
SEP												
02...	1015	Environmental	4.2	734	8.6	97	7.3	69	23.0	19.7	26	32

01610400 WAITES RUN NEAR WARDENSVILLE, WV—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrate water, fltrd, mg/L as N (00618)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Periphyton biomass ash weight, g/m2 (00572)
OCT													
15...	1.34	5.3	E.06	<0.04	--	0.07	<0.008	<0.02	0.007	--	<0.1	1.6	--
NOV													
05...	0.59	5.4	E.06	<0.04	--	0.20	<0.008	<0.02	E.004	--	<0.1	1.5	--
DEC													
10...	0.70	4.8	<0.10	<0.04	--	0.14	<0.008	<0.02	E.004	--	<0.1	1.1	--
JAN													
09...	0.43	5.0	<0.10	<0.04	--	0.21	<0.008	<0.02	0.005	--	<0.1	1.5	--
FEB													
11...	0.44	5.2	E.09	<0.04	--	0.15	<0.008	<0.02	0.004	--	0.2	0.8	--
MAR													
06...	0.68	5.9	0.12	<0.04	--	0.32	<0.008	<0.02	0.007	0.44	0.2	2.0	--
APR													
01...	0.57	5.2	E.08	<0.04	--	0.15	<0.008	<0.02	0.017	--	0.6	1.6	--
MAY													
08...	*<0.20*	*<0.2*	*<0.10*	*<0.04*	--	*<0.06*	*<0.008*	*<0.02*	*<0.004*	--	*<0.1*	*<0.3*	--
08...	0.61	4.9	E.06	<0.04	--	0.09	<0.008	<0.02	0.008	--	0.3	1.5	--
JUN													
05...	0.57	4.9	0.31	<0.04	--	0.17	<0.008	--	0.014	0.48	0.4	1.6	--
05...	*0.57*	*4.9*	*0.14*	*<0.04*	--	*0.16*	*<0.008*	--	*0.009*	*0.30*	*0.4*	*1.5*	--
JUL													
10...	0.60	4.2	0.11	<0.04	0.10	0.11	0.008	<0.02	0.009	0.22	0.4	2.3	--
AUG													
04...	0.63	4.3	0.13	<0.04	--	0.09	<0.008	<0.02	0.015	0.22	0.2	2.1	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	6.0
SEP													
02...	0.61	4.5	E.07	<0.04	--	0.07	<0.008	<0.02	0.008	--	0.2	1.4	--

Date	Periphyton biomass dry weight, g/m2 (00573)	Pheophytin a, periphyton, mg/m2 (62359)	Chlorophyll a periphyton, chromofluoro, mg/m2 (70957)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
OCT					
15...	--	--	--	2	0.03
NOV					
05...	--	--	--	1	0.05
DEC					
10...	--	--	--	M	0.01
JAN					
09...	--	--	--	M	0.07
FEB					
11...	--	--	--	2	0.04
MAR					
06...	--	--	--	6	1.6
APR					
01...	--	--	--	2	0.12
MAY					
08...	--	--	--	*M*	--
08...	--	--	--	4	0.22
JUN					
05...	--	--	--	1	0.07
05...	--	--	--	*3*	--
JUL					
10...	--	--	--	5	0.14
AUG					
04...	--	--	--	8	0.12
05...	6.200	<0.1	0.2	--	--
SEP					
02...	--	--	--	2	0.02

Remark codes used in this table:
< -- Less than
E -- Estimated value
M-- Presence verified, not quantified

01610400 WAITES RUN NEAR WARDENSVILLE, WV—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
JANUARY 2002 TO SEPTEMBER 2002

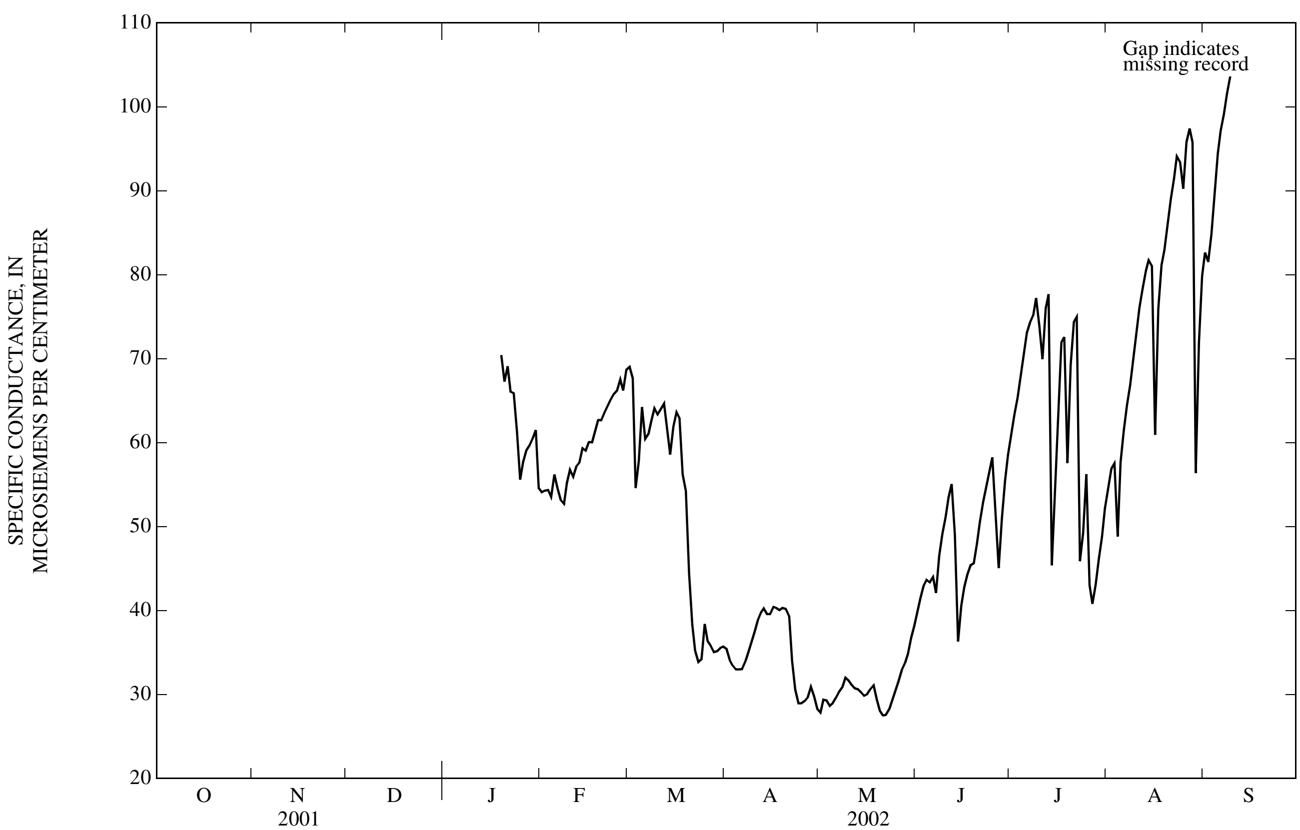
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	72	69	70
20	---	---	---	---	---	---	---	---	---	70	65	67
21	---	---	---	---	---	---	---	---	---	71	68	69
22	---	---	---	---	---	---	---	---	---	70	63	66
23	---	---	---	---	---	---	---	---	---	69	64	66
24	---	---	---	---	---	---	---	---	---	64	57	61
25	---	---	---	---	---	---	---	---	---	57	54	56
26	---	---	---	---	---	---	---	---	---	60	57	58
27	---	---	---	---	---	---	---	---	---	61	58	59
28	---	---	---	---	---	---	---	---	---	62	58	60
29	---	---	---	---	---	---	---	---	---	63	58	60
30	---	---	---	---	---	---	---	---	---	63	60	62
31	---	---	---	---	---	---	---	---	---	62	50	55
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	55	53	54	76	65	69	38	35	35	29	27	28
2	55	53	54	70	66	68	35	34	34	31	28	29
3	56	53	54	69	48	55	34	33	33	31	29	29
4	55	52	54	62	56	58	33	33	33	29	28	29
5	63	52	56	76	56	64	33	33	33	30	28	29
6	56	54	55	64	58	60	34	32	33	30	29	30
7	55	52	53	65	59	61	35	33	34	31	29	30
8	55	51	53	65	60	63	36	34	35	32	30	31
9	57	54	55	67	61	64	37	36	36	34	29	32
10	59	55	57	66	61	63	39	37	37	32	31	32
11	58	53	56	66	62	64	40	38	39	32	30	31
12	59	56	57	67	62	65	41	39	40	32	30	31
13	59	56	58	66	57	62	41	39	40	33	27	31
14	66	56	59	63	57	59	41	38	40	31	30	30
15	62	57	59	65	59	62	41	38	40	30	29	30
16	62	58	60	65	61	64	41	39	40	31	29	30
17	62	58	60	65	61	63	41	39	40	31	30	31
18	65	60	61	62	52	56	41	39	40	34	30	31
19	69	58	63	56	53	54	43	39	40	31	28	29
20	65	60	63	55	40	44	43	39	40	29	27	28
21	67	61	64	40	37	38	44	36	39	28	27	28
22	67	62	64	37	34	35	38	32	34	28	27	28
23	67	63	65	34	33	34	32	29	31	29	28	28
24	68	64	66	35	34	34	30	28	29	31	28	29
25	70	64	66	40	35	38	29	28	29	32	30	30
26	69	65	67	40	33	36	30	29	29	33	31	32
27	69	63	66	36	35	36	30	29	30	34	32	33
28	70	67	69	36	35	35	32	30	31	34	33	34
29	---	---	---	36	35	35	31	29	30	37	34	35
30	---	---	---	36	35	36	29	28	28	41	36	37
31	---	---	---	37	34	36	---	---	---	40	37	38
MONTH	70	51	60	76	33	52	44	28	35	41	27	31

01610400 WAITES RUN NEAR WARDENSVILLE, WV—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
JANUARY 2002 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	42	39	40	63	59	61	57	53	55	84	81	83
2	43	40	41	65	61	63	59	55	57	84	80	82
3	45	41	43	67	63	65	61	40	57	87	84	85
4	45	41	44	69	66	68	56	42	49	91	87	90
5	47	40	43	72	69	71	62	56	58	96	91	94
6	48	36	44	74	72	73	64	59	61	98	96	97
7	45	38	42	76	73	74	66	63	64	101	97	99
8	49	44	47	76	73	75	69	65	67	104	100	102
9	51	48	49	79	75	77	72	68	70	106	102	104
10	54	49	51	79	66	74	74	71	73	109	104	106
11	56	51	53	74	67	70	78	74	76	---	---	---
12	57	53	55	78	74	76	80	76	78	---	---	---
13	59	29	49	80	70	78	82	78	80	---	---	---
14	40	33	36	70	34	45	83	80	82	---	---	---
15	42	40	41	61	48	54	88	51	81	---	---	---
16	44	42	43	69	61	65	73	51	61	---	---	---
17	46	43	44	74	69	72	80	73	76	---	---	---
18	46	44	45	77	48	73	83	79	81	---	---	---
19	48	44	46	66	48	58	85	81	83	---	---	---
20	50	47	48	73	66	69	87	84	86	---	---	---
21	53	49	51	77	73	74	91	87	89	---	---	---
22	54	51	53	79	36	75	92	90	91	---	---	---
23	56	53	55	53	36	46	96	92	94	---	---	---
24	58	54	56	54	44	49	96	86	93	---	---	---
25	60	56	58	58	53	56	93	87	90	---	---	---
26	62	32	52	57	33	43	97	93	96	---	---	---
27	51	38	45	43	39	41	98	97	97	---	---	---
28	54	49	51	46	41	43	99	76	96	---	---	---
29	58	54	56	49	45	46	76	50	56	---	---	---
30	60	57	59	51	47	49	78	66	72	---	---	---
31	---	---	---	55	51	52	83	78	80	---	---	---
MONTH	62	29	48	80	33	62	99	40	76	---	---	---



DAILY MEAN SPECIFIC CONDUCTANCE - JANUARY 2002 TO SEPTEMBER 2002

01610400 WAITES RUN NEAR WARDENSVILLE, WV—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
JANUARY 2002 TO SEPTEMBER 2002

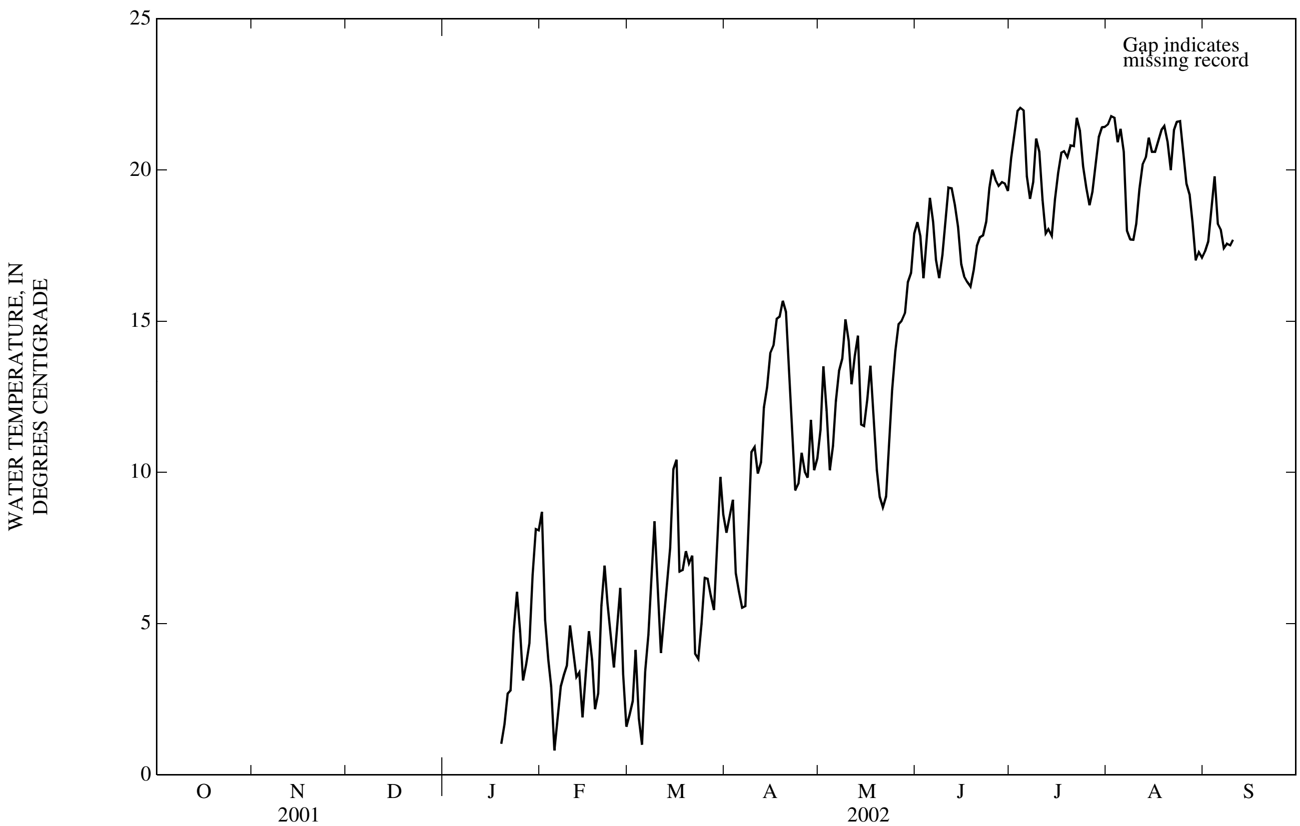
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	1.3	0.4	1.0
20	---	---	---	---	---	---	---	---	---	2.9	0.5	1.7
21	---	---	---	---	---	---	---	---	---	4.0	1.5	2.7
22	---	---	---	---	---	---	---	---	---	4.4	1.5	2.8
23	---	---	---	---	---	---	---	---	---	6.5	3.1	4.8
24	---	---	---	---	---	---	---	---	---	7.1	4.9	6.0
25	---	---	---	---	---	---	---	---	---	6.5	2.9	4.7
26	---	---	---	---	---	---	---	---	---	4.9	1.7	3.1
27	---	---	---	---	---	---	---	---	---	5.7	2.1	3.7
28	---	---	---	---	---	---	---	---	---	6.4	2.5	4.4
29	---	---	---	---	---	---	---	---	---	8.4	4.8	6.6
30	---	---	---	---	---	---	---	---	---	8.7	7.8	8.1
31	---	---	---	---	---	---	---	---	---	8.6	7.6	8.1
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	10.7	6.6	8.7	5.0	0.0	2.0	9.7	6.9	8.0	13.5	9.4	11.4
2	6.6	3.6	5.1	3.1	1.7	2.4	10.7	6.4	8.5	15.2	11.8	13.5
3	5.0	2.9	3.8	6.4	2.6	4.1	9.9	6.9	9.1	13.4	10.4	12.1
4	3.6	1.0	2.9	3.6	0.0	1.9	8.5	5.2	6.7	11.6	8.7	10.1
5	2.0	0.0	0.8	3.1	0.0	1.0	7.9	4.8	6.1	13.2	8.4	10.9
6	3.2	0.4	1.9	6.6	1.0	3.4	7.0	4.4	5.5	13.8	10.6	12.4
7	4.2	2.0	2.9	6.7	2.5	4.6	8.1	3.3	5.6	14.1	12.6	13.4
8	5.4	1.9	3.3	9.4	3.8	6.3	11.3	6.1	8.6	14.8	12.6	13.8
9	5.7	2.0	3.6	10.7	5.9	8.4	11.6	9.8	10.7	16.5	14.0	15.1
10	6.8	2.9	4.9	9.0	3.5	5.9	13.3	9.3	10.8	15.7	13.1	14.3
11	5.8	2.2	4.1	6.5	2.0	4.0	13.0	7.5	10	14.5	11.2	12.9
12	5.5	1.6	3.2	6.5	3.7	5.1	12.7	8.1	10.3	14.7	12.8	13.8
13	5.2	1.7	3.4	7.1	5.9	6.3	13.9	11.2	12.1	15.6	13.3	14.5
14	4.0	0.1	1.9	10.6	4.9	7.5	14.7	10.9	12.8	13.3	10.4	11.6
15	5.3	1.8	3.3	13.0	7.7	10.1	16.1	12.4	13.9	13.4	9.9	11.5
16	6.5	3.6	4.7	11.3	8.6	10.4	15.9	12.3	14.2	14.4	10.2	12.4
17	4.7	2.1	3.8	8.6	5.8	6.7	17.5	12.9	15.1	14.2	12.9	13.5
18	4.3	0.4	2.2	8.1	5.6	6.8	16.6	13.7	15.1	13.6	10.2	11.6
19	5.0	0.3	2.7	8.3	6.7	7.4	17.6	13.9	15.7	10.9	9.3	10.1
20	7.1	4.0	5.6	7.7	6.2	7.0	16.1	14.6	15.3	10.1	8.1	9.2
21	8.8	5.8	6.9	8.9	5.8	7.2	14.6	10.7	12.9	9.8	8.0	8.8
22	6.6	4.6	5.7	5.8	2.9	4.0	13.1	10.1	11.3	11.2	7.1	9.2
23	6.5	3.0	4.6	5.9	2.1	3.8	10.1	8.4	9.4	13.1	8.6	10.9
24	6.2	1.3	3.6	6.8	3.1	5.0	11.9	7.3	9.6	14.9	10.5	12.7
25	7.4	2.4	4.8	8.5	4.8	6.5	11.7	9.6	10.6	15.2	13.0	14.0
26	8.6	4.2	6.2	7.0	6.1	6.5	12.1	8.5	10.0	16.1	14.0	14.9
27	5.4	0.8	3.3	7.0	4.8	5.9	11.0	8.0	9.8	16.0	14.0	15.0
28	4.0	0.0	1.6	7.5	3.5	5.4	13.7	10.4	11.7	16.4	14.3	15.3
29	---	---	---	10.4	5.9	8.0	11.5	9.0	10.1	18.4	14.7	16.3
30	---	---	---	11.5	9.0	9.8	12.7	8.4	10.5	18.3	15.0	16.6
31	---	---	---	9.5	7.7	8.6	---	---	---	19.9	16.4	17.9
MONTH	10.7	0.0	3.9	13.0	0.0	5.9	17.6	3.3	10.7	19.9	7.1	12.9

01610400 WAITES RUN NEAR WARDENSVILLE, WV—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
JANUARY 2002 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.3	16.9	18.3	22.7	18.5	20.4	23.6	20.0	21.5	17.7	17.0	17.3
2	19.9	16.5	17.8	23.6	19.3	21.2	24.1	20.0	21.8	19.1	16.8	17.6
3	18.5	14.6	16.4	24.5	20.1	22.0	24.2	20.3	21.7	20.9	16.9	18.8
4	19.7	15.7	17.6	24.4	20.2	22.1	22.8	19.3	20.9	21.9	18.2	19.8
5	21.2	17.6	19.1	24.3	20.0	22.0	23.3	19.9	21.4	20.4	16.4	18.2
6	19.2	17.3	18.3	22.2	17.9	19.8	22.2	18.4	20.6	20.2	16.4	18.0
7	18.6	15.7	17.0	21.0	17.0	19.1	19.8	16.4	18.0	19.7	15.3	17.4
8	19.1	14.3	16.4	22.4	17.1	19.6	20.2	15.9	17.7	19.9	15.5	17.6
9	19.5	15.0	17.2	23.2	19.4	21.0	20.4	15.6	17.7	19.9	15.5	17.5
10	20.5	16.3	18.4	21.8	20.0	20.6	21.0	15.9	18.2	20.3	15.6	17.7
11	21.5	17.7	19.4	21.0	17.2	19.0	21.9	17.2	19.4	---	---	---
12	21.4	17.8	19.4	20.9	15.4	17.9	22.1	18.5	20.2	---	---	---
13	19.9	18.2	18.9	18.8	17.2	18.0	22.2	18.9	20.4	---	---	---
14	19.1	17.5	18.1	18.1	17.5	17.8	23.5	19.3	21.1	---	---	---
15	17.7	15.7	16.9	21.1	17.5	19.0	22.4	19.2	20.6	---	---	---
16	17.9	15.5	16.5	22.4	18.0	19.9	21.7	19.9	20.6	---	---	---
17	18.2	14.8	16.3	23.1	18.4	20.6	22.3	19.9	21.0	---	---	---
18	18.0	14.5	16.2	22.3	19.9	20.6	23.1	19.8	21.3	---	---	---
19	18.6	15.2	16.7	21.8	19.5	20.4	23.3	19.9	21.5	---	---	---
20	19.9	15.6	17.5	23.0	19.4	20.8	22.6	19.5	20.9	---	---	---
21	20.3	15.8	17.8	22.9	18.9	20.8	22.2	18.1	20.0	---	---	---
22	20.6	15.7	17.8	24.2	20.0	21.7	23.5	19.7	21.3	---	---	---
23	21.2	15.9	18.3	23.1	20.2	21.3	23.2	20.3	21.6	---	---	---
24	22.1	17.4	19.4	20.8	19.5	20.1	23.0	20.6	21.6	---	---	---
25	22.6	18.0	20.0	19.6	19.2	19.4	22.0	19.2	20.5	---	---	---
26	21.5	18.7	19.7	19.2	18.6	18.8	20.9	18.4	19.5	---	---	---
27	21.1	18.4	19.5	20.3	18.4	19.3	20.5	17.9	19.2	---	---	---
28	21.4	18.5	19.6	21.6	19.0	20.2	19.2	17.1	18.3	---	---	---
29	21.9	17.9	19.5	22.7	19.8	21.1	17.4	16.6	17.0	---	---	---
30	21.3	17.5	19.3	22.9	20.5	21.4	18.1	16.5	17.3	---	---	---
31	---	---	---	23.2	20.2	21.4	18.2	15.8	17.1	---	---	---
MONTH	22.6	14.3	18.1	24.5	15.4	20.2	24.2	15.6	20.0	---	---	---



DAILY MEAN WATER TEMPERATURE - JANUARY 2002 TO SEPTEMBER 2002

01610400 WAITES RUN NEAR WARDENSVILLE, WV—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

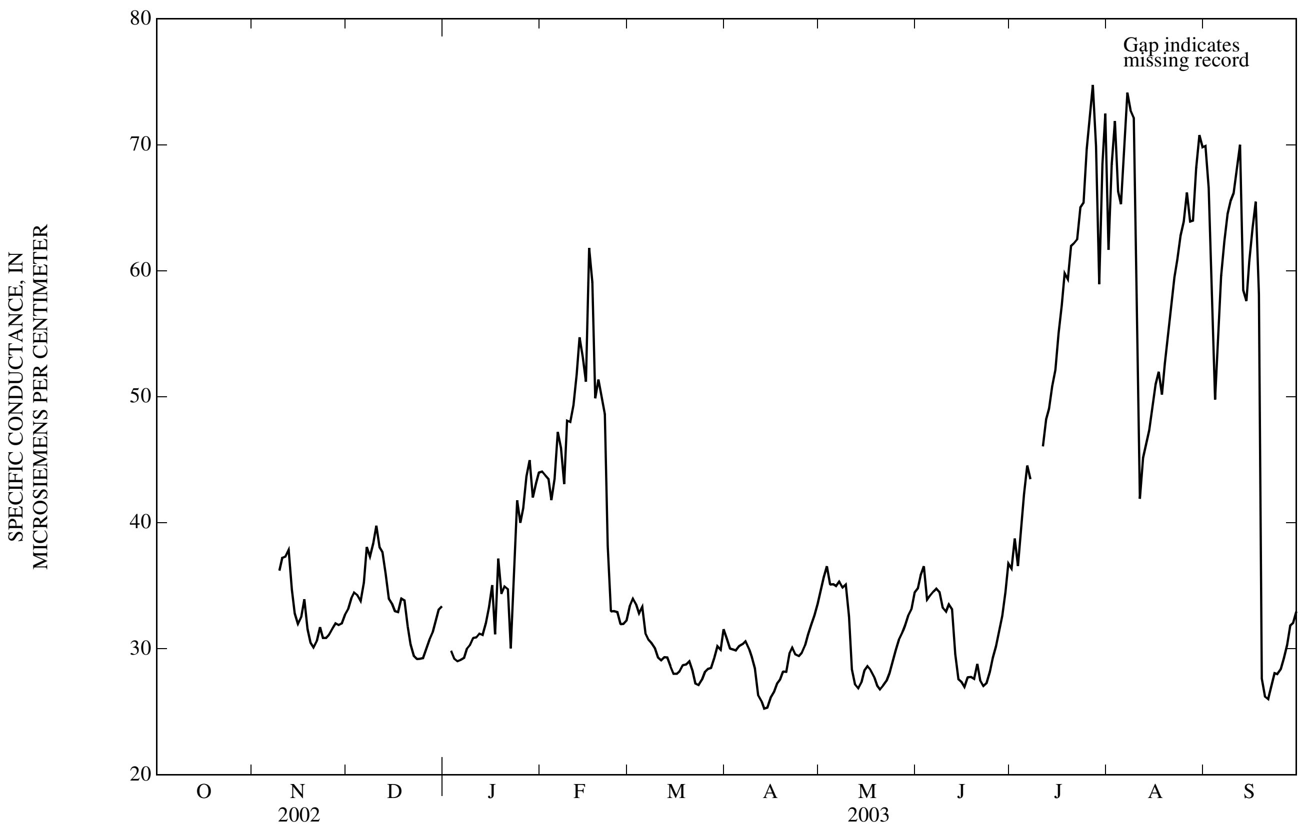
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	34	33	33	---	---	---
2	---	---	---	---	---	---	34	34	34	---	---	---
3	---	---	---	---	---	---	35	34	34	30	29	30
4	---	---	---	---	---	---	37	30	34	30	29	29
5	---	---	---	---	---	---	36	32	34	29	29	29
6	---	---	---	---	---	---	36	34	35	30	29	29
7	---	---	---	---	---	---	43	31	38	30	29	29
8	---	---	---	---	---	---	38	36	37	30	30	30
9	---	---	---	37	36	36	40	37	38	31	30	30
10	---	---	---	38	37	37	40	38	40	31	30	31
11	---	---	---	38	35	37	42	34	38	31	30	31
12	---	---	---	40	36	38	39	37	38	35	29	31
13	---	---	---	36	34	35	39	34	36	32	29	31
14	---	---	---	36	32	33	34	33	34	32	32	32
15	---	---	---	32	31	32	34	33	34	35	32	33
16	---	---	---	35	32	32	34	32	33	38	32	35
17	---	---	---	36	32	34	33	32	33	36	28	31
18	---	---	---	33	31	32	34	33	34	41	33	37
19	---	---	---	31	30	31	34	32	34	35	33	34
20	---	---	---	31	30	30	33	31	32	36	32	35
21	---	---	---	32	30	31	31	30	30	37	24	35
22	---	---	---	32	31	32	30	29	29	32	26	30
23	---	---	---	32	30	31	30	29	29	42	32	37
24	---	---	---	31	30	31	30	29	29	45	38	42
25	---	---	---	32	31	31	30	29	29	41	38	40
26	---	---	---	32	31	32	30	30	30	42	40	41
27	---	---	---	32	32	32	31	30	31	46	41	44
28	---	---	---	32	31	32	32	31	31	48	39	45
29	---	---	---	32	32	32	33	32	32	43	41	42
30	---	---	---	33	32	33	34	33	33	44	42	43
31	---	---	---	---	---	---	34	33	33	45	43	44
MONTH	---	---	---	---	---	---	43	29	34	48	24	35

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	45	44	44	34	33	33	33	29	31	36	34	35
2	45	42	44	34	33	34	31	30	30	37	34	36
3	44	42	43	34	32	34	31	29	30	38	35	37
4	45	38	42	33	32	33	31	29	30	39	33	35
5	45	42	44	35	31	33	31	30	30	37	33	35
6	56	42	47	32	31	31	31	30	30	36	34	35
7	47	45	46	31	30	31	32	30	31	36	34	35
8	58	39	43	32	30	30	31	30	30	36	32	35
9	59	41	48	31	30	30	30	28	29	38	33	35
10	49	47	48	30	29	29	30	27	28	40	29	33
11	56	46	49	30	29	29	29	26	26	30	28	28
12	53	49	52	30	29	29	26	25	26	28	27	27
13	71	45	55	31	28	29	26	25	25	27	26	27
14	55	50	53	29	28	29	26	25	25	28	27	27
15	53	47	51	29	28	28	27	25	26	30	28	28
16	71	53	62	29	28	28	28	26	27	30	28	29
17	72	50	59	29	28	28	28	26	27	29	28	28
18	51	49	50	29	28	29	29	27	28	28	27	28
19	52	51	51	29	28	29	29	27	28	28	26	27
20	52	49	50	32	28	29	29	27	28	28	26	27
21	51	46	49	29	28	28	33	28	30	28	27	27
22	46	23	38	28	27	27	33	29	30	28	27	27
23	34	31	33	28	27	27	30	29	30	29	28	28
24	33	33	33	28	27	28	30	28	29	30	28	29
25	33	32	33	29	28	28	30	29	30	31	29	30
26	32	31	32	43	28	28	31	30	30	31	30	31
27	32	31	32	33	28	28	32	30	31	32	31	31
28	33	32	32	32	29	29	34	31	32	33	31	32
29	---	---	---	31	29	30	35	32	33	33	32	33
30	---	---	---	31	29	30	35	32	34	35	32	33
31	---	---	---	41	30	32	---	---	---	35	33	34
MONTH	72	23	45	43	27	30	35	25	29	40	26	31

01610400 WAITES RUN NEAR WARDENSVILLE, WV—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	38	32	35	39	32	36	74	52	62	71	68	70
2	37	35	36	39	38	39	72	65	68	71	54	67
3	38	35	37	40	34	37	75	62	72	68	43	60
4	39	31	34	42	38	39	70	62	66	57	46	50
5	35	33	34	45	41	42	69	62	65	59	53	55
6	35	34	35	48	43	45	74	69	70	62	59	60
7	37	34	35	47	40	43	76	72	74	65	61	62
8	36	33	34	---	---	---	76	72	73	66	63	64
9	35	32	33	---	---	---	78	49	72	67	64	66
10	34	32	33	---	---	---	68	34	58	68	65	66
11	35	32	34	49	45	46	45	36	42	70	66	68
12	40	27	33	51	46	48	47	44	45	71	68	70
13	32	24	30	52	48	49	48	45	46	69	54	58
14	28	27	28	52	49	51	49	46	47	60	55	58
15	28	27	27	56	50	52	51	48	49	63	59	61
16	28	26	27	58	52	55	53	49	51	66	62	63
17	28	27	28	60	55	57	57	49	52	67	64	65
18	28	27	28	62	58	60	59	44	50	68	27	58
19	28	27	28	62	58	59	55	51	53	29	27	28
20	34	28	29	65	60	62	58	53	55	27	26	26
21	28	27	28	67	55	62	60	55	57	26	26	26
22	28	27	27	66	57	62	62	56	60	29	26	27
23	28	27	27	67	63	65	64	59	61	29	28	28
24	29	27	28	69	64	65	64	61	63	28	28	28
25	30	28	29	72	68	70	67	61	64	29	28	28
26	32	29	30	75	70	72	69	63	66	30	29	29
27	32	31	31	78	72	75	70	59	64	32	30	30
28	34	32	33	82	44	70	68	62	64	32	31	32
29	37	34	35	66	48	59	71	65	68	33	32	32
30	39	36	37	72	66	68	73	68	71	34	32	33
31	---	---	---	74	71	72	71	69	70	---	---	---
MONTH	40	24	31	82	32	56	78	34	61	71	26	49



DAILY MEAN SPECIFIC CONDUCTIVITY - 2003 WATER YEAR

01610400 WAITES RUN NEAR WARDENSVILLE, WV—Continued

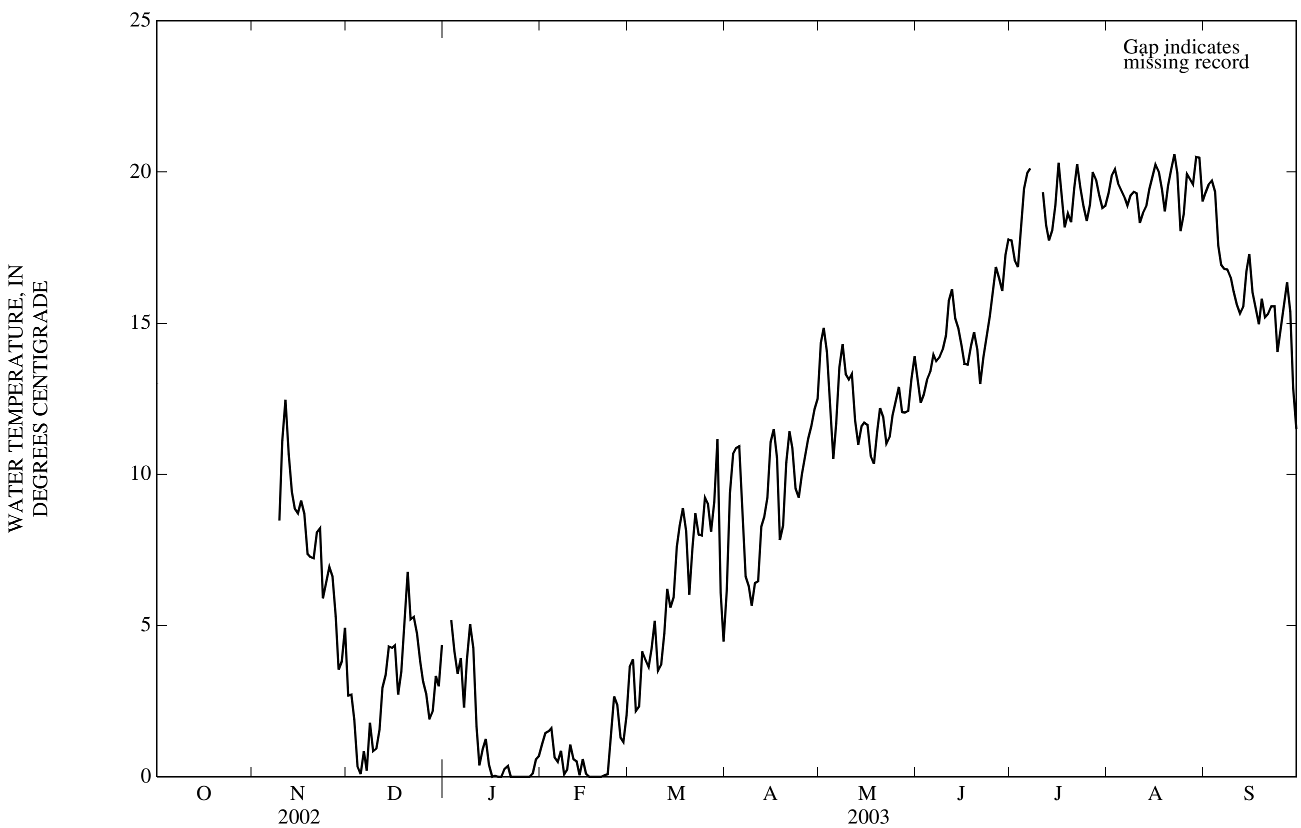
TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	4.0	1.9	2.7	---	---	---
2	---	---	---	---	---	---	3.6	1.8	2.7	---	---	---
3	---	---	---	---	---	---	3.2	0.2	1.9	5.9	4.8	5.2
4	---	---	---	---	---	---	0.9	0.0	0.4	4.8	3.4	4.1
5	---	---	---	---	---	---	0.7	0.0	0.1	3.7	3.2	3.4
6	---	---	---	---	---	---	1.6	0.0	0.8	4.5	3.0	3.9
7	---	---	---	---	---	---	0.6	0.0	0.2	3.0	1.5	2.3
8	---	---	---	---	---	---	2.8	0.5	1.8	4.8	3.0	3.9
9	---	---	---	9.6	7.2	8.5	1.8	0.1	0.8	5.8	4.5	5.0
10	---	---	---	12.4	9.6	11.1	1.9	0.2	0.9	4.8	3.1	4.3
11	---	---	---	13.1	11.3	12.5	2.3	1.2	1.6	3.1	0.9	1.7
12	---	---	---	11.3	10.2	10.7	3.4	2.3	2.9	0.9	0.0	0.4
13	---	---	---	10.2	8.2	9.4	3.8	2.9	3.4	2.0	0.0	0.9
14	---	---	---	9.8	8.1	8.9	4.6	3.8	4.3	1.7	0.7	1.2
15	---	---	---	9.4	7.8	8.7	4.7	3.7	4.3	0.9	0.0	0.4
16	---	---	---	9.2	9.0	9.1	4.8	3.2	4.3	0.0	0.0	0.0
17	---	---	---	9.0	7.9	8.7	3.2	2.0	2.7	0.3	0.0	0.0
18	---	---	---	7.9	7.0	7.4	4.0	3.0	3.5	0.0	0.0	0.0
19	---	---	---	8.0	6.5	7.3	6.9	3.7	5.0	0.0	0.0	0.0
20	---	---	---	8.0	6.4	7.2	7.4	5.4	6.8	0.8	0.0	0.3
21	---	---	---	8.8	7.1	8.1	5.6	4.9	5.2	0.9	0.0	0.4
22	---	---	---	8.8	6.8	8.2	6.1	4.5	5.3	0.0	0.0	0.0
23	---	---	---	6.8	5.3	5.9	5.5	4.3	4.7	0.0	0.0	0.0
24	---	---	---	7.4	5.6	6.4	4.3	3.2	3.8	0.0	0.0	0.0
25	---	---	---	8.0	5.7	6.9	3.6	2.4	3.2	0.0	0.0	0.0
26	---	---	---	7.8	5.8	6.6	3.2	2.1	2.7	0.0	0.0	0.0
27	---	---	---	5.8	4.1	5.3	2.6	1.1	1.9	0.0	0.0	0.0
28	---	---	---	4.1	3.1	3.5	2.9	1.3	2.2	0.0	0.0	0.0
29	---	---	---	4.5	2.9	3.8	4.1	2.9	3.3	0.3	0.0	0.1
30	---	---	---	5.7	4.0	4.9	3.6	2.2	3.0	0.8	0.3	0.6
31	---	---	---	---	---	---	5.2	3.5	4.4	0.9	0.5	0.7
MONTH	---	---	---	---	---	---	7.4	0.0	2.9	5.9	0.0	1.3
	FEBRUARY			MARCH			APRIL			MAY		
1	1.5	0.8	1.1	5.3	2.5	3.6	8.6	3.7	6.1	17.2	12.6	14.4
2	2.3	1.0	1.4	4.9	3.3	3.9	12.1	6.9	9.4	16.7	13.5	14.8
3	2.5	0.7	1.5	3.4	1.2	2.2	13.2	8.2	10.7	15.7	12.8	14.1
4	2.2	0.7	1.6	4.0	0.5	2.3	12.4	9.2	10.9	13.3	11.5	12.5
5	1.7	0.0	0.6	5.3	3.4	4.1	13.0	9.5	10.9	11.5	10.2	10.5
6	1.3	0.0	0.5	4.3	3.1	3.9	10.1	7.6	8.8	13.5	10.0	11.7
7	1.7	0.2	0.9	4.8	2.7	3.6	8.5	6.0	6.6	15.2	11.8	13.6
8	0.6	0.0	0.1	6.1	2.5	4.2	6.9	5.8	6.3	16.0	13.0	14.3
9	0.8	0.0	0.2	6.5	4.0	5.2	6.3	4.7	5.7	14.0	12.8	13.3
10	2.1	0.5	1.1	4.5	2.6	3.5	7.0	5.9	6.4	13.4	12.5	13.1
11	1.2	0.0	0.6	5.4	2.4	3.7	6.8	6.0	6.5	15.0	12.1	13.3
12	1.6	0.0	0.5	6.3	3.2	4.8	10.6	6.6	8.3	12.8	11.0	11.8
13	0.4	0.0	0.1	7.7	4.7	6.2	11.0	6.5	8.6	11.7	10.5	11.0
14	1.5	0.0	0.6	6.8	4.4	5.6	11.8	6.6	9.2	13.6	9.6	11.6
15	0.6	0.0	0.1	8.0	4.0	5.9	13.5	8.7	11.1	12.1	11.1	11.7
16	0.0	0.0	0.0	9.3	5.9	7.6	13.5	9.3	11.5	11.9	11.1	11.6
17	0.0	0.0	0.0	10.0	6.5	8.3	11.8	9.1	10.6	11.1	10.2	10.6
18	0.0	0.0	0.0	9.9	8.2	8.9	9.1	7.4	7.8	10.7	10.1	10.4
19	0.0	0.0	0.0	8.8	7.0	8.1	9.5	7.3	8.3	13.2	9.9	11.4
20	0.0	0.0	0.0	7.0	5.6	6.0	12.1	9.0	10.4	14.0	10.4	12.2
21	0.3	0.0	0.1	9.9	5.8	7.6	13.0	10.1	11.4	12.8	11.1	11.9
22	0.2	0.0	0.1	10.3	7.8	8.7	11.9	9.5	10.9	11.2	10.8	11.0
23	2.3	0.1	1.3	9.0	7.3	8.0	11.6	8.0	9.5	11.6	11.0	11.2
24	3.8	1.7	2.7	10.1	6.0	8.0	11.5	6.9	9.2	12.8	11.1	11.9
25	2.8	1.6	2.4	11.5	7.1	9.2	11.0	8.6	10.0	13.7	11.0	12.4
26	1.6	1.0	1.3	10.0	7.5	9.0	10.9	10.3	10.6	13.4	12.4	12.9
27	1.5	0.8	1.1	10.3	6.0	8.1	13.7	9.2	11.2	12.4	11.5	12.1
28	3.2	0.9	2.0	10.8	7.0	9.1	14.6	8.7	11.6	12.9	11.4	12.1
29	---	---	---	12.7	10.1	11.2	13.6	10.8	12.1	13.0	11.3	12.1
30	---	---	---	10.1	4.2	6.1	14.5	10.7	12.5	15.1	11.3	13.1
31	---	---	---	5.7	3.2	4.5	---	---	---	15.1	12.9	13.9
MONTH	3.8	0.0	0.8	12.7	0.5	6.2	14.6	3.7	9.4	17.2	9.6	12.3

01610400 WAITES RUN NEAR WARDENSVILLE, WV—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	14.5	12.1	13.1	18.7	16.7	17.7	20.1	18.8	19.3	20.4	18.4	19.3
2	14.2	10.5	12.4	17.6	16.7	17.1	21.8	18.2	19.9	19.9	19.3	19.6
3	13.2	12.1	12.7	17.7	16.3	16.9	21.6	19.3	20.1	20.9	18.9	19.7
4	13.3	12.8	13.1	20.0	16.4	18.1	20.9	18.8	19.6	19.8	18.5	19.3
5	14.8	12.2	13.4	21.0	18.0	19.4	20.7	18.6	19.4	18.5	16.9	17.6
6	15.8	12.2	14.0	21.6	18.6	20.0	21.2	17.7	19.2	18.5	15.8	16.9
7	14.3	13.4	13.7	21.6	18.9	20.1	19.4	18.2	18.9	18.6	15.2	16.8
8	14.6	13.1	13.9	---	---	---	20.6	18.2	19.2	17.5	15.9	16.8
9	15.1	13.1	14.1	---	---	---	20.4	18.6	19.3	17.1	16.1	16.5
10	16.3	12.9	14.6	---	---	---	20.7	18.1	19.3	17.7	15.0	16.0
11	16.8	14.6	15.7	21.0	18.3	19.3	19.2	17.6	18.3	17.6	13.9	15.6
12	18.0	15.1	16.1	19.7	17.2	18.2	19.9	17.6	18.6	15.9	14.9	15.3
13	16.6	14.4	15.2	19.7	16.2	17.7	19.9	17.9	18.9	15.9	15.1	15.5
14	15.9	13.9	14.8	20.1	16.6	18.1	20.8	18.2	19.4	17.7	15.9	16.7
15	14.5	13.7	14.2	21.1	17.1	18.9	21.1	18.7	19.8	18.4	16.5	17.3
16	14.1	13.1	13.7	22.3	19.1	20.3	21.6	19.2	20.3	17.7	14.8	16.0
17	13.8	13.3	13.6	21.4	17.6	19.2	20.9	19.3	20.0	17.3	14.0	15.5
18	15.4	13.2	14.2	18.8	17.3	18.2	20.5	18.7	19.4	16.4	14.5	15.0
19	15.8	13.9	14.7	20.6	17.5	18.6	19.8	17.6	18.7	16.4	15.1	15.8
20	14.5	13.3	14.1	20.8	16.2	18.3	21.3	18.2	19.6	15.8	14.6	15.2
21	13.3	12.8	13.0	21.8	17.6	19.5	21.8	18.7	20.1	16.0	14.8	15.3
22	15.3	12.9	13.9	22.0	19.3	20.3	22.4	19.4	20.6	16.1	15.0	15.6
23	16.4	12.9	14.6	21.2	18.4	19.5	21.5	18.5	20.0	16.1	14.1	15.6
24	17.1	13.5	15.2	20.7	17.6	18.9	19.9	16.6	18.0	15.1	12.8	14.0
25	17.8	14.2	16.0	20.8	16.5	18.4	20.8	16.8	18.6	15.8	13.7	14.8
26	18.6	15.2	16.9	20.9	17.1	18.9	21.8	18.5	19.9	16.3	14.9	15.6
27	17.2	15.7	16.5	22.4	18.2	20.0	21.3	19.0	19.8	17.5	15.4	16.4
28	17.5	14.5	16.1	20.3	19.2	19.8	21.5	18.0	19.6	16.5	14.2	15.4
29	19.0	15.7	17.3	20.3	18.5	19.2	22.2	19.1	20.5	14.2	11.8	12.9
30	19.0	16.5	17.8	20.4	17.5	18.8	21.3	19.8	20.5	12.3	10.6	11.5
31	---	---	---	20.0	17.6	18.9	20.1	18.5	19.0	---	---	---
MONTH	19.0	10.5	14.6	22.4	16.2	18.9	22.4	16.6	19.5	20.9	10.6	16.1



DAILY MEAN WATER TEMPERATURE - 2003 WATER YEAR

01611500 CACAPON RIVER NEAR GREAT CACAPON, WV

LOCATION.--Lat 39°34'56", long 78°18'36", NAD27, Morgan County, Hydrologic Unit 02070003, on left bank at Rock Ford, 3.0 mi southwest of Great Cacapon, and at mile 6.1.

DRAINAGE AREA.--675 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1922 to September 1995, October 1996 to current year.

REVISED RECORDS.--WSP 800: 1924(M). WSP 921: Drainage area. WSP 951: 1936-37. WSP 1552: 1925-26(M), 1928-1929(M), 1932. WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 456.78 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Nov. 10, 1933, nonrecording gage at same site and datum.

REMARKS.--Records fair except those for periods of estimated daily discharges (ice effect), which are poor. High end of rating not confirmed above 3,000 ft^3/s since cableway removed in July 1992.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1889 reached a stage of about 24.7 ft, from floodmarks, discharge, 57,500 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 14	1830	4,060	6.94
Jan 2	1000	12,400	11.87
Feb 23	0800	12,700	12.00
Mar 6	1530	8,330	9.79
Mar 10	0330	7,250	9.16
Mar 21	0900	9,890	10.63
Apr 12	0030	8,610	9.95
May 11	1100	9,050	10.19
Jun 14	1500	5,120	7.75
Jun 21	0730	4,830	7.54
Sep 20	0200	*33,800	*19.17

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	237	943	382	712	243	1,360	1,210	621	707	399	218	147
2	176	630	364	9,080	239	1,280	1,480	622	634	359	199	154
3	140	481	329	4,640	235	1,780	1,820	683	599	342	196	184
4	119	390	288	2,580	259	1,970	1,620	662	765	345	199	490
5	104	333	271	1,960	309	1,820	1,410	703	1,170	352	399	981
6	93	350	253	1,630	369	6,050	1,210	1,080	1,110	318	612	708
7	85	607	e240	1,360	293	6,900	1,110	1,180	1,090	279	479	456
8	79	692	e230	1,100	e280	4,070	2,690	1,120	1,800	258	364	334
9	75	545	e220	1,050	e250	4,810	2,780	1,360	1,950	260	354	269
10	73	448	e210	988	231	6,000	4,100	2,050	1,910	647	348	225
11	82	384	288	835	244	3,270	4,610	7,320	1,520	598	341	201
12	92	362	585	688	e230	2,340	6,350	3,970	1,130	1,000	1,350	187
13	111	866	1,670	558	e210	2,130	3,440	2,320	1,540	620	1,050	183
14	193	1,530	3,290	532	e190	2,990	2,290	1,740	3,360	444	1,010	212
15	198	1,050	3,300	513	e180	2,630	1,850	1,360	3,010	343	585	289
16	189	774	2,240	424	e175	2,030	1,590	1,950	2,240	285	423	324
17	740	831	1,850	399	e170	1,780	1,360	2,580	1,810	252	334	259
18	1,180	2,050	1,520	e380	238	1,580	1,140	2,040	1,950	227	336	230
19	639	1,750	1,180	e370	285	1,360	1,070	2,020	2,090	207	353	12,300
20	429	1,300	1,010	e350	376	1,460	1,250	1,910	2,140	196	286	14,900
21	322	992	1,400	e335	442	8,040	1,060	1,630	4,250	187	232	3,640
22	260	992	1,470	e320	656	4,330	1,310	1,390	3,130	184	204	2,360
23	214	1,230	1,180	e310	8,470	2,590	1,910	1,190	2,160	181	188	2,510
24	187	1,000	955	e300	8,490	1,960	1,560	1,060	1,630	190	170	2,170
25	167	810	821	e290	3,850	1,640	1,280	961	1,220	184	161	1,550
26	172	671	750	e280	2,340	1,410	1,140	846	907	181	163	1,180
27	174	577	655	e275	1,870	1,340	1,070	862	709	174	161	940
28	183	521	551	e270	1,610	1,210	899	757	589	163	154	1,460
29	213	463	491	e260	---	992	754	778	510	161	150	1,250
30	349	411	478	e255	---	957	671	704	451	247	151	834
31	1,340	---	486	252	---	1,110	---	648	---	277	158	---
TOTAL	8,615	23,983	28,957	33,296	32,734	83,189	56,034	48,117	48,081	9,860	11,328	50,927
MEAN	278	799	934	1,074	1,169	2,684	1,868	1,552	1,603	318	365	1,698
MAX	1,340	2,050	3,300	9,080	8,490	8,040	6,350	7,320	4,250	1,000	1,350	14,900
MIN	73	333	210	252	170	957	671	621	451	161	150	147
CFSM	0.41	1.18	1.38	1.59	1.73	3.98	2.77	2.30	2.37	0.47	0.54	2.51
IN.	0.47	1.32	1.60	1.83	1.80	4.58	3.09	2.65	2.65	0.54	0.62	2.81

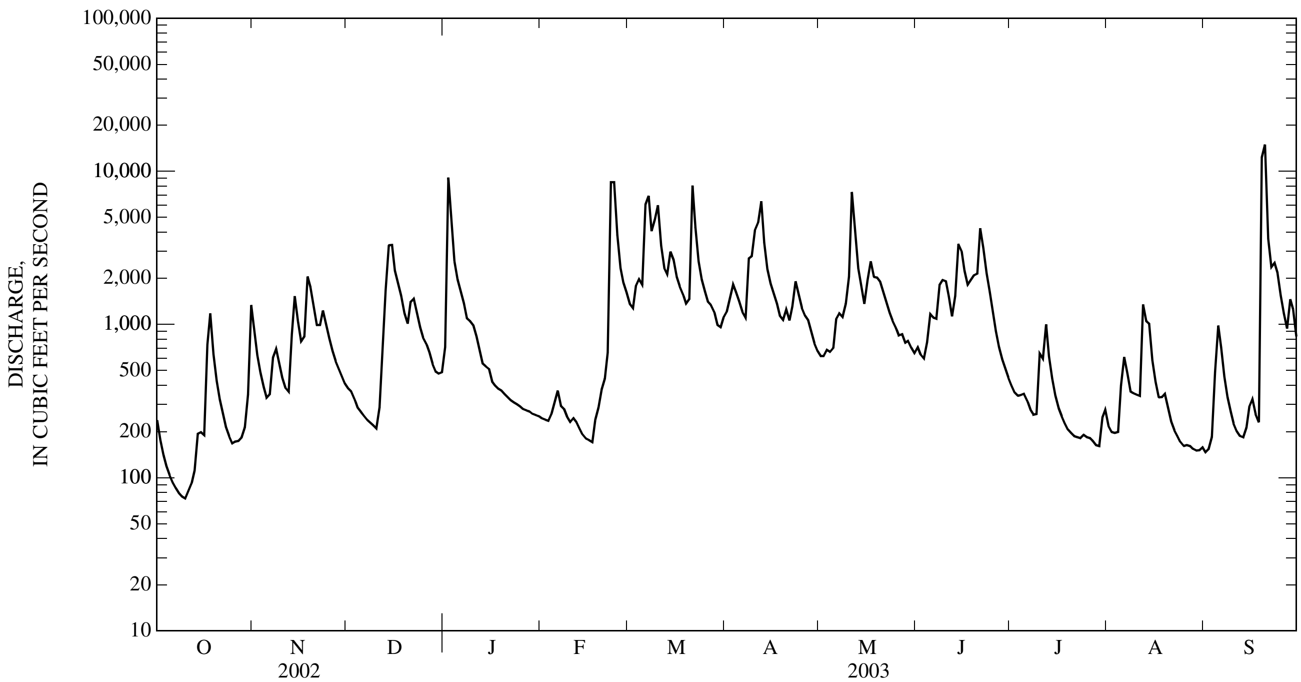
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	323	367	513	638	883	1,289	1,118	861	439	194	234	193
MAX	2,976	2,577	2,121	1,751	3,234	5,708	2,976	3,565	3,525	936	2,791	1,698
(WY)	(1943)	(1986)	(1973)	(1998)	(1998)	(1936)	(1987)	(1924)	(1972)	(1972)	(1955)	(2003)
MIN	44.8	51.1	56.5	69.6	89.1	247	242	157	72.5	53.8	39.8	39.4
(WY)	(1931)	(1966)	(1966)	(1956)	(1934)	(1990)	(1947)	(1969)	(1999)	(1999)	(1966)	(1932)

01611500 CACAPON RIVER NEAR GREAT CACAPON, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1923 - 2003	
ANNUAL TOTAL	165,732		435,121			
ANNUAL MEAN	454		1,192		589	
HIGHEST ANNUAL MEAN					1,192	2003
LOWEST ANNUAL MEAN					180	1969
HIGHEST DAILY MEAN	4,180	Apr 23	14,900	Sep 20	67,900	Mar 18, 1936
LOWEST DAILY MEAN	39	(a)	73	Oct 10	26	Sep 12, 1966
ANNUAL SEVEN-DAY MINIMUM	40	Sep 13	83	Oct 6	28	Sep 7, 1966
MAXIMUM PEAK FLOW			33,800	Sep 20	(b)87,600	Mar 18, 1936
MAXIMUM PEAK STAGE			19.17	Sep 20	30.10	Mar 18, 1936
INSTANTANEOUS LOW FLOW			72	Oct 10	26	(c)
ANNUAL RUNOFF (CFSM)	0.67		1.77		0.87	
ANNUAL RUNOFF (INCHES)	9.13		23.98		11.86	
10 PERCENT EXCEEDS	1,180		2,420		1,350	
50 PERCENT EXCEEDS	186		662		244	
90 PERCENT EXCEEDS	59		184		67	

a Sept. 14, 15.
b From rating curve extended above 52,000 ft^3/s.
c Sept. 11-13, 1966.
e Estimated.



01613000 POTOMAC RIVER AT HANCOCK, MD

LOCATION.--Lat 39°41'51.2", long 78°10'40.4", Washington County, Hydrologic Unit 02070004, on left bank, 0.2 mi downstream from Little Tonoloway Creek, 0.5 mi downstream from bridge on U.S. Highway 522 at Hancock, 1.1 mi upstream from Tonoloway Creek (formerly called Great or Big Tonoloway Creek), and at mile 239.

DRAINAGE AREA.--4,090 mi^2.

PERIOD OF RECORD.--October 1932 to current year. Gage-height records collected at same site since June 1925 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 781: 1933(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 383.68 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1932, to Jan. 5, 1935, Mar. 18, 1936, to Jan. 20, 1937, nonrecording gage, on former highway bridge just upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Slight regulation at low flow from power plants upstream. Low flow affected slightly by Stony River Reservoir prior to July 1981, since December 1950 by Savage River Reservoir (see station 01597500), and since July 1981 by Jennings Randolph Lake. National Weather Service gage-height telemeter at station. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known prior to 1932, about 40 ft in May 1889, discharge, about 220,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 23,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 2	1530	38,900	17.49	May 11	1900	44,700	18.88
Feb 24	1130	31,700	15.65	Jun 4	1500	24,100	13.47
Mar 7	0530	39,800	17.72	Jun 21	1230	26,800	14.29
Mar 10	0800	33,500	16.13	Sep 20	0600	*82,100	*26.09
Mar 21	1230	37,000	17.02	Sep 23	1730	25,600	13.93
Apr 12	0600	33,500	16.13				

Minimum discharge, 504 ft^3/s, Oct. 10.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,690	7,800	3,010	4,990	e1,950	7,510	5,730	3,920	9,510	3,000	1,490	1,550
2	1,280	5,490	2,910	31,100	e1,950	6,860	6,040	3,990	9,510	2,680	1,360	1,840
3	1,030	4,240	2,730	26,200	e1,930	8,000	6,860	4,060	9,300	2,470	1,320	3,320
4	867	3,420	2,490	19,100	e2,000	10,100	6,890	4,050	22,100	2,380	1,350	6,160
5	764	2,880	2,320	14,500	e2,180	9,290	6,630	4,490	18,700	2,360	2,620	9,370
6	677	3,060	2,260	11,400	e2,300	21,300	7,080	8,510	14,300	2,280	2,560	7,960
7	613	5,730	2,280	9,310	e2,400	36,500	7,130	9,420	13,500	2,140	2,570	5,110
8	572	6,110	2,190	7,690	e2,200	25,300	17,200	8,780	20,700	2,150	2,250	4,020
9	536	5,010	2,220	7,070	e2,150	24,200	19,900	11,800	18,500	3,440	2,130	3,490
10	513	4,690	2,120	6,760	1,970	31,100	25,500	20,300	18,100	7,360	2,100	2,220
11	577	4,180	2,270	6,170	1,870	21,100	24,500	41,700	12,500	7,160	3,720	1,810
12	719	3,880	3,230	5,510	1,790	15,400	30,600	35,400	9,430	6,820	6,730	1,640
13	1,210	5,840	6,490	4,830	1,720	14,200	21,700	19,100	13,700	5,510	5,630	1,540
14	1,310	10,100	12,900	4,380	1,580	20,000	16,000	13,700	17,300	4,690	5,180	1,550
15	1,240	7,940	16,600	4,100	1,670	20,800	12,800	10,700	15,300	3,500	3,840	2,290
16	1,270	6,370	12,600	3,750	1,680	16,900	10,600	14,400	11,500	3,270	3,150	2,740
17	2,950	6,260	9,960	3,380	4,150	15,600	8,480	17,600	9,530	2,750	2,690	2,430
18	5,400	10,400	8,140	3,180	4,190	15,100	7,140	13,600	10,200	2,420	2,680	2,260
19	4,210	10,400	6,690	2,830	5,760	13,900	6,420	13,000	11,900	2,070	2,620	28,300
20	2,920	8,260	6,050	e2,750	8,320	13,900	6,760	13,400	11,700	1,830	1,980	70,000
21	2,200	7,040	8,810	e2,700	7,690	32,900	6,260	11,100	23,600	1,680	1,640	29,000
22	1,770	6,520	13,200	2,660	7,640	26,000	6,280	9,330	20,100	1,570	1,490	18,600
23	1,490	6,560	10,200	e2,400	17,900	17,800	7,130	8,080	13,500	1,490	1,350	22,800
24	1,280	6,100	8,460	e2,200	30,400	13,300	6,330	7,370	9,880	1,470	1,210	18,200
25	1,140	5,420	7,250	e2,200	19,500	10,400	5,500	7,090	7,580	1,510	1,070	11,700
26	1,260	4,660	6,410	e2,300	13,900	8,530	5,180	6,650	6,040	1,370	1,100	8,660
27	1,940	4,140	5,540	e2,200	10,800	7,500	5,140	8,020	5,060	1,260	1,130	6,830
28	2,030	3,820	4,660	e2,050	8,710	6,550	4,760	7,370	4,290	1,190	1,170	12,200
29	1,880	3,470	4,210	e2,000	---	5,740	4,520	7,560	3,780	1,210	1,290	11,000
30	3,730	3,200	4,030	e2,000	---	5,430	4,100	6,920	3,390	2,090	1,330	7,740
31	9,990	---	3,880	e1,980	---	5,590	---	6,150	---	1,880	1,440	---
TOTAL	59,058	172,990	186,110	203,690	170,300	486,800	309,160	357,560	374,500	87,000	72,190	306,330
MEAN	1,905	5,766	6,004	6,571	6,082	15,700	10,310	11,530	12,480	2,806	2,329	10,210
MAX	9,990	10,400	16,600	31,100	30,400	36,500	30,600	41,700	23,600	7,360	6,730	70,000
MIN	513	2,880	2,120	1,980	1,580	5,430	4,100	3,920	3,390	1,190	1,070	1,540
CFSM	0.47	1.41	1.47	1.61	1.49	3.84	2.52	2.82	3.05	0.69	0.57	2.50
IN.	0.54	1.57	1.69	1.85	1.55	4.43	2.81	3.25	3.41	0.79	0.66	2.79

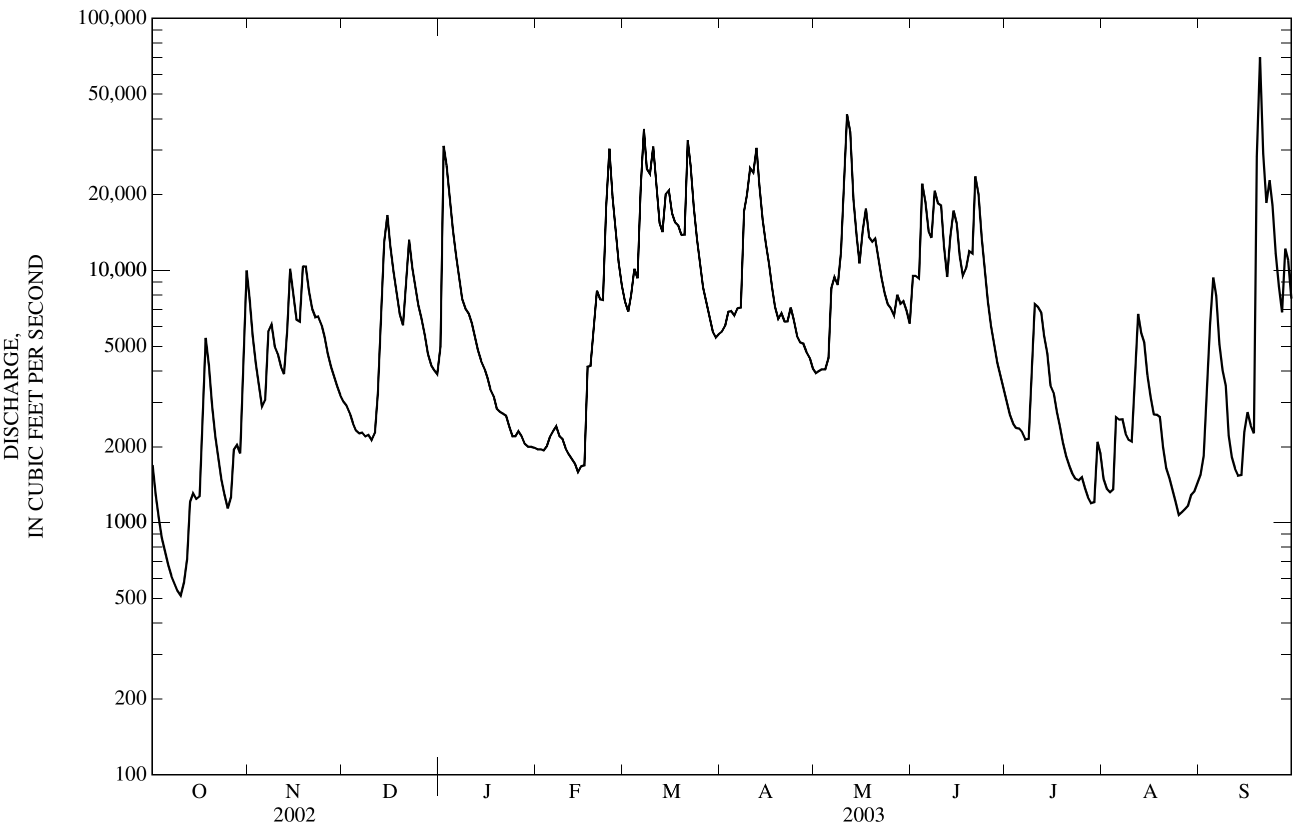
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,971	2,502	3,949	5,071	6,504	9,373	7,642	5,590	3,199	1,589	1,603	1,544
MAX	13,270	20,090	15,160	17,180	17,560	32,280	19,170	13,260	13,390	6,677	9,479	15,100
(WY)	(1977)	(1986)	(1973)	(1996)	(1998)	(1936)	(1993)	(1988)	(1972)	(1949)	(1955)	(1996)
MIN	309	399	463	751	955	2,311	2,286	1,344	622	357	342	329
(WY)	(1942)	(1966)	(1966)	(1956)	(2002)	(1990)	(1995)	(1941)	(1969)	(1966)	(1944)	(1946)

01613000 POTOMAC RIVER AT HANCOCK, MD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1933 - 2003	
ANNUAL TOTAL	1,175,849		2,785,688			
ANNUAL MEAN	3,222		7,632		4,199	
HIGHEST ANNUAL MEAN					7,932	1996
LOWEST ANNUAL MEAN					1,770	1969
HIGHEST DAILY MEAN	29,100	Apr 23	70,000	Sep 20	261,000	Mar 18, 1936
LOWEST DAILY MEAN	408	Sep 8	513	Oct 10	184	Oct 3, 1932
ANNUAL SEVEN-DAY MINIMUM	456	Sep 5	601	Oct 6	215	Sep 7, 1966
MAXIMUM PEAK FLOW			82,100	Sep 20	(a)340,000	Mar 18, 1936
MAXIMUM PEAK STAGE			26.09	Sep 20	47.60	Mar 18, 1936
INSTANTANEOUS LOW FLOW			504	Oct 10	180	Oct 4, 1932
ANNUAL RUNOFF (CFSM)	0.79		1.87		1.03	
ANNUAL RUNOFF (INCHES)	10.69		25.34		13.95	
10 PERCENT EXCEEDS	7,890		18,100		9,620	
50 PERCENT EXCEEDS	1,380		5,420		2,180	
90 PERCENT EXCEEDS	598		1,490		542	

a From rating curve extended above 120,000 ft^3/s on basis of slope-area measurement of peak flow.
e Estimated.



DAILY MEAN DISCHARGE - 2003 WATER YEAR

01616500 OPEQUON CREEK NEAR MARTINSBURG, WV

LOCATION.--Lat 39°25'25", long 77°56'20", NAD27, Berkeley County, Hydrologic Unit 02070004, on right bank 300 ft upstream from Evans Run, 2.3 mi upstream from Tuscarora Creek, 3.0 mi southeast of Martinsburg, and at mile 11.6.

DRAINAGE AREA.--273 mi^2.

PERIOD OF RECORD.--May 1905 to July 1906, July 1947 to current year.

REVISED RECORDS.--WSP 1702: 1959. WDR WV-97-1: Drainage area, 1936(M), 1967(M), 1968(P), 1969(M).

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 354.89 ft above NGVD of 1929. Prior to July 1906, nonrecording gage at approximately the same site at different datum. July 23, 1947 to July 22, 1948, nonrecording gage at present site and datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor. Some diurnal fluctuation at low flow caused by upstream mills in Virginia and since July 18, 1988, by wastewater treatment plant, 1,000 ft upstream from Opequon Creek near Berryville, Va (01615000); drainage area 57.4 mi^2.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1936 reached a stage of about 17.5 ft, from information by local residents, estimated discharge, 19,100 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 14	0600	2,120	9.14	Mar 21	1130	4,260	11.51
Jan 2	1430	4,110	11.41	May 16	2200	5,040	12.03
Feb 23	0900	3,020	10.50	Jun 13	2200	2,300	9.50
Mar 7	0530	2,260	9.42	Jun 22	1030	*6,370	*12.82
Mar 10	0500	2,540	9.90	Sep 20	0030	2,900	10.36

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	351	200	557	183	502	711	273	656	387	223	148
2	85	252	188	3,000	188	603	619	287	466	365	217	184
3	79	206	178	1,100	191	1,130	527	262	459	402	202	207
4	74	179	167	919	215	866	477	251	957	416	235	499
5	71	169	175	700	272	783	446	255	1,110	352	290	425
6	65	380	173	597	217	1,610	414	285	735	317	231	247
7	65	360	163	525	208	1,760	510	268	912	512	203	201
8	65	247	e155	492	200	1,150	861	364	1,140	402	198	180
9	62	204	e150	548	189	1,590	1,080	408	867	353	195	172
10	68	181	e145	479	193	1,870	1,390	713	656	886	182	164
11	121	215	296	416	194	1,040	1,160	1,020	534	617	183	156
12	210	407	1,180	365	190	874	1,090	561	520	444	188	152
13	160	915	1,160	336	180	839	757	420	970	425	176	186
14	117	482	1,820	326	173	1,040	617	352	1,150	365	170	254
15	98	333	1,230	304	176	798	545	312	743	319	164	224
16	400	281	771	283	166	696	494	2,610	562	298	161	219
17	870	774	564	275	e160	639	448	2,030	493	277	284	185
18	335	869	460	259	e170	575	414	1,050	657	257	354	182
19	219	531	408	250	e185	506	470	947	590	255	207	1,780
20	169	399	397	245	210	908	446	715	1,230	244	176	1,250
21	143	368	402	238	225	3,190	407	584	1,600	235	165	497
22	129	683	338	225	858	1,300	441	520	4,740	230	160	376
23	117	496	306	212	2,440	920	418	473	1,290	254	164	991
24	108	364	283	209	1,320	736	367	651	820	282	149	732
25	103	305	287	200	988	636	339	1,030	656	237	146	462
26	174	272	296	195	783	582	349	781	566	221	154	496
27	199	255	284	191	643	639	343	645	505	209	175	403
28	153	235	271	180	564	541	310	598	456	204	177	397
29	185	219	265	183	---	500	295	604	421	265	157	342
30	765	210	278	180	---	531	284	502	399	234	158	297
31	581	---	287	179	---	686	---	519	---	208	153	---
TOTAL	6,085	11,142	13,277	14,168	11,681	30,040	17,029	20,290	26,860	10,472	5,997	12,008
MEAN	196	371	428	457	417	969	568	655	895	338	193	400
MAX	870	915	1,820	3,000	2,440	3,190	1,390	2,610	4,740	886	354	1,780
MIN	62	169	145	179	160	500	284	251	399	204	146	148
CFSM	0.72	1.36	1.57	1.67	1.53	3.55	2.08	2.40	3.28	1.24	0.71	1.47
IN.	0.83	1.52	1.81	1.93	1.59	4.09	2.32	2.76	3.66	1.43	0.82	1.64

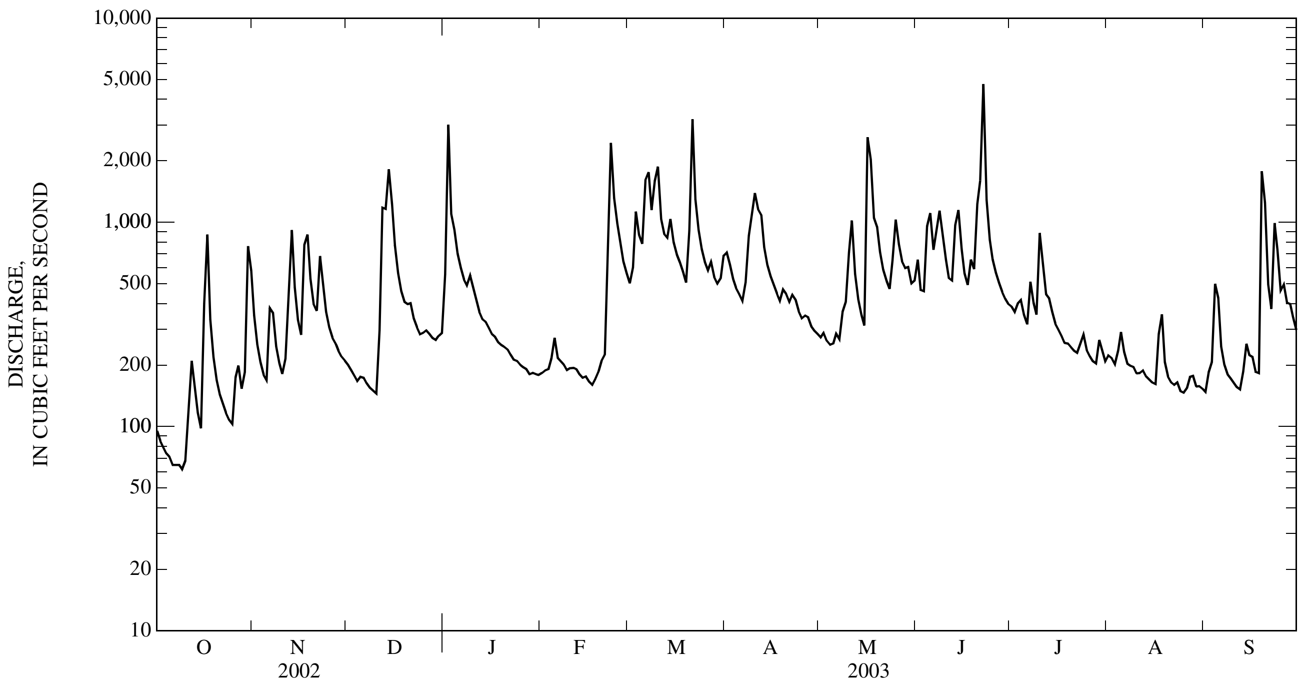
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	148	173	240	284	344	456	376	279	221	142	138	135
MAX	788	609	821	1,337	1,269	1,461	1,199	1,091	1,190	456	772	970
(WY)	(1977)	(1997)	(1973)	(1996)	(1998)	(1993)	(1984)	(1988)	(1972)	(1972)	(1996)	(1996)
MIN	30.5	35.1	33.7	39.6	49.9	97.2	97.8	86.0	62.3	49.4	36.6	35.2
(WY)	(1948)	(1966)	(1966)	(1966)	(2002)	(2002)	(1954)	(1969)	(1999)	(1966)	(1966)	(1947)

01616500 OPEQUON CREEK NEAR MARTINSBURG, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1947 - 2003	
ANNUAL TOTAL	60,122		179,049			
ANNUAL MEAN	165		491		244	
HIGHEST ANNUAL MEAN					581	1996
LOWEST ANNUAL MEAN					85.7	1954
HIGHEST DAILY MEAN	1,820	Dec 14	4,740	Jun 22	(e)15,000	Jan 20, 1996
LOWEST DAILY MEAN	43	Mar 1	62	Oct 9	26	Oct 25, 1947
ANNUAL SEVEN-DAY MINIMUM	44	Feb 23	67	Oct 4	27	Sep 7, 1966
MAXIMUM PEAK FLOW			6,370	Jun 22	(a)23,400	Jan 20, 1996
MAXIMUM PEAK STAGE			12.82	Jun 22	18.76	Jan 20, 1996
INSTANTANEOUS LOW FLOW			60	(b)	25	Oct 25, 1947
ANNUAL RUNOFF (CFSM)	0.60		1.80		0.89	
ANNUAL RUNOFF (INCHES)	8.19		24.40		12.15	
10 PERCENT EXCEEDS	361		1,000		484	
50 PERCENT EXCEEDS	94		343		140	
90 PERCENT EXCEEDS	49		164		57	

a From rating curve extended above 7,100 ft^3/s.
b Oct. 7, 9.
e Estimated.



01636500 SHENANDOAH RIVER AT MILLVILLE, WV

LOCATION.--Lat 39°16'55", long 77°47'22", NAD27, Jefferson County, Hydrologic Unit 02070007, on left bank 0.4 mi downstream from Cattail Run, 1.0 mi upstream from Millville, 5.0 mi upstream from Harpers Ferry, and at mile 4.7.

DRAINAGE AREA.--3,022 mi^2.

PERIOD OF RECORD.--April 1895 to March 1909, August 1928 to current year.

REVISED RECORDS.--WSP 951: 1936(M). WSP 1432: Drainage area at former site, 1895-99, 1901-02, 1905, 1907-08, 1932(M), 1935(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 293.00 ft above NGVD of 1929. Apr. 15, 1895, to Mar. 31, 1909, nonrecording gage at site 0.8 mi downstream at datum 0.32 ft higher.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor. Some regulation by upstream hydroelectric plants, including that of Potomac Light and Power Company, 0.5 mi upstream from station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1870 reached practically same stage as flood of Mar. 18, 1936, 26.36 ft, discharge, 151,000 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 15,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 3	0100	18,200	9.05	May 20	1130	15,200	8.26
Feb 24	1300	38,900	13.23	Jun 22	0830	19,300	9.31
Mar 7	0530	20,300	9.55	Sep 20	2000	*66,100	*17.31
Mar 22	0130	27,000	11.02	Sep 24	0900	35,600	12.65
Apr 12	1130	25,700	10.76				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,450	4,180	1,950	2,960	1,770	7,700	5,700	3,500	5,050	3,670	1,970	1,570
2	1,160	3,940	1,780	11,500	1,730	7,020	5,810	3,400	4,410	3,480	1,910	1,590
3	885	3,140	1,690	15,700	1,710	9,600	5,800	3,970	4,170	3,540	1,860	1,600
4	766	2,470	1,580	12,000	1,680	13,400	5,670	4,020	4,420	6,040	2,090	4,940
5	711	2,030	1,520	9,890	1,690	11,100	5,390	3,670	6,530	7,750	2,170	3,790
6	665	1,890	1,490	7,980	1,620	14,800	5,070	4,350	7,960	6,050	2,200	2,460
7	592	2,210	1,430	6,690	1,650	19,200	4,870	4,930	8,010	5,560	2,320	2,170
8	537	2,070	1,290	5,670	1,640	15,700	6,050	4,880	7,320	4,720	2,560	2,030
9	498	2,130	e1,200	5,100	1,560	14,000	9,380	4,710	7,890	5,050	2,510	1,820
10	482	2,050	1,260	4,710	1,510	13,700	13,800	4,730	9,070	5,560	2,300	1,710
11	521	1,940	1,430	4,260	1,500	11,000	18,000	8,870	8,160	4,980	2,400	1,540
12	544	2,060	2,300	3,820	1,470	8,830	24,200	12,600	6,850	4,900	4,090	1,570
13	710	3,710	3,650	3,480	1,400	7,660	17,900	9,420	7,730	4,110	4,700	1,680
14	817	6,210	7,080	3,220	1,370	7,770	12,700	7,050	11,400	3,580	4,490	1,940
15	796	6,470	9,210	2,970	1,410	7,780	9,920	5,680	9,240	3,230	3,870	2,010
16	1,010	4,990	9,240	2,780	1,420	6,900	8,110	7,470	8,800	3,470	3,450	2,110
17	2,430	4,690	7,410	2,680	e1,400	6,190	6,950	7,760	9,930	3,590	3,010	1,960
18	2,980	6,250	5,910	2,470	1,350	5,640	6,070	7,110	9,720	3,050	2,750	1,860
19	2,740	7,450	4,950	2,350	1,810	5,170	5,740	8,010	14,400	2,680	2,560	21,100
20	2,060	6,470	4,390	e2,300	2,320	5,330	5,770	14,400	14,400	2,500	2,490	60,600
21	1,620	5,190	4,570	e2,250	2,730	19,300	5,630	11,500	15,800	2,380	2,330	35,400
22	1,460	4,630	7,700	e2,200	2,940	23,200	5,320	9,180	17,600	2,250	2,060	14,800
23	1,240	4,340	7,670	e2,150	16,000	15,000	5,340	8,520	12,200	2,220	2,000	18,100
24	1,120	3,910	6,040	e2,100	37,000	10,900	5,130	7,460	9,160	2,130	1,780	31,800
25	941	3,510	5,050	2,060	26,200	8,660	4,730	7,270	7,220	2,180	1,720	17,800
26	958	3,190	4,450	2,040	17,200	7,260	4,470	6,530	6,000	2,180	1,720	11,200
27	908	2,790	4,100	e2,000	12,000	6,580	4,270	5,930	5,140	2,020	1,580	8,510
28	917	2,530	3,740	e1,950	9,410	5,900	4,040	5,530	4,590	1,920	1,620	7,270
29	961	2,290	3,290	1,940	---	5,260	3,830	5,290	4,160	2,120	1,620	6,960
30	1,310	2,100	2,990	e1,850	---	4,980	3,670	5,010	3,810	2,120	1,530	6,920
31	3,200	---	2,800	1,820	---	5,250	---	4,840	---	1,880	1,520	---
TOTAL	36,989	110,830	123,160	134,890	155,490	310,780	229,330	207,590	251,140	110,910	75,180	278,810
MEAN	1,193	3,694	3,973	4,351	5,553	10,030	7,644	6,696	8,371	3,578	2,425	9,294
MAX	3,200	7,450	9,240	15,700	37,000	23,200	24,200	14,400	17,600	7,750	4,700	60,600
MIN	482	1,890	1,200	1,820	1,350	4,980	3,670	3,400	3,810	1,880	1,520	1,540
CFSM	0.39	1.22	1.31	1.44	1.84	3.32	2.53	2.22	2.77	1.18	0.80	3.08
IN.	0.46	1.36	1.52	1.66	1.91	3.83	2.82	2.56	3.09	1.37	0.93	3.43

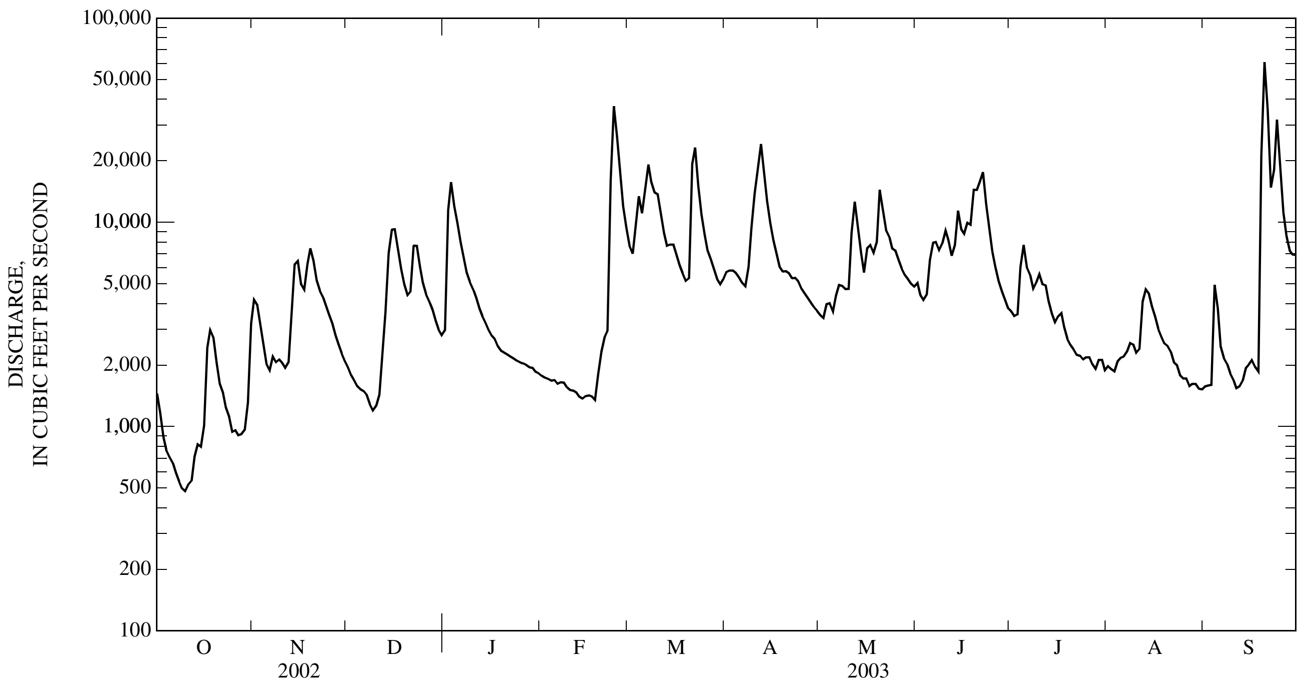
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1895 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,923	1,858	2,471	3,215	3,897	5,058	4,384	3,358	2,445	1,454	1,623	1,547
MAX	16,250	13,350	8,164	13,470	18,100	17,540	12,840	8,701	10,380	4,809	10,390	14,780
(WY)	(1943)	(1986)	(1973)	(1996)	(1998)	(1936)	(1901)	(1901)	(1972)	(1972)	(1955)	(1996)
MIN	343	388	410	475	471	929	992	1,001	643	402	388	411
(WY)	(1931)	(1932)	(1966)	(2002)	(2002)	(1931)	(1981)	(1969)	(1999)	(1966)	(1930)	(1963)

01636500 SHENANDOAH RIVER AT MILLVILLE, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1895 - 2003	
ANNUAL TOTAL	565,360		2,025,099			
ANNUAL MEAN	1,549		5,548		2,763	
HIGHEST ANNUAL MEAN					5,618	1996
LOWEST ANNUAL MEAN					927	2002
HIGHEST DAILY MEAN	13,500	Apr 23	60,600	Sep 20	192,000	Oct 16, 1942
LOWEST DAILY MEAN	302	Aug 26	482	Oct 10	194	Jul 24, 1930
ANNUAL SEVEN-DAY MINIMUM	326	Aug 21	548	Oct 6	240	Sep 7, 1966
MAXIMUM PEAK FLOW			66,100	Sep 20	230,000	Oct 16, 1942
MAXIMUM PEAK STAGE			17.31	Sep 20	(a)32.40	Oct 16, 1942
INSTANTANEOUS LOW FLOW			479	(b)	59	Oct 4, 1930
ANNUAL RUNOFF (CFSM)	0.51		1.84		0.91	
ANNUAL RUNOFF (INCHES)	6.96		24.93		12.42	
10 PERCENT EXCEEDS	4,000		11,500		5,630	
50 PERCENT EXCEEDS	720		3,970		1,610	
90 PERCENT EXCEEDS	389		1,470		608	

a From floodmarks.
b Oct. 9, 10.
e Estimated.



01638500 POTOMAC RIVER AT POINT OF ROCKS, MD

LOCATION.--Lat 39°16'24.9", long 77°32'35.2", Frederick County, Hydrologic Unit 02070008, on left bank at downstream side of bridge on U.S. Highway 15 at Point of Rocks, 0.3 mi downstream from Catoctin Creek (Virginia), 6 mi upstream from Monocacy River, and at mile 159.5.

DRAINAGE AREA.--9,651 mi^2.

PERIOD OF RECORD.--February 1895 to current year.

REVISED RECORDS.--WSP 192: 1895-1905. WSP 1432: 1899, 1901-2, 1904-5, 1912, 1914(M), 1915, 1917(M), 1918, 1919(M), 1920, 1921-23(M), 1924, 1925-28(M), 1930(M).

GAGE.--Water-stage recorder. Datum of gage is 200.63 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 28, 1929, nonrecording gage at same site. Prior to Sept. 2, 1902, at datum about 0.45 ft higher.

REMARKS.--Records good except those for estimated daily discharges (missing record, partial plugged intake), which are fair. Low flow affected slightly from 1913 to July 1981 by Stony River Reservoir; since December 1950 by Savage River Reservoir (see station 01597500); and since July 1981 by Jennings Randolph Lake. Low flow affected extensively at times by run-of-the-river hydroelectric plants. National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 2, 1889, reached a stage of 40.2 ft, from floodmarks, discharge, about 460,000 ft^3/s from rating curve extended as explained in footnotes.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 35,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 15	1815	44,300	10.01	May 17	1230	56,300	11.79
Jan 3	0615	88,800	16.11	May 20	0900	37,800	8.98
Feb 24	1430	90,100	16.26	Jun 5	0615	62,900	12.72
Mar 7	1800	78,000	14.74	Jun 8	1745	54,200	11.49
Mar 10	1830	66,300	13.18	Jun 14	1345	40,400	9.39
Mar 15	1345	42,400	9.71	Jun 22	1200	58,300	12.08
Mar 22	0300	94,800	16.85	Sep 21	0030	*150,000	*23.12
Apr 12	1930	68,600	13.49	Sep 2 4	1215	79,100	14.88
May 12	0745	68,600	13.50				

Minimum discharge, 1,480 ft^3/s, Oct. 10.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,980	20,700	4,840	11,200	4,810	21,200	17,100	10,000	18,000	9,670	5,540	3,930
2	4,580	15,300	4,430	36,400	4,740	19,000	17,400	10,500	21,100	9,020	4,930	4,130
3	4,070	10,400	4,100	80,500	4,630	21,100	17,500	12,100	19,300	8,590	4,810	6,830
4	3,240	7,670	3,760	53,600	5,000	27,300	17,800	11,200	37,500	10,100	4,630	12,300
5	2,650	5,970	3,440	40,800	4,960	26,700	17,100	10,300	58,000	12,700	4,840	19,300
6	2,200	5,420	3,310	31,800	5,030	30,300	16,500	11,300	42,100	10,900	5,260	16,800
7	2,040	6,110	3,100	26,100	4,990	67,800	16,900	16,800	34,600	10,600	6,090	13,500
8	1,850	9,160	2,670	22,100	4,880	63,700	20,100	17,500	48,500	9,670	6,060	9,780
9	1,620	9,320	2,680	19,500	4,830	51,300	36,400	18,600	46,800	9,320	6,080	8,020
10	1,540	7,670	2,940	18,500	4,590	60,800	46,200	25,000	41,400	10,500	5,660	7,180
11	1,690	7,010	3,330	17,000	4,560	54,600	54,500	46,500	34,800	15,300	5,820	6,100
12	1,860	6,570	5,600	14,900	4,320	38,500	62,700	66,300	27,000	14,500	8,640	5,010
13	2,790	7,980	12,300	14,100	3,980	31,400	57,000	46,900	24,100	13,300	13,000	4,990
14	3,900	e9,610	25,400	13,900	3,660	33,800	41,200	30,200	37,100	11,100	11,800	5,080
15	3,430	e17,300	41,800	12,400	3,720	41,700	32,100	23,800	36,300	9,680	10,100	5,190
16	3,660	e18,000	40,000	11,100	3,880	37,400	27,000	35,700	30,400	8,350	8,530	5,710
17	5,220	e18,700	30,400	10,000	2,500	32,800	23,000	52,400	26,500	8,410	8,580	6,310
18	10,900	e21,400	24,000	9,830	2,040	31,000	19,400	40,700	24,300	7,320	8,040	6,170
19	12,000	e23,900	19,700	8,600	2,570	29,000	17,700	34,300	29,500	6,570	7,050	e13,600
20	10,000	21,600	16,700	8,040	4,230	27,900	16,600	37,200	32,100	6,020	6,460	e79,300
21	7,540	16,500	16,500	7,750	6,120	59,900	16,400	32,900	39,400	5,580	5,760	112,000
22	6,120	14,200	23,300	8,060	9,310	83,200	15,500	26,900	56,000	5,250	4,930	e47,500
23	4,820	13,900	27,500	7,490	24,400	53,200	16,100	23,600	42,700	5,460	4,570	55,000
24	4,160	12,500	21,900	5,850	79,300	38,500	16,100	21,600	29,400	5,460	4,180	72,600
25	3,600	11,000	18,600	5,600	68,900	30,200	15,000	23,100	22,700	5,120	3,780	44,900
26	3,520	9,310	16,300	5,890	43,800	24,900	15,000	20,700	18,400	5,120	3,960	29,600
27	3,500	7,950	14,500	5,930	32,300	21,900	12,800	19,000	15,400	4,800	4,180	22,600
28	4,660	6,760	12,800	5,470	25,600	19,600	12,200	19,300	13,400	4,290	3,990	19,800
29	4,450	6,190	11,100	5,030	---	17,200	11,300	19,100	11,700	4,460	4,140	27,900
30	4,390	5,440	10,100	5,000	---	15,800	10,800	18,400	10,500	4,580	4,020	22,600
31	10,200	---	9,630	4,870	---	16,200	---	17,400	---	4,430	3,910	---
TOTAL	141,180	353,540	436,730	527,310	373,650	1,127,900	715,400	799,300	929,000	256,170	189,340	693,730
MEAN	4,554	11,780	14,090	17,010	13,340	36,380	23,850	25,780	30,970	8,264	6,108	23,120
MAX	12,000	23,900	41,800	80,500	79,300	83,200	62,700	66,300	58,000	15,300	13,000	112,000
MIN	1,540	5,420	2,670	4,870	2,040	15,800	10,800	10,000	10,500	4,290	3,780	3,930
CFSM	0.47	1.22	1.46	1.76	1.38	3.77	2.47	2.67	3.21	0.86	0.63	2.40
IN.	0.54	1.36	1.68	2.03	1.44	4.35	2.76	3.08	3.58	0.99	0.73	2.67

e Estimated

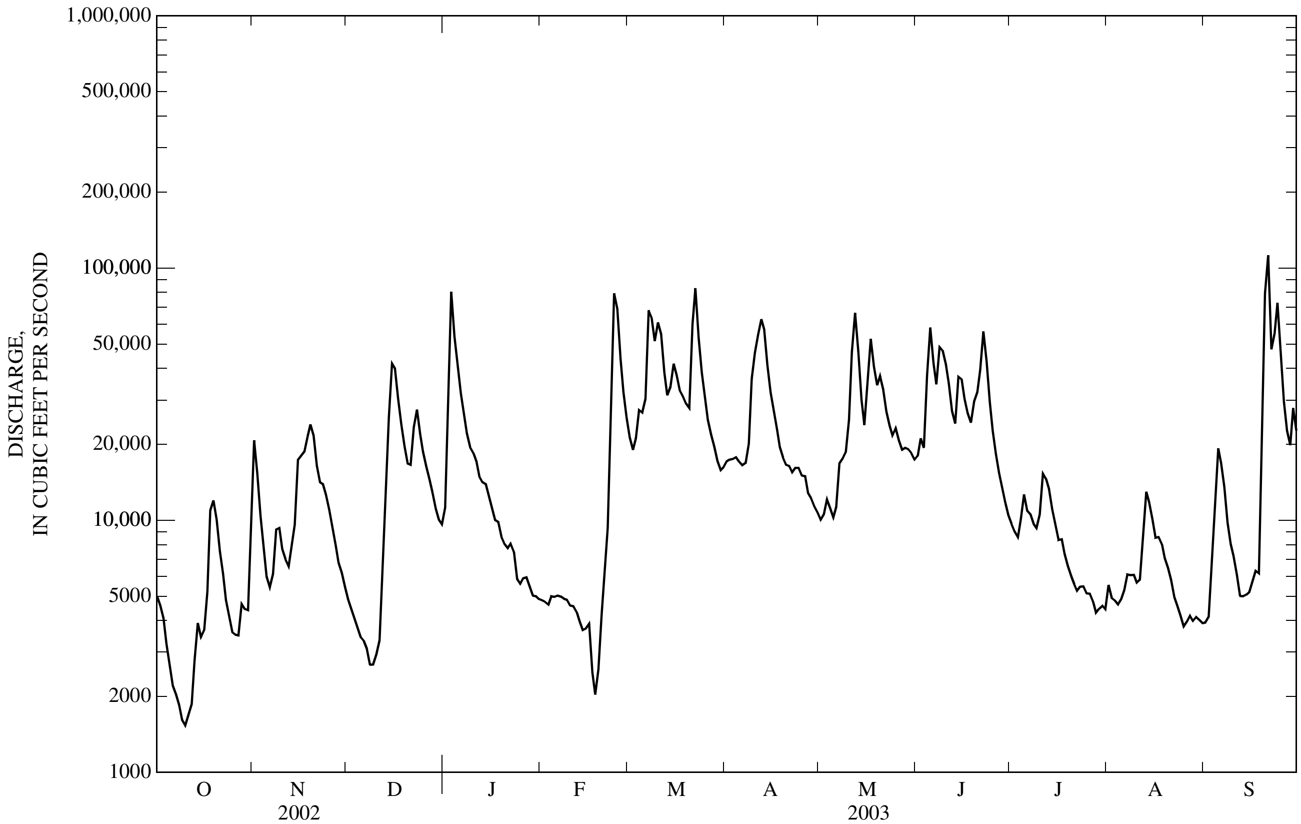
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1895 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4,988	5,649	8,529	11,420	14,310	19,770	16,480	12,360	8,136	4,505	4,279	3,942
MAX	37,030	39,000	32,610	42,160	47,870	68,360	43,840	41,970	40,400	16,000	23,580	38,300
(WY)	(1943)	(1986)	(1973)	(1996)	(1998)	(1936)	(1993)	(1924)	(1972)	(1949)	(1955)	(1996)
MIN	706	840	1,253	1,703	1,982	5,400	4,368	3,276	1,932	1,056	771	834
(WY)	(1931)	(1931)	(1966)	(1981)	(2002)	(1931)	(1915)	(1930)	(1969)	(1966)	(1930)	(1930)

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1895 - 2003	
ANNUAL TOTAL	2,258,972		6,543,250			
ANNUAL MEAN	6,189		17,930		9,516	
HIGHEST ANNUAL MEAN					18,750	1996
LOWEST ANNUAL MEAN					4,015	2002
HIGHEST DAILY MEAN	44,300	Apr 24	112,000	Sep 21	434,000	Mar 19, 1936
LOWEST DAILY MEAN	771	Aug 16	1,540	Oct 10	540	Sep 10, 1914
ANNUAL SEVEN-DAY MINIMUM	942	Sep 8	1,830	Oct 6	593	Sep 6, 1966
MAXIMUM PEAK FLOW			150,000	Sep 21	(a)480,000	Mar 19, 1936
MAXIMUM PEAK STAGE			23.12	Sep 21	41.03	Mar 19, 1936
INSTANTANEOUS LOW FLOW			1,480	Oct 10	530	(b)
ANNUAL RUNOFF (CFSM)	0.64		1.86		0.99	
ANNUAL RUNOFF (INCHES)	8.71		25.22		13.40	
10 PERCENT EXCEEDS	16,300		41,300		20,900	
50 PERCENT EXCEEDS	2,860		12,000		5,380	
90 PERCENT EXCEEDS	1,230		4,010		1,680	

a From rating curve extended above 300,000 ft^3/s, on the basis of adjustment of figure of peak flow at station near Washington for inflow and storage, and slope-area measurement of peak flow.
b Sept. 11, 12, 1966.



DAILY MEAN DISCHARGE - 2003 WATER YEAR

03050000 TYGART VALLEY RIVER NEAR DAILEY, WV

LOCATION.--Lat 38°48'33", long 79°52'55", NAD27, Randolph County, Hydrologic Unit 05020001, on right bank 50 ft downstream from highway bridge, 1,000 ft upstream from Stalnaker Run, 1.0 mi northeast of Dailey, 2.5 mi south of Beverly, and at mile 98.4.

DRAINAGE AREA.--185 mi^2.

PERIOD OF RECORD.--April 1915 to September 1975, October 1975 to October 1976 (gage heights only), July 1988 to current year. Prior to October 1960, published as Tygart River near Dailey.

REVISED RECORDS.--WSP 823: Drainage area. WSP 873: 1932(M), WSP 1053: 1918(M), 1928(M), 1932, 1934-38. WSP 1305: 1924(M). WDR WV-97-1: Drainage area, 1976(M).

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,940.09 ft above NGVD of 1929, adjustment of 1912. Prior to Sept. 27, 1928, nonrecording gage a few feet upstream at same datum. Sept. 27, 1928, to Dec. 16, 1941, nonrecording gage at site 50 ft upstream at same datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 5, 1985, reached a stage of 16.6 ft, from floodmarks; discharge, about 22,000 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 23	0700	8,820	12.26	Sep 19	2000	9,210	12.42
May 11	0300	*11,700	*13.32				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	109	571	424	512	e400	450	321	371	1,870	82	51	199
2	80	413	356	2,350	e370	1,020	1,410	851	1,210	93	48	934
3	63	319	320	1,350	353	1,100	1,240	595	718	81	42	1,270
4	52	261	256	1,090	1,890	791	701	491	1,430	75	33	2,060
5	43	247	269	716	1,650	1,030	508	595	1,130	61	35	1,710
6	40	919	245	543	748	2,150	373	696	658	58	34	666
7	33	985	196	420	535	1,620	1,140	542	926	65	30	388
8	26	664	194	357	389	894	2,060	471	1,600	260	206	263
9	23	483	170	356	294	930	1,570	1,330	949	645	763	190
10	25	377	155	455	286	857	1,380	3,000	614	529	718	146
11	68	342	229	402	244	594	1,310	7,370	420	368	959	115
12	114	872	764	303	220	446	1,200	1,410	415	254	914	95
13	136	2,290	647	289	157	814	825	963	515	186	435	79
14	207	922	905	272	e140	2,020	578	719	1,060	222	269	73
15	153	579	833	224	e160	1,140	432	547	612	1,020	182	73
16	635	436	660	e190	e200	896	345	484	517	526	157	136
17	1,310	898	529	e165	e260	835	285	375	758	271	886	98
18	590	1,100	441	e145	e220	725	241	537	869	169	548	96
19	358	783	409	e135	e200	602	233	960	588	178	296	5,160
20	312	890	1,470	e125	e330	529	198	639	822	137	198	2,770
21	304	724	1,450	e115	628	601	189	575	968	97	142	749
22	248	641	793	e110	2,460	481	211	635	639	80	108	447
23	193	551	637	e105	7,740	398	232	514	427	74	87	435
24	153	463	513	e96	e2,130	334	226	404	296	64	69	340
25	128	460	564	e93	e1,120	286	210	305	224	54	54	252
26	189	471	581	e89	e750	255	207	253	164	44	44	207
27	261	748	472	e86	547	237	268	212	137	37	50	171
28	232	729	393	e82	443	200	256	194	119	42	64	179
29	472	563	333	e160	---	184	226	306	100	116	55	163
30	2,250	471	292	e300	---	214	213	394	81	83	51	137
31	930	---	296	e350	---	228	---	429	---	63	94	---
TOTAL	9,737	20,172	15,796	11,985	24,864	22,861	18,588	27,167	20,836	6,034	7,622	19,601
MEAN	314	672	510	387	888	737	620	876	695	195	246	653
MAX	2,250	2,290	1,470	2,350	7,740	2,150	2,060	7,370	1,870	1,020	959	5,160
MIN	23	247	155	82	140	184	189	194	81	37	30	73
CFSM	1.70	3.63	2.75	2.09	4.80	3.99	3.35	4.74	3.75	1.05	1.33	3.53
IN.	1.96	4.06	3.18	2.41	5.00	4.60	3.74	5.46	4.19	1.21	1.53	3.94

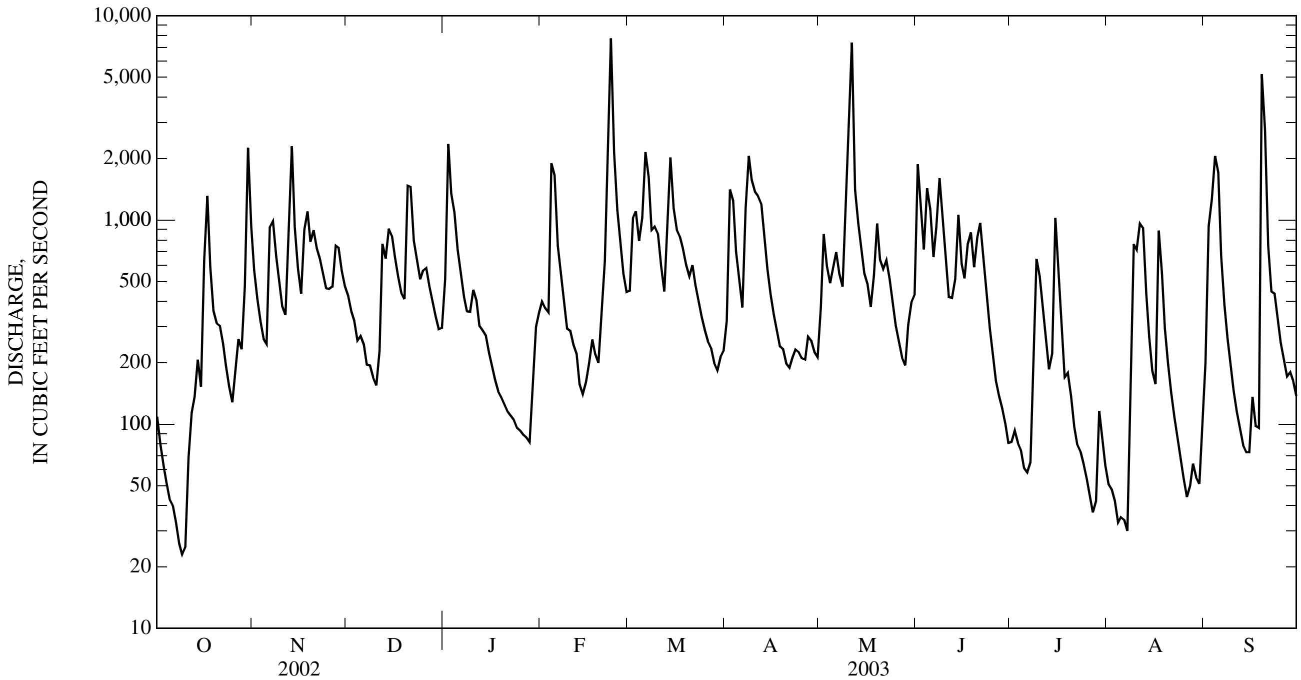
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	121	236	442	551	595	717	519	451	240	162	158	90.8
MAX	664	818	1,269	1,092	1,270	1,780	1,145	1,576	1,066	764	962	653
(WY)	(1938)	(1973)	(1973)	(1996)	(1994)	(1963)	(2002)	(1996)	(1928)	(1996)	(1942)	(2003)
MIN	0.000	0.000	60.2	73.3	139	304	155	65.7	13.2	6.72	0.50	0.19
(WY)	(1931)	(1931)	(1966)	(1940)	(1941)	(1957)	(1921)	(1930)	(1991)	(1930)	(1930)	(1930)

03050000 TYGART VALLEY RIVER NEAR DAILEY, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1915 - 2003	
ANNUAL TOTAL	151,013.9		205,263			
ANNUAL MEAN	414		562		357	
HIGHEST ANNUAL MEAN					611	1996
LOWEST ANNUAL MEAN					182	1941
HIGHEST DAILY MEAN	7,210	Apr 22	7,740	Feb 23	11,700	May 17, 1996
LOWEST DAILY MEAN	3.0	Sep 14	23	Oct 9	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	4.2	Sep 11	35	Oct 4	0.00	Sep 12, 1930
MAXIMUM PEAK FLOW			11,700	May 11	19,900	May 17, 1996
MAXIMUM PEAK STAGE			13.32	May 11	(b)17.20	Feb 4, 1932
INSTANTANEOUS LOW FLOW			22	Oct 10	0.00	(a)
ANNUAL RUNOFF (CFSM)	2.24		3.04		1.93	
ANNUAL RUNOFF (INCHES)	30.37		41.27		26.19	
10 PERCENT EXCEEDS	893		1,140		850	
50 PERCENT EXCEEDS	203		368		166	
90 PERCENT EXCEEDS	23		77		17	

a Sept. 12 to Nov. 30, 1930, Sept. 29 to Nov. 5, 1953.
b From floodmarks.
e Estimated.



03050500 TYGART VALLEY RIVER NEAR ELKINS, WV

LOCATION.--Lat 38°55'25", long 79°52'45", NAD27, Randolph County, Hydrologic Unit 05020001, on left bank 1.4 mi upstream from Leading Creek, 1.5 mi west of Elkins, and at mile 79.5.

DRAINAGE AREA.--271 mi^2.

PERIOD OF RECORD.--October 1944 to current year. Prior to October 1960, published as Tygart River near Elkins.

REVISED RECORDS.--WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,893.95 ft above NGVD of 1929, adjustment of 1912. Prior to Nov. 16, 1944, nonrecording gage and Nov. 16, 1944, to Sept. 30, 1951, water-stage recorder at site 200 ft upstream at same datum.

REMARKS.--Records good except those above 3,000 ft^3/s, which are fair, and those for periods of estimated daily discharges (ice effect), which are poor. Slight regulation at times by flood-diversion dam upstream from station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 23	1900	*8,470	*14.47	May 11	1800	8,010	14.08
May 10	0330	5,280	11.48	Sep 20	0900	6,880	13.07

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	139	748	588	503	532	585	413	373	2,680	113	96	276
2	116	541	499	2,620	503	1,340	1,850	1,120	2,130	125	70	1,330
3	87	407	447	2,090	466	1,630	1,840	876	989	120	53	2,590
4	73	322	360	1,780	2,290	1,180	993	686	1,480	109	70	1,990
5	64	299	344	1,060	2,770	1,500	711	843	1,550	104	102	2,510
6	53	1,030	324	743	1,100	3,350	518	1,070	883	93	90	963
7	48	1,440	255	584	743	2,700	1,120	800	1,030	80	77	505
8	41	920	247	479	539	1,430	3,010	695	2,280	286	106	350
9	30	632	227	482	383	1,470	2,120	1,700	1,260	805	791	250
10	29	484	201	649	368	1,330	2,110	4,700	807	805	1,510	191
11	43	417	259	581	316	875	1,750	6,960	528	509	1,060	151
12	108	795	917	420	271	636	1,750	3,750	516	370	1,830	125
13	144	2,970	907	343	224	858	1,210	1,340	450	278	873	114
14	240	1,370	1,220	342	e200	2,680	811	1,000	1,260	232	405	104
15	194	790	1,220	276	223	1,690	590	720	811	752	281	120
16	493	577	938	235	277	1,240	463	616	690	596	268	169
17	1,690	1,090	747	e210	358	1,100	376	473	924	287	1,020	152
18	778	1,640	600	e190	285	947	316	573	1,280	209	824	124
19	450	1,120	557	e180	271	766	296	1,240	801	193	410	3,990
20	370	1,260	1,540	e165	287	650	263	884	892	185	278	5,400
21	387	1,020	2,230	e155	366	727	249	639	1,350	138	199	1,220
22	310	844	1,130	e145	2,290	615	275	729	875	123	157	617
23	238	725	862	e135	7,450	507	295	608	586	109	134	560
24	186	605	674	e130	5,650	425	301	507	385	104	116	465
25	155	593	750	e125	1,670	356	285	386	279	80	105	332
26	194	606	819	e118	1,040	314	274	303	213	57	81	270
27	299	900	643	e115	780	303	305	257	172	59	44	230
28	275	989	526	e110	627	260	316	256	149	71	86	255
29	415	754	440	188	---	240	279	298	128	140	100	257
30	2,460	630	380	398	---	271	259	441	111	138	96	223
31	1,390	---	372	450	---	308	---	442	---	111	96	---
TOTAL	11,499	26,518	21,223	16,001	32,279	32,283	25,348	35,285	27,489	7,381	11,428	25,833
MEAN	371	884	685	516	1,153	1,041	845	1,138	916	238	369	861
MAX	2,460	2,970	2,230	2,620	7,450	3,350	3,010	6,960	2,680	805	1,830	5,400
MIN	29	299	201	110	200	240	249	256	111	57	44	104
CFSM	1.37	3.26	2.53	1.90	4.25	3.84	3.12	4.20	3.38	0.88	1.36	3.18
IN.	1.58	3.64	2.91	2.20	4.43	4.43	3.48	4.84	3.77	1.01	1.57	3.55

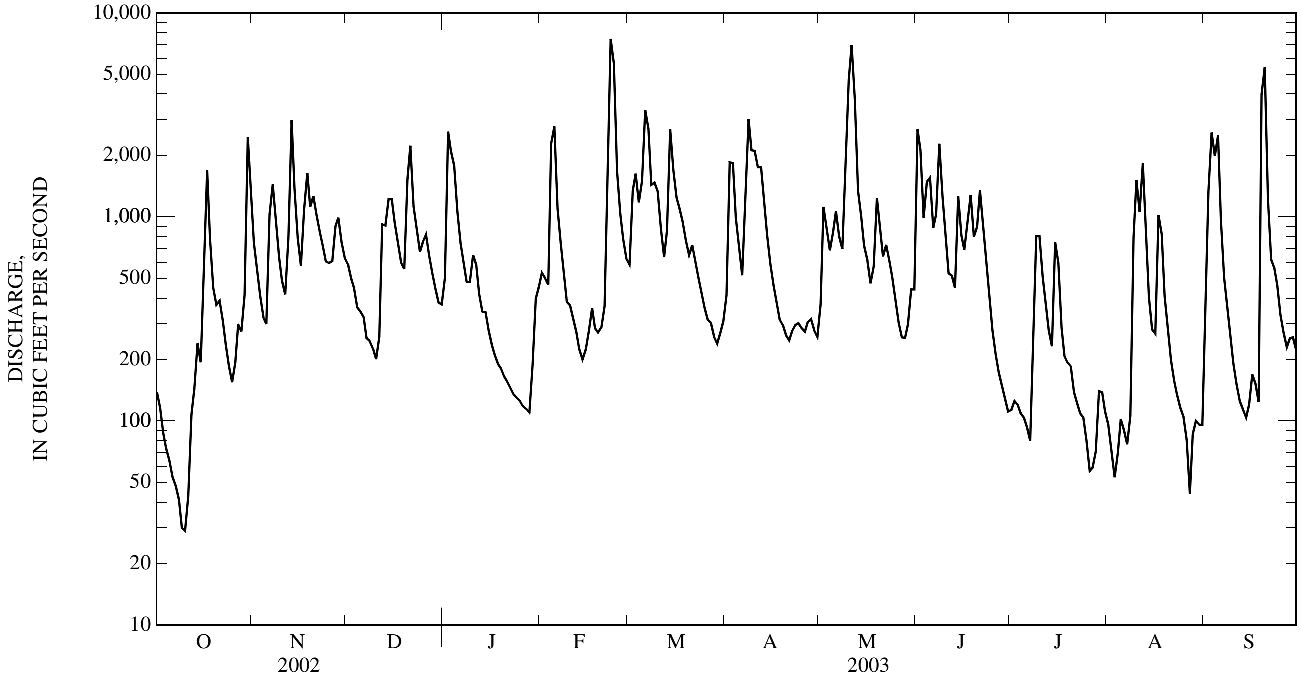
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	183	401	660	768	885	1,033	777	626	348	249	218	145
MAX	954	2,184	1,787	1,504	1,783	2,579	1,539	2,371	1,314	1,021	1,166	861
(WY)	(1980)	(1986)	(1973)	(1952)	(1994)	(1963)	(2002)	(1996)	(1974)	(1996)	(1996)	(2003)
MIN	2.82	1.93	75.7	174	145	484	264	110	28.8	14.9	6.01	2.17
(WY)	(1954)	(1954)	(1966)	(1977)	(1978)	(1957)	(1955)	(1991)	(1965)	(1993)	(1965)	(1995)

03050500 TYGART VALLEY RIVER NEAR ELKINS, WV--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1945 - 2003	
ANNUAL TOTAL	203,085.9		272,567			
ANNUAL MEAN	556		747		523	
HIGHEST ANNUAL MEAN					870	1996
LOWEST ANNUAL MEAN					312	1966
HIGHEST DAILY MEAN	6,820	Apr 29	7,450	Feb 23	16,000	Nov 5, 1985
LOWEST DAILY MEAN	4.1	Sep 20	29	Oct 10	(e)	(a)
ANNUAL SEVEN-DAY MINIMUM	5.5	Sep 16	44	Oct 5	0.10	Sep 20, 1959
MAXIMUM PEAK FLOW			8,470	Feb 23	(b)23,500	Nov 5, 1985
MAXIMUM PEAK STAGE			14.47	Feb 23	(c)22.81	Nov 5, 1985
INSTANTANEOUS LOW FLOW			18	Aug 27	(e)0.10	(a)
ANNUAL RUNOFF (CFSM)	2.05		2.76		1.93	
ANNUAL RUNOFF (INCHES)	27.88		37.42		26.21	
10 PERCENT EXCEEDS	1,280		1,680		1,230	
50 PERCENT EXCEEDS	259		463		246	
90 PERCENT EXCEEDS	31		110		26	

a Sept. 20-29, 1959.
b From rating curve extended above 13,800 ft^3/s on basis of slope-area measurement of peak flow.
c From floodmarks.
e Estimated.



03051000 TYGART VALLEY RIVER AT BELINGTON, WV

LOCATION.--Lat 39°01'45", long 79°56'10", NAD27, Barbour County, Hydrologic Unit 05020001, on left bank opposite mouth of Mill Creek, 0.2 mi downstream from highway bridge at Belington, and at mile 62.4.

DRAINAGE AREA.--406 mi^2, excluding that of Mill Creek.

PERIOD OF RECORD.--June 1907 to current year. Prior to October 1960, published as Tygart River at Belington.

REVISED RECORDS.--WSP 823: Drainage area. WSP 953: 1933(M), 1941(M). WSP 1335: 1912, 1914-15, 1916(M), 192l-22(M), 1925(M), 1928, 1933. WSP 1385: 1909(M), 1913-15(M), 1917-18, 1924(M), 1928(M), 1932, 1934, 1936, 1938-39, 1948-49. WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,679.49 ft above NGVD of 1929, adjustment of 1912. Prior to Apr. 25, 1939, nonrecording gage at site 0.2 mi upstream at same datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect, no gage-height record), which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1888, reached a stage of 21.7 ft, former site, from floodmarks, discharge, 21,200 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 23	2200	*12,900	*15.79
May 11	2100	11,300	14.70
Sep 20	1300	7,870	12.20

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	206	1,260	971	801	e860	962	630	459	4,370	156	142	278
2	163	849	831	3,400	e800	2,010	2,700	1,610	4,140	218	120	1,160
3	136	605	746	3,720	e770	2,620	2,810	1,540	1,760	189	86	3,930
4	105	471	585	3,290	e3,800	2,030	1,660	1,140	1,910	158	70	2,390
5	92	408	557	1,990	e4,400	2,410	1,230	1,310	2,320	142	123	3,370
6	76	1,340	541	1,380	1,990	5,250	982	2,020	1,420	127	193	1,460
7	64	2,540	434	1,060	1,310	4,510	1,550	1,520	1,580	116	125	767
8	58	1,590	411	852	926	2,650	4,430	1,360	3,470	297	106	469
9	51	1,030	377	823	656	2,780	3,330	2,620	2,040	843	320	359
10	45	757	344	1,200	601	2,520	3,400	7,790	1,310	1,120	2,010	276
11	54	635	425	1,110	511	1,630	2,880	9,640	826	685	1,060	225
12	208	847	1,380	779	446	1,180	2,880	6,400	746	474	2,320	183
13	281	3,820	1,620	594	375	1,190	2,080	2,230	763	394	1,260	164
14	306	2,260	2,260	585	e330	3,840	1,410	1,700	1,580	293	599	151
15	305	1,270	2,270	486	e300	2,780	994	1,220	1,380	495	366	176
16	583	886	1,740	393	322	2,000	764	1,020	1,110	832	337	271
17	2,320	1,650	1,410	326	364	1,750	614	778	1,330	387	1,090	267
18	1,260	2,740	1,110	e300	456	1,460	502	864	2,150	260	1,420	199
19	668	1,970	1,070	e275	483	1,150	473	1,890	1,390	250	627	4,830
20	570	2,240	2,350	e260	497	940	425	1,480	1,420	229	396	7,110
21	652	1,780	3,610	e245	610	983	405	1,060	2,240	184	281	2,170
22	492	1,370	2,010	e230	3,360	881	467	1,060	1,520	148	220	1,040
23	366	1,160	1,590	e220	11,400	716	484	915	988	136	184	889
24	288	954	1,230	e210	9,380	614	493	853	642	126	155	770
25	241	962	1,390	e200	2,890	512	475	661	451	116	138	533
26	228	981	1,690	e190	1,830	451	456	519	339	84	119	435
27	373	1,310	1,240	e180	1,360	458	469	430	273	65	94	372
28	382	1,560	957	e170	1,080	410	486	430	232	129	74	591
29	418	1,230	769	e300	---	361	437	441	206	366	140	588
30	2,810	1,030	645	e680	---	407	414	565	174	252	143	495
31	2,300	---	602	e740	---	499	---	667	---	173	178	---
TOTAL	16,101	41,505	37,165	26,989	52,107	51,954	40,330	56,192	44,080	9,444	14,496	35,918
MEAN	519	1,384	1,199	871	1,861	1,676	1,344	1,813	1,469	305	468	1,197
MAX	2,810	3,820	3,610	3,720	11,400	5,250	4,430	9,640	4,370	1,120	2,320	7,110
MIN	45	408	344	170	300	361	405	430	174	65	70	151
CFSM	1.28	3.41	2.95	2.14	4.58	4.13	3.31	4.46	3.62	0.75	1.15	2.95
IN.	1.48	3.80	3.41	2.47	4.77	4.76	3.70	5.15	4.04	0.87	1.33	3.29

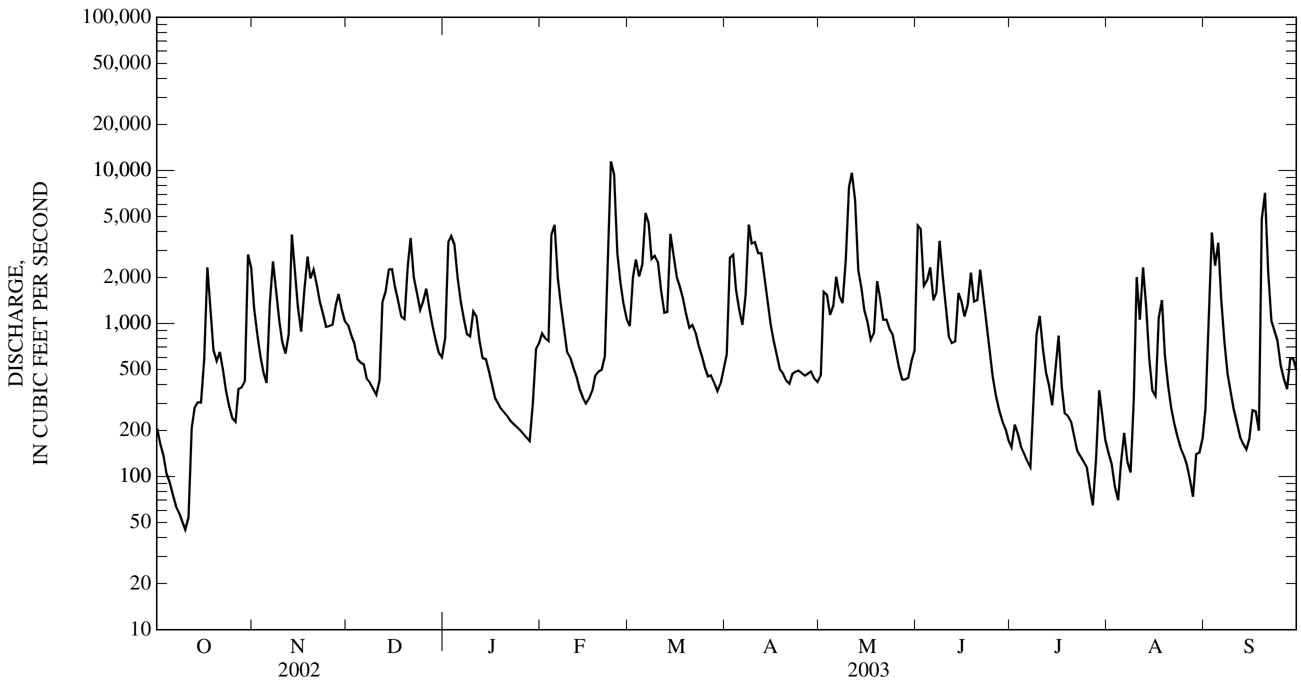
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1907 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	323	622	1,008	1,271	1,364	1,560	1,193	1,015	559	422	348	221
MAX	1,765	3,431	2,837	2,731	2,905	3,765	2,387	3,847	2,449	1,997	1,981	1,202
(WY)	(1912)	(1986)	(1973)	(1911)	(1994)	(1963)	(2002)	(1996)	(1910)	(1912)	(1942)	(1971)
MIN	1.26	5.74	84.2	245	255	437	383	203	51.5	18.5	2.50	0.65
(WY)	(1931)	(1954)	(1909)	(1977)	(1978)	(1910)	(1921)	(1991)	(1965)	(1999)	(1930)	(1930)

03051000 TYGART VALLEY RIVER AT BELINGTON, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1907 - 2003	
ANNUAL TOTAL	326,573.2		426,281			
ANNUAL MEAN	895		1,168		822	
HIGHEST ANNUAL MEAN					1,375	1996
LOWEST ANNUAL MEAN					506	1966
HIGHEST DAILY MEAN	9,850	Mar 21	11,400	Feb 23	27,400	Nov 5, 1985
LOWEST DAILY MEAN	5.4	Sep 21	45	Oct 10	0.10	(a)
ANNUAL SEVEN-DAY MINIMUM	8.8	Sep 10	63	Oct 5	0.17	Sep 13, 1930
MAXIMUM PEAK FLOW			12,900	Feb 23	(b)29,500	Nov 5, 1985
MAXIMUM PEAK STAGE			15.79	Feb 23	(c)23.65	Nov 5, 1985
INSTANTANEOUS LOW FLOW			38	(d)	0.10	(a)
ANNUAL RUNOFF (CFSM)	2.20		2.88		2.02	
ANNUAL RUNOFF (INCHES)	29.92		39.06		27.50	
10 PERCENT EXCEEDS	2,110		2,630		1,990	
50 PERCENT EXCEEDS	425		740		405	
90 PERCENT EXCEEDS	50		161		45	

a Sept. 13-16, 1930.
b From rating curve extended above 18,700 ft^3/s.
c From floodmarks.
d Oct. 10, 11.
e Estimated.



03052000 MIDDLE FORK RIVER AT AUDRA, WV

LOCATION.--Lat 39°02'22", long 80°04'06", NAD27, Barbour County, Hydrologic Unit 05020001, on right bank at Audra, 600 ft upstream from highway bridge, and at mile 2.9.

DRAINAGE AREA.--148 mi^2.

PERIOD OF RECORD.--February 1942 to September 1979, October 1988 to current year.

REVISED RECORDS.--WDR WV-97-1: Drainage area, 1944(P), 1945(M), 1947(M), 1948(P), 1949-50(M), 1955-56(M), 1957(P), 1963(P), 1964(M), 1972(P), 1986(M), 1992(M), 1994(P).

GAGE.--Water-stage recorder with satellite telemeter. Elevation of gage is approximately 1,670 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 5, 1985, reached a stage of 15.8 ft, from floodmarks, discharge, about 17,100 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 23	1000	6,070	9.63	Aug 17	1100	3,760	7.74
May 9	2100	5,590	9.27	Sep 2	2200	*6,300	*9.80
May 11	0100	6,010	9.59	Sep 19	1100	4,420	8.32
Jun 1	1200	3,440	7.45				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	480	446	372	554	433	258	266	2,570	57	46	420
2	39	389	386	1,050	482	735	953	826	1,450	52	40	1,880
3	35	307	345	1,420	386	887	893	745	817	49	41	2,500
4	30	245	270	1,360	1,520	739	634	558	734	44	35	1,280
5	30	209	292	867	1,380	907	530	550	594	43	63	909
6	27	543	314	652	804	2,090	437	666	446	41	86	548
7	25	957	255	499	586	1,630	574	551	718	35	58	365
8	22	671	238	414	435	1,050	1,010	484	1,020	57	47	256
9	20	480	206	384	330	1,110	1,120	1,680	667	98	67	182
10	19	379	180	459	318	957	1,080	3,390	454	205	189	137
11	24	344	260	430	256	682	991	3,780	335	142	206	107
12	83	370	615	338	219	517	891	1,340	428	110	598	83
13	104	915	602	280	149	553	700	922	413	108	515	67
14	190	666	905	e220	192	1,410	532	653	531	89	295	61
15	146	488	815	e180	257	971	418	501	561	63	185	80
16	427	393	695	148	363	805	341	466	758	43	248	198
17	948	706	578	e135	405	719	281	357	790	38	2,300	119
18	499	894	507	e125	365	585	234	399	931	33	989	86
19	314	769	519	e115	315	455	217	702	645	92	477	2,480
20	310	925	1,010	e108	357	369	178	544	878	104	293	1,620
21	369	720	1,120	e100	423	344	184	473	948	58	189	811
22	281	575	780	e96	2,580	275	228	413	689	41	135	1,020
23	204	472	649	e92	5,050	226	265	362	465	35	105	698
24	155	396	507	e87	1,970	194	261	632	324	38	79	489
25	125	424	578	e84	1,040	168	251	429	226	35	59	347
26	119	448	611	e80	733	159	251	314	165	30	47	299
27	151	628	490	e78	559	171	313	249	128	24	42	229
28	129	612	413	e76	471	144	271	231	113	83	64	287
29	143	515	352	143	---	134	248	240	93	145	62	327
30	625	465	303	470	---	176	227	540	72	101	50	307
31	590	---	294	496	---	211	---	476	---	59	107	---
TOTAL	6,234	16,385	15,535	11,358	22,499	19,806	14,771	23,739	18,963	2,152	7,717	18,192
MEAN	201	546	501	366	804	639	492	766	632	69.4	249	606
MAX	948	957	1,120	1,420	5,050	2,090	1,120	3,780	2,570	205	2,300	2,500
MIN	19	209	180	76	149	134	178	231	72	24	35	61
CFSM	1.36	3.69	3.39	2.48	5.43	4.32	3.33	5.17	4.27	0.47	1.68	4.10
IN.	1.57	4.12	3.90	2.85	5.66	4.98	3.71	5.97	4.77	0.54	1.94	4.57

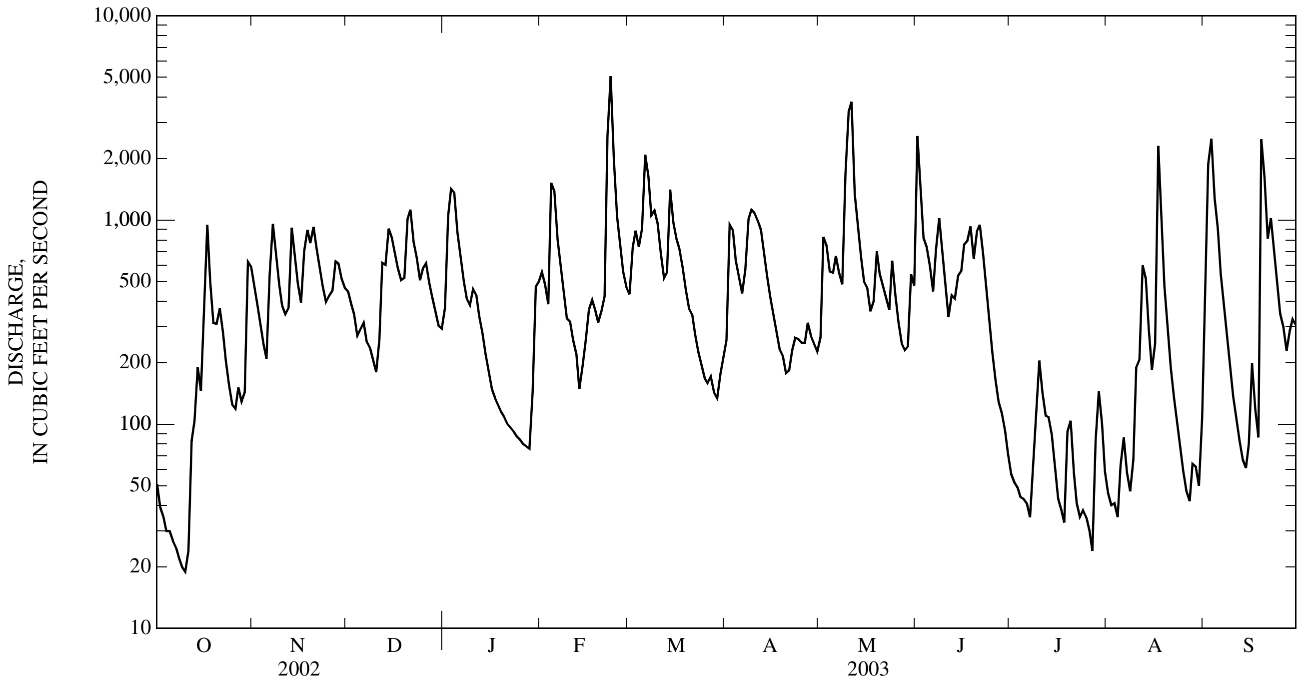
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	119	262	472	554	584	668	518	432	225	156	143	104
MAX	548	814	1,124	986	1,080	1,443	1,012	1,634	760	720	690	642
(WY)	(1955)	(1973)	(1973)	(1994)	(1994)	(1963)	(1973)	(1996)	(1972)	(1996)	(1942)	(1971)
MIN	0.39	2.40	47.5	96.3	134	372	222	90.3	15.4	5.39	2.60	1.40
(WY)	(1954)	(1954)	(1966)	(1977)	(1978)	(1966)	(1971)	(1991)	(1965)	(1966)	(1993)	(1946)

03052000 MIDDLE FORK RIVER AT AUDRA, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1942 - 2003	
ANNUAL TOTAL	135,421.5		177,351			
ANNUAL MEAN	371		486		353	
HIGHEST ANNUAL MEAN					554	1996
LOWEST ANNUAL MEAN					203	1966
HIGHEST DAILY MEAN	4,090	Mar 20	5,050	Feb 23	9,320	May 17, 1996
LOWEST DAILY MEAN	2.3	Sep 14	19	Oct 10	0.20	(a)
ANNUAL SEVEN-DAY MINIMUM	2.7	Sep 12	24	Oct 5	0.20	Oct 11, 1953
MAXIMUM PEAK FLOW			6,300	Sep 2	16,700	May 17, 1996
MAXIMUM PEAK STAGE			9.80	Sep 2	15.60	May 17, 1996
INSTANTANEOUS LOW FLOW			19	(b)	0.20	(a)
ANNUAL RUNOFF (CFSM)	2.51		3.28		2.38	
ANNUAL RUNOFF (INCHES)	34.04		44.58		32.36	
10 PERCENT EXCEEDS	806		963		832	
50 PERCENT EXCEEDS	226		357		188	
90 PERCENT EXCEEDS	14		58		15	

a Oct. 11-27, 1953.
b Oct. 9, 10.
e Estimated.



03052500 SAND RUN NEAR BUCKHANNON, WV

LOCATION.--Lat 38°57'50", long 80°09'10", NAD27, Upshur County, Hydrologic Unit 05020001, on right bank 300 ft downstream from Left Fork, 4.5 mi southeast of Buckhannon, and at mile 6.4.

DRAINAGE AREA.--14.3 mi^2.

PERIOD OF RECORD.--October 1946 to current year.

REVISED RECORDS.--WSP 1725: 1955(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter and crest-stage gage. Elevation of gage is approximately 1,530 ft above NGVD of 1929, from topographic map. Prior to May 4, 1983, at datum 1.00 ft higher.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 22	1230	944	5.39	May 9	1615	*1,430	(a)*6.23
Feb 23	0630	1,080	5.65	May 10	1730	469	4.70

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	19	22	33	45	46	49	12	150	3.5	2.6	11
2	0.73	13	19	64	40	76	93	16	70	3.0	1.8	72
3	0.63	11	18	155	47	66	50	18	46	2.7	4.7	61
4	0.62	8.4	15	116	144	49	34	15	44	2.2	8.2	60
5	0.50	9.4	24	59	81	48	39	26	38	1.8	30	31
6	0.39	34	27	46	44	60	31	34	29	1.4	9.1	19
7	0.34	35	23	36	34	46	51	33	137	1.4	5.4	14
8	0.29	22	20	33	25	36	60	31	100	5.3	5.0	9.5
9	0.29	17	17	34	23	30	88	329	48	4.4	4.9	7.0
10	0.37	13	15	39	19	23	74	283	30	8.7	5.2	5.5
11	7.4	13	49	33	17	20	77	195	24	5.9	5.8	4.0
12	11	21	73	26	15	18	60	68	26	2.7	13	3.0
13	6.6	34	64	e23	e13	20	42	48	31	3.2	15	2.7
14	5.1	23	87	e18	16	27	31	31	41	1.9	7.5	2.7
15	3.5	17	66	e16	32	25	24	29	58	1.3	4.8	6.2
16	48	16	53	e15	48	23	20	23	47	1.0	28	7.0
17	30	70	42	e14	91	21	17	18	68	0.80	141	3.4
18	13	62	34	e13	57	18	16	36	62	2.5	31	4.3
19	8.5	53	28	e12	44	15	14	47	47	14	16	100
20	21	53	61	e12	50	14	12	33	97	3.3	10	53
21	19	35	56	e11	73	14	20	38	72	1.8	6.7	34
22	11	26	42	e11	527	12	21	32	47	1.3	5.2	47
23	7.4	22	39	e10	609	10	20	39	29	1.2	4.0	59
24	5.5	21	33	e9.7	125	9.8	17	194	19	1.1	5.7	34
25	4.5	25	70	9.4	68	9.1	16	71	14	0.82	2.2	22
26	5.9	24	65	e9.2	47	11	16	40	11	1.6	1.7	19
27	7.3	32	45	8.9	37	12	16	29	8.7	0.82	2.9	15
28	3.7	32	33	8.7	36	9.9	11	29	7.3	11	5.0	18
29	11	26	26	35	---	10	11	27	6.3	13	2.4	25
30	29	24	22	49	---	17	10	32	4.4	4.1	4.5	19
31	24	---	21	38	---	19	---	55	---	2.4	7.5	---
TOTAL	287.56	810.8	1,209	996.9	2,407	814.8	1,040	1,911	1,411.7	110.14	396.8	768.3
MEAN	9.28	27.0	39.0	32.2	86.0	26.3	34.7	61.6	47.1	3.55	12.8	25.6
MAX	48	70	87	155	609	76	93	329	150	14	141	100
MIN	0.29	8.4	15	8.7	13	9.1	10	12	4.4	0.80	1.7	2.7
CFSM	0.65	1.89	2.73	2.25	6.01	1.84	2.42	4.31	3.29	0.25	0.90	1.79
IN.	0.75	2.11	3.15	2.59	6.26	2.12	2.71	4.97	3.67	0.29	1.03	2.00

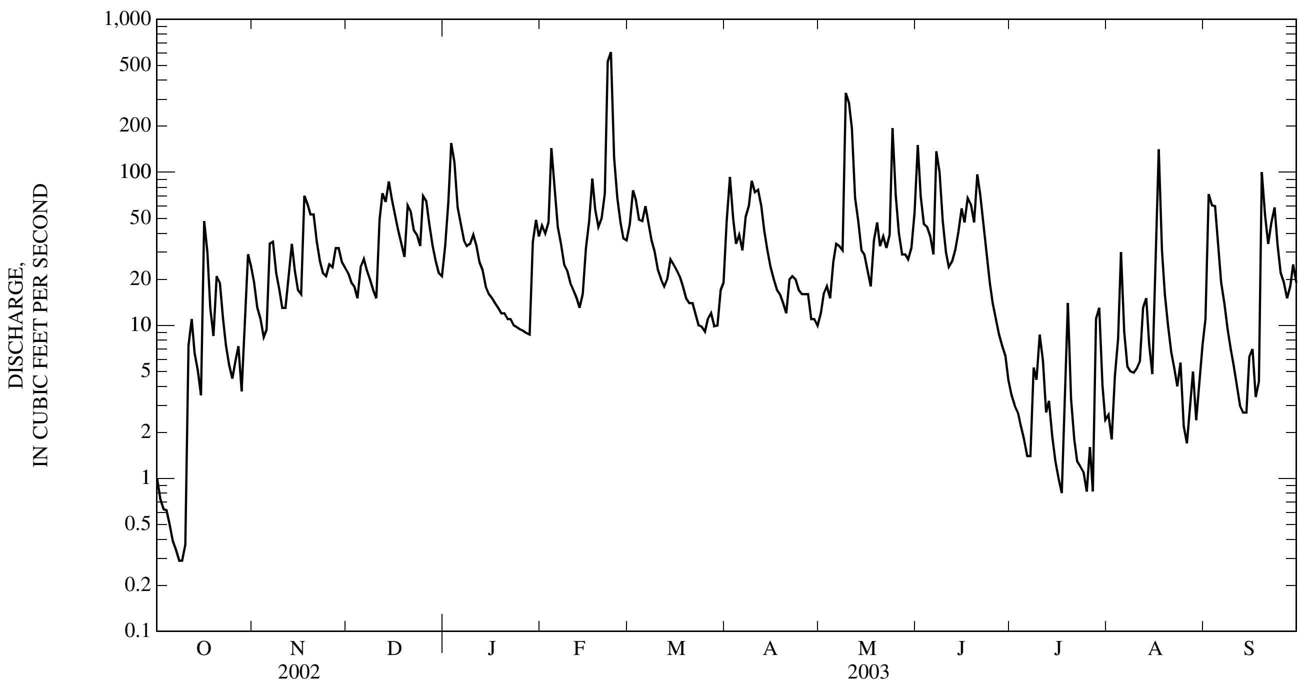
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	10.0	23.3	37.9	42.4	48.1	51.6	40.2	30.4	17.6	13.5	10.5	7.31
MAX	60.3	145	87.3	91.1	116	119	83.9	154	75.1	59.4	48.5	30.2
(WY)	(1977)	(1986)	(1973)	(1994)	(1994)	(1993)	(1973)	(1996)	(1989)	(1958)	(1977)	(1979)
MIN	0.013	0.060	3.52	9.44	11.1	12.3	10.2	4.91	0.44	0.37	0.15	0.071
(WY)	(1954)	(1954)	(1966)	(1977)	(1978)	(1987)	(1971)	(1982)	(1965)	(1966)	(1993)	(1953)

03052500 SAND RUN NEAR BUCKHANNON, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1947 - 2003	
ANNUAL TOTAL	9,871.56		12,164.00			
ANNUAL MEAN	27.0		33.3		27.6	
HIGHEST ANNUAL MEAN					45.3	1994
LOWEST ANNUAL MEAN					14.8	1954
HIGHEST DAILY MEAN	710	Jan 24	609	Feb 23	1,320	Feb 9, 1994
LOWEST DAILY MEAN	0.11	(b)	0.29	(c)	0.00	(d)
ANNUAL SEVEN-DAY MINIMUM	0.12	Sep 8	0.40	Oct 4	0.00	Sep 22, 1953
MAXIMUM PEAK FLOW			1,430	May 9	(f)3,200	Nov 4, 1985
MAXIMUM PEAK STAGE			(a)6.23	May 9	8.34	Nov 4, 1985
INSTANTANEOUS LOW FLOW			0.27	(c)	0.00	(g)
ANNUAL RUNOFF (CFSM)	1.89		2.33		1.93	
ANNUAL RUNOFF (INCHES)	25.68		31.64		26.26	
10 PERCENT EXCEEDS	58		66		63	
50 PERCENT EXCEEDS	13		21		12	
90 PERCENT EXCEEDS	0.37		2.8		1.0	

a From crest stage gage.
b Sept. 10-14.
c Oct. 8, 9.
d Several days in 1951-56, 1964-66, July 19, 1986, and Sept. 11, 12, 1995.
e Estimated.
f From rating curve extended above 1,560 ft^3/s.
g Several days in 1951-56, 1964-66, parts of July 19, 20, 1986, and Sept. 11, 12, 1995.



03053500 BUCKHANNON RIVER AT HALL, WV

LOCATION.--Lat 39°03'04", long 80°06'53", NAD27, Barbour County, Hydrologic Unit 05020001, on right bank 0.2 mi upstream from highway bridge at Hall, 1.0 mi upstream from Pecks Run, and at mile 7.9.

DRAINAGE AREA.--277 mi^2.

PERIOD OF RECORD.--June 1907 to May 1909 (gage heights only), April 1915 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 783: 1918(M).

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,369.15 ft above NGVD of 1929 (from Baltimore & Ohio RR reference mark). June 1907 to May 25, 1909, nonrecording gage at site 0.2 mi downstream at datum 4.12 ft lower. Apr. 15, 1915, to June 8, 1939, nonrecording gage at site 500 ft downstream at present datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect, no gage-height record), which are poor. Some regulation at low flow from mine pumpage above station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 23	1030	*9,430	*13.31	Sep 3	0930	4,580	9.49
May 11	1100	6,560	11.17				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	748	623	523	952	866	485	340	2,680	123	236	534
2	73	578	527	957	862	1,200	1,230	638	2,420	115	181	1,300
3	60	447	468	1,750	803	1,340	1,390	878	1,320	106	157	4,070
4	53	359	399	2,430	1,580	1,170	1,040	653	1,120	79	165	2,860
5	47	308	374	1,600	2,470	1,060	850	589	1,020	98	572	2,230
6	41	558	464	1,170	1,450	1,450	771	768	776	87	460	1,240
7	36	1,240	461	940	1,000	1,750	767	723	1,330	76	278	753
8	33	1,020	383	774	766	1,290	1,240	647	2,490	93	224	507
9	31	709	367	714	559	1,070	1,500	1,110	1,410	174	274	368
10	28	527	334	721	e460	1,010	1,740	3,950	850	528	968	e260
11	40	476	506	707	e430	800	1,660	5,980	586	495	758	e180
12	150	482	1,240	583	e370	662	1,490	3,090	634	360	1,150	e140
13	165	949	1,200	474	e340	610	1,120	1,460	649	296	1,600	e120
14	196	935	1,570	e420	e320	1,320	850	1,000	994	257	876	e100
15	243	690	1,540	e390	421	1,220	671	737	1,010	186	552	e110
16	375	538	1,230	e360	863	995	547	712	882	146	419	e340
17	1,330	986	1,010	e340	1,550	905	456	567	1,060	121	2,260	e230
18	843	1,620	823	e310	1,470	788	403	590	1,500	104	3,150	136
19	496	1,250	764	e290	1,050	649	395	1,030	1,050	234	1,100	1,530
20	442	1,410	1,080	e280	988	533	340	840	1,560	305	608	3,090
21	591	1,150	1,730	e270	1,220	477	346	703	2,010	173	405	1,430
22	474	890	1,230	e260	3,480	410	456	723	1,360	126	294	938
23	353	746	1,030	e250	8,650	345	459	614	878	102	229	907
24	274	619	821	e240	5,770	305	425	2,820	584	103	184	802
25	217	600	999	e240	2,240	277	390	1,780	412	107	148	560
26	203	613	1,270	e230	1,340	267	373	837	308	95	123	469
27	234	816	948	e220	1,000	299	395	565	240	76	108	401
28	228	977	746	223	865	288	382	465	198	211	124	512
29	227	833	607	244	---	258	333	429	172	739	141	688
30	726	699	510	763	---	297	314	861	145	394	130	607
31	922	---	456	1,150	---	394	---	957	---	280	158	---
TOTAL	9,229	23,773	25,710	19,823	43,269	24,305	22,818	37,056	31,648	6,389	18,032	27,412
MEAN	298	792	829	639	1,545	784	761	1,195	1,055	206	582	914
MAX	1,330	1,620	1,730	2,430	8,650	1,750	1,740	5,980	2,680	739	3,150	4,070
MIN	28	308	334	220	320	258	314	340	145	76	108	100
CFSM	1.07	2.86	2.99	2.31	5.58	2.83	2.75	4.32	3.81	0.74	2.10	3.30
IN.	1.24	3.19	3.45	2.66	5.81	3.26	3.06	4.98	4.25	0.86	2.42	3.68

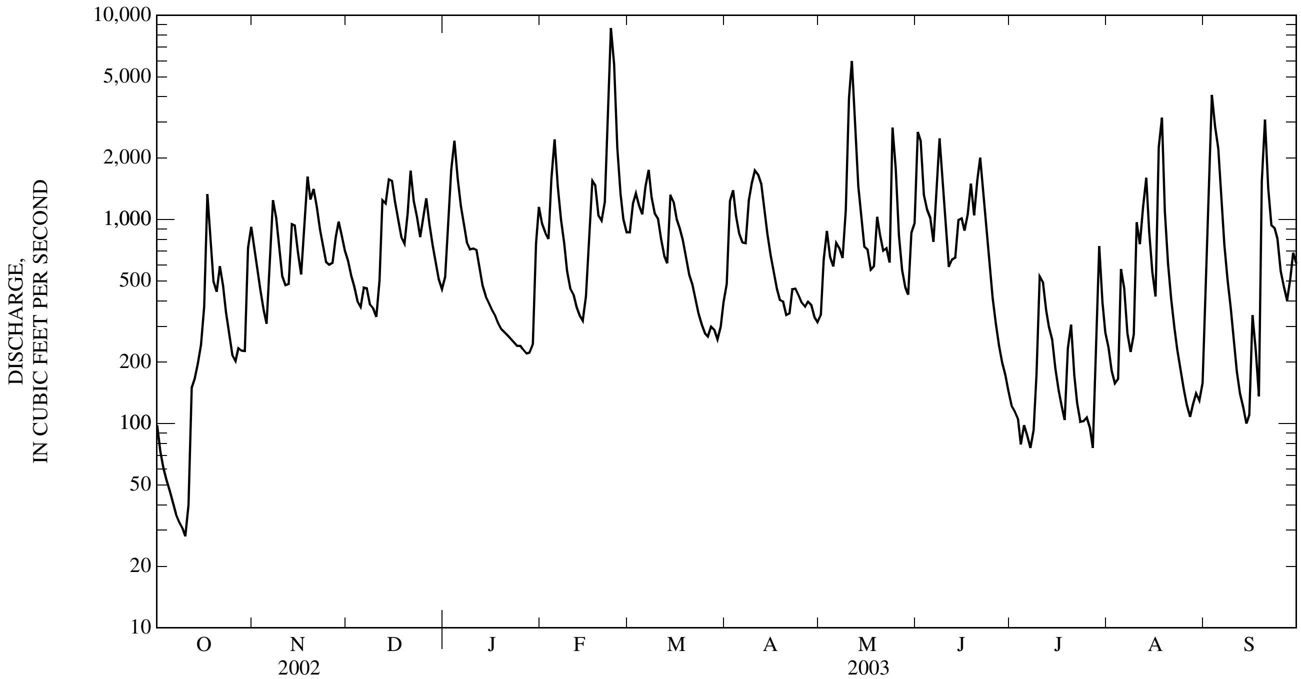
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	252	495	808	921	1,010	1,113	823	667	393	289	263	177
MAX	1,272	2,399	1,942	1,862	1,993	2,474	1,736	2,357	1,435	1,302	976	914
(WY)	(1938)	(1986)	(1973)	(1937)	(1994)	(1917)	(1973)	(1996)	(1950)	(1958)	(1956)	(2003)
MIN	0.29	1.03	67.1	169	217	474	299	117	30.6	15.9	3.56	0.55
(WY)	(1931)	(1931)	(1931)	(1977)	(1978)	(1987)	(1971)	(1964)	(1965)	(1966)	(1930)	(1930)

03053500 BUCKHANNON RIVER AT HALL, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1915 - 2003	
ANNUAL TOTAL	210,702.1		289,464			
ANNUAL MEAN	577		793		600	
HIGHEST ANNUAL MEAN					915	1927
LOWEST ANNUAL MEAN					354	1966
HIGHEST DAILY MEAN	6,140	Mar 21	8,650	Feb 23	14,500	Nov 5, 1985
LOWEST DAILY MEAN	6.0	(a)	28	Oct 10	0.20	(b)
ANNUAL SEVEN-DAY MINIMUM	6.5	Sep 12	37	Oct 5	0.21	Oct 21, 1930
MAXIMUM PEAK FLOW			9,430	Feb 23	(c)15,000	Nov 5, 1985
MAXIMUM PEAK STAGE			13.31	Feb 23	(d)16.88	Nov 5, 1985
INSTANTANEOUS LOW FLOW			27	Oct 10	0.20	(b)
ANNUAL RUNOFF (CFSM)	2.08		2.86		2.17	
ANNUAL RUNOFF (INCHES)	28.30		38.87		29.43	
10 PERCENT EXCEEDS	1,250		1,500		1,400	
50 PERCENT EXCEEDS	343		589		314	
90 PERCENT EXCEEDS	29		141		36	

a Sept. 15, 16.
b Oct. 21-23, 25-27, 29, 1930.
c From rating curve extended above 13,000 ft^3/s on basis of slope-area measurement.
d From floodmarks.
e Estimated.



03054500 TYGART VALLEY RIVER AT PHILIPPI, WV

LOCATION.--Lat 39°09'01", long 80°02'20", NAD27, Barbour County, Hydrologic Unit 05020001, on right bank at Philippi, 0.2 mi downstream from Anglins Run, 5.0 mi downstream from Buckhannon River, and at mile 45.5.

DRAINAGE AREA.--914 mi^2.

PERIOD OF RECORD.--April 1940 to current year. Prior to October 1960, published as Tygart River at Philippi.

REVISED RECORDS.--WDR WV-97-1: Drainage area, 1942(M), 1943-45(P), 1947(P), 1948(M), 1955(M), 1956(P), 1957(M), 1964-65(P), 1969(M), 1986(P), 1989(M), 1990(P), 1992(P), 1993(M), 1994(P).

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,280.55 ft above NGVD of 1929. Prior to May 23, 1940, nonrecording gage at same site and datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect, no gage-height record), which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 25, 1912, reached a stage of 27.3 ft, read on National Weather Service gage 0.2 mi downstream, or about 26 ft, present site and datum, discharge, about 37,000 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 13,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 23	1100	*31,300	*20.73	Sep 3	0600	15,500	13.07
May 11	unknown	23,200	(a)17.29	Sep 19	2400	16,100	13.39
Jun 1	1900	13,900	12.12				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	405	2,820	2,250	1,790	2,650	2,610	1,470	1,120	10,200	382	499	1,120
2	300	2,060	1,950	5,400	2,670	4,080	4,710	2,620	10,400	372	398	3,550
3	250	1,570	1,750	8,260	2,390	5,410	5,730	3,450	4,550	396	352	13,400
4	212	1,220	1,460	8,800	5,870	4,420	3,750	2,610	3,830	323	318	9,060
5	186	999	1,330	5,240	10,400	4,440	2,940	2,460	4,280	295	832	8,040
6	163	2,020	1,470	3,630	5,030	9,860	2,540	3,610	3,040	284	920	3,880
7	139	5,040	1,260	2,830	3,240	9,800	2,700	3,100	3,810	244	613	2,270
8	120	3,750	1,120	2,300	2,400	5,820	7,470	e2,800	8,380	283	431	1,490
9	111	2,530	1,050	2,110	1,720	5,190	6,770	e6,000	4,870	1,000	527	1,110
10	105	1,870	931	2,500	1,580	4,980	7,520	e17,000	3,050	1,880	2,870	822
11	128	1,640	1,180	2,500	1,380	3,450	6,310	e22,000	2,090	1,620	2,110	644
12	285	1,600	3,340	1,940	1,140	2,670	6,120	e12,000	1,960	1,130	4,110	517
13	616	5,660	3,880	1,660	1,060	2,400	4,400	5,280	2,050	929	3,630	428
14	614	4,570	5,220	1,480	834	6,620	3,190	3,820	3,090	744	2,170	381
15	790	2,770	5,400	1,240	1,070	5,740	2,440	2,830	3,310	589	1,340	386
16	1,030	2,030	4,170	836	1,460	3,990	1,940	2,520	3,010	1,220	1,120	660
17	4,660	3,140	3,420	e740	2,460	3,540	1,600	2,020	3,200	712	5,200	685
18	3,110	5,920	2,750	e680	2,730	3,080	1,360	1,940	5,090	455	7,330	512
19	1,740	4,460	2,590	e630	1,960	2,540	1,280	3,620	3,490	521	2,710	8,270
20	1,370	4,930	4,130	e600	1,870	2,080	1,140	3,260	4,090	743	1,520	14,600
21	1,730	4,100	7,670	e560	2,250	1,960	1,080	2,560	6,350	512	1,040	5,910
22	1,430	3,140	4,620	e530	9,550	1,790	1,320	2,460	4,170	368	748	3,390
23	1,020	2,630	3,620	e500	28,900	1,490	1,400	2,170	2,800	308	579	2,750
24	756	2,190	2,870	472	21,500	1,300	1,370	5,680	1,900	268	471	2,430
25	607	2,120	3,140	e450	8,220	1,130	1,300	3,710	1,340	264	383	1,720
26	547	2,190	4,090	e430	4,510	1,040	1,250	2,140	998	244	328	1,410
27	683	2,720	3,100	e420	3,360	1,070	1,300	1,550	769	181	288	1,220
28	768	3,390	2,450	e400	2,810	996	1,290	1,340	633	269	258	1,530
29	739	2,860	2,000	535	---	889	1,180	1,290	557	1,590	336	1,990
30	3,560	2,430	1,690	1,430	---	987	1,090	1,970	458	1,030	391	1,740
31	4,450	---	1,530	2,390	---	1,260	---	2,350	---	625	465	---
TOTAL	32,624	88,369	87,431	63,283	135,014	106,632	87,960	131,280	107,765	19,781	44,287	95,915
MEAN	1,052	2,946	2,820	2,041	4,822	3,440	2,932	4,235	3,592	638	1,429	3,197
MAX	4,660	5,920	7,670	8,800	28,900	9,860	7,520	22,000	10,400	1,880	7,330	14,600
MIN	105	999	931	400	834	889	1,080	1,120	458	181	258	381
CFSM	1.15	3.22	3.09	2.23	5.28	3.76	3.21	4.63	3.93	0.70	1.56	3.50
IN.	1.33	3.60	3.56	2.58	5.50	4.34	3.58	5.34	4.39	0.81	1.80	3.90

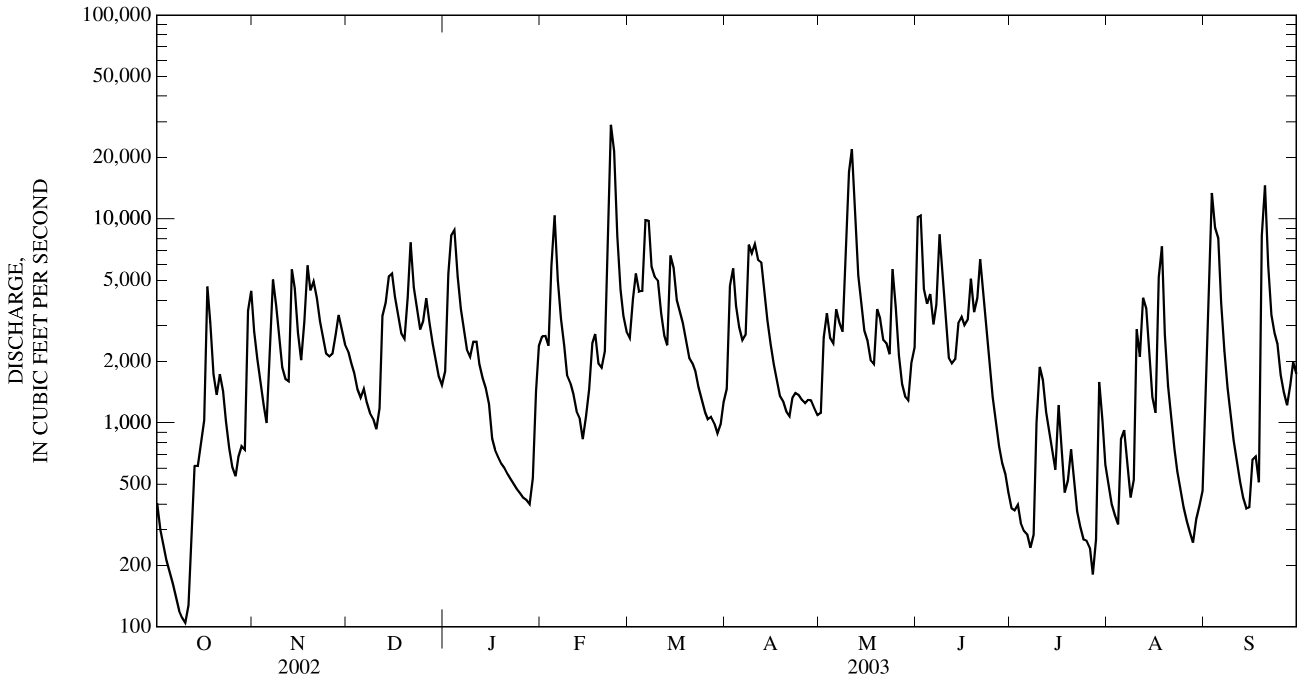
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	692	1,560	2,528	2,836	3,193	3,582	2,800	2,234	1,276	922	824	561
MAX	3,391	7,341	6,172	5,864	6,460	8,024	5,378	8,818	4,224	3,753	3,779	3,197
(WY)	(1980)	(1986)	(1973)	(1994)	(1994)	(1963)	(2002)	(1996)	(1981)	(1958)	(1942)	(2003)
MIN	5.88	11.4	273	563	587	1,531	1,090	483	114	60.3	30.9	16.4
(WY)	(1954)	(1954)	(1966)	(1977)	(1978)	(1987)	(1971)	(1991)	(1965)	(1999)	(1993)	(1946)

03054500 TYGART VALLEY RIVER AT PHILIPPI, WV--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	755,507		1,000,341			
ANNUAL MEAN	2,070		2,741		1,908	
HIGHEST ANNUAL MEAN					3,136	1996
LOWEST ANNUAL MEAN					1,105	1966
HIGHEST DAILY MEAN	23,300	Mar 21	28,900	Feb 23	50,900	Nov 5, 1985
LOWEST DAILY MEAN	16	(b)	105	Oct 10	4.9	(c)
ANNUAL SEVEN-DAY MINIMUM	19	Sep 12	136	Oct 5	5.2	Oct 9, 1953
MAXIMUM PEAK FLOW			31,300	Feb 23	(d)61,000	Nov 5, 1985
MAXIMUM PEAK STAGE			20.73	Feb 23	(f)31.83	Nov 5, 1985
INSTANTANEOUS LOW FLOW			100	Oct 10	4.9	(g)
ANNUAL RUNOFF (CFSM)	2.26		3.00		2.09	
ANNUAL RUNOFF (INCHES)	30.75		40.71		28.36	
10 PERCENT EXCEEDS	4,590		5,700		4,500	
50 PERCENT EXCEEDS	1,120		1,950		1,030	
90 PERCENT EXCEEDS	111		397		113	

a From float tape indicator.
b Sept. 14, 15.
c Oct. 10, 11, 1953.
d From rating curve extended above 41,000 ft^3/s on basis of slope-area measurement of peak flow.
e Estimated.
f From floodmarks.
g Oct. 10-12, 21, 1953.



03056250 THREE FORK CREEK NEAR GRAFTON, WV

LOCATION.--Lat 39°20'11", long 79°59'37", NAD27, Taylor County, Hydrologic Unit 05020001, on right bank 20 ft downstream from bridge on State Secondary Route 50/9, 1.4 mi east of Grafton, and at mile 1.8.

DRAINAGE AREA.--96.8 mi^2.

PERIOD OF RECORD.--October 1984 to current year.

REVISED RECORDS.--WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Elevation of gage is approximately 1,000 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect, no gage-height record), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 23	0800	*5,120	*13.02	Jun 15	0900	3,790	11.33
May 11	0100	2,590	9.62				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.5	117	112	425	123	197	131	115	1,490	31	102	166
2	6.4	80	95	753	133	279	304	89	541	29	79	1,370
3	5.4	60	89	976	135	309	233	72	415	25	59	748
4	4.9	49	62	714	842	292	183	92	800	23	60	421
5	5.1	44	73	421	665	455	295	315	442	35	48	309
6	5.9	279	78	310	356	1,550	318	443	270	55	39	193
7	6.6	252	59	237	267	909	510	260	604	105	33	129
8	5.5	149	66	208	190	685	723	234	591	561	33	94
9	4.5	103	54	226	151	1,000	464	477	320	992	131	71
10	4.5	80	57	329	e120	613	349	1,310	204	1,160	302	57
11	21	111	97	259	e100	383	330	1,490	140	914	149	47
12	72	137	226	195	e84	297	318	546	112	415	106	42
13	36	166	316	159	74	371	257	353	204	529	e80	38
14	23	131	1,100	e126	e60	592	201	236	777	264	e56	35
15	18	100	679	e105	e63	395	164	178	2,180	157	e46	34
16	39	80	463	87	78	336	139	161	744	113	e48	44
17	117	387	340	e80	98	280	120	133	438	80	e44	34
18	58	462	259	e76	146	218	102	122	386	61	e32	28
19	39	337	237	e72	119	168	89	102	288	55	e27	298
20	45	386	857	e68	95	142	77	85	316	45	e21	284
21	55	250	605	e66	109	130	79	150	262	38	e19	164
22	39	181	356	e63	971	111	80	141	216	36	18	118
23	29	143	265	e61	3,210	95	68	119	148	39	18	326
24	23	118	204	e60	934	84	60	385	106	47	16	205
25	20	125	514	e58	492	76	56	246	78	37	14	137
26	23	123	520	e57	345	75	55	163	63	28	14	124
27	30	133	325	e56	271	82	53	125	53	24	22	111
28	26	127	242	e55	223	72	46	142	47	309	136	337
29	33	121	187	e64	---	70	44	121	41	313	75	318
30	215	121	151	e89	---	88	46	101	35	122	197	223
31	175	---	151	110	---	97	---	186	---	74	182	---
TOTAL	1,193.3	4,952	8,839	6,565	10,454	10,451	5,894	8,692	12,311	6,716	2,206	6,505
MEAN	38.5	165	285	212	373	337	196	280	410	217	71.2	217
MAX	215	462	1,100	976	3,210	1,550	723	1,490	2,180	1,160	302	1,370
MIN	4.5	44	54	55	60	70	44	72	35	23	14	28
CFSM	0.40	1.71	2.95	2.19	3.86	3.48	2.03	2.90	4.24	2.24	0.74	2.24
IN.	0.46	1.90	3.40	2.52	4.02	4.02	2.27	3.34	4.73	2.58	0.85	2.50

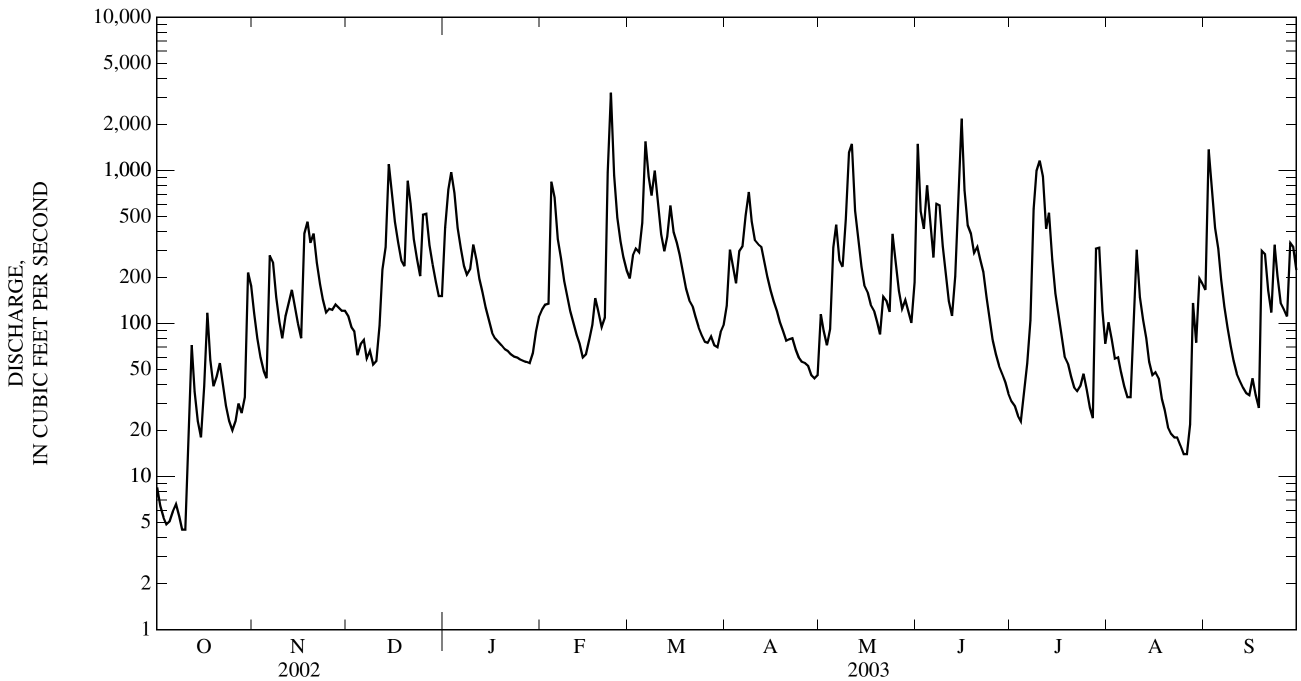
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	51.0	175	230	273	322	334	245	203	126	94.4	45.6	45.7
MAX	237	654	578	549	643	598	398	598	500	235	171	217
(WY)	(1997)	(1986)	(1991)	(1996)	(1986)	(1994)	(2000)	(1996)	(1998)	(2000)	(1994)	(2003)
MIN	4.49	12.4	31.7	63.3	121	80.2	84.5	44.0	7.07	3.85	1.56	0.90
(WY)	(1992)	(1999)	(1999)	(2000)	(2002)	(1987)	(1995)	(1999)	(1991)	(1991)	(1999)	(1999)

03056250 THREE FORK CREEK NEAR GRAFTON, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1985 - 2003	
ANNUAL TOTAL	57,339.3		84,778.3			
ANNUAL MEAN	157		232		178	
HIGHEST ANNUAL MEAN					272	1996
LOWEST ANNUAL MEAN					112	1988
HIGHEST DAILY MEAN	1,820	Apr 28	3,210	Feb 23	5,200	Nov 5, 1985
LOWEST DAILY MEAN	1.0	Sep 14	4.5	(a)	0.49	(b)
ANNUAL SEVEN-DAY MINIMUM	1.1	Sep 10	5.3	Oct 4	0.55	Aug 13, 1988
MAXIMUM PEAK FLOW			5,120	Feb 23	(c)12,000	Nov 5, 1985
MAXIMUM PEAK STAGE			13.02	Feb 23	(d)20.13	Nov 5, 1985
INSTANTANEOUS LOW FLOW			4.1	Oct 10	0.44	Aug 18, 1988
ANNUAL RUNOFF (CFSM)	1.62		2.40		1.84	
ANNUAL RUNOFF (INCHES)	22.04		32.58		24.98	
10 PERCENT EXCEEDS	385		534		419	
50 PERCENT EXCEEDS	80		123		85	
90 PERCENT EXCEEDS	5.1		33		7.6	

a Oct. 9, 10.
b Aug. 16, 18, 1988.
c From rating curve extended above 10,000 ft^3/s on basis of slope-area measurement of peak flow.
d From floodmarks.
e Estimated.



03058975 WEST FORK RIVER NEAR MOUNT CLARE, WV

LOCATION.--Lat 39°14'19", long 80°21'33", NAD27, Harrison County, Hydrologic Unit 05020002, on right bank 4 miles south of Clarksburg and 2 mi north of Mount Clare, 0.3 mi off County Route 25 on County Route 34, and at mile 38.2.

DRAINAGE AREA.--368 mi^2.

PERIOD OF RECORD.--April 1987 to current year.

REVISED RECORDS.--WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 931.04 ft above NGVD of 1929.

REMARKS.--No estimated daily discharges. Flow partially regulated since 1973 by Stonecoal Reservoir. Flow regulated since January 1990 by Stonewall Jackson Lake.

PEAK DISCHARGES FOR CURRENT YEAR.--Maximum discharge, 10,300 ft^3/s, Feb. 23, gage height, 17.45 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	112	432	353	608	850	1,610	417	225	1,960	231	496	286
2	104	306	320	1,310	971	2,340	478	215	1,360	291	462	481
3	97	253	301	1,390	952	2,330	404	188	1,070	175	651	1,240
4	92	227	281	2,130	1,050	2,020	330	200	1,280	131	689	1,600
5	92	221	255	1,500	1,140	2,300	351	309	937	133	487	1,660
6	92	614	234	1,290	908	3,530	396	748	741	125	378	1,090
7	92	774	219	1,260	831	2,780	425	594	1,600	1,160	273	976
8	89	574	202	1,060	748	1,930	950	508	2,500	604	219	849
9	85	451	215	981	669	1,730	958	898	1,150	551	201	709
10	102	387	242	827	518	1,080	1,100	3,430	972	700	391	489
11	329	510	282	733	491	675	1,130	6,300	866	2,170	258	283
12	622	748	964	655	414	505	1,240	2,310	796	704	236	201
13	322	620	1,090	597	352	416	932	1,550	698	764	211	173
14	210	547	2,180	504	348	473	740	1,560	776	494	170	165
15	168	483	2,100	375	347	455	623	1,430	851	277	153	160
16	385	430	1,490	268	510	387	543	1,440	650	202	255	165
17	909	842	1,130	240	1,390	339	440	1,410	1,390	164	541	181
18	446	1,380	977	231	2,010	302	337	1,360	2,700	145	748	207
19	270	937	896	223	1,110	269	389	1,730	1,440	516	586	367
20	214	1,110	878	213	1,120	241	323	1,160	3,060	363	548	619
21	259	913	1,100	205	1,450	234	310	1,050	4,030	193	538	410
22	242	761	887	189	3,020	209	407	1,000	2,100	157	519	367
23	186	714	793	190	8,990	185	351	907	1,440	253	499	635
24	162	695	710	185	4,370	171	396	1,310	1,160	324	476	536
25	149	684	873	182	1,880	159	401	1,090	1,050	237	389	423
26	149	550	1,440	178	1,730	161	338	959	974	156	269	395
27	174	441	1,100	176	1,730	208	313	851	763	128	189	379
28	182	417	942	176	1,620	188	282	618	515	132	214	854
29	185	402	867	173	---	175	265	450	413	1,190	218	792
30	715	372	777	376	---	238	218	563	323	624	200	648
31	674	---	645	638	---	347	---	640	---	351	250	---
TOTAL	7,909	17,795	24,743	19,063	41,519	27,987	15,787	37,003	39,565	13,645	11,714	17,340
MEAN	255	593	798	615	1,483	903	526	1,194	1,319	440	378	578
MAX	909	1,380	2,180	2,130	8,990	3,530	1,240	6,300	4,030	2,170	748	1,660
MIN	85	221	202	173	347	159	218	188	323	125	153	160

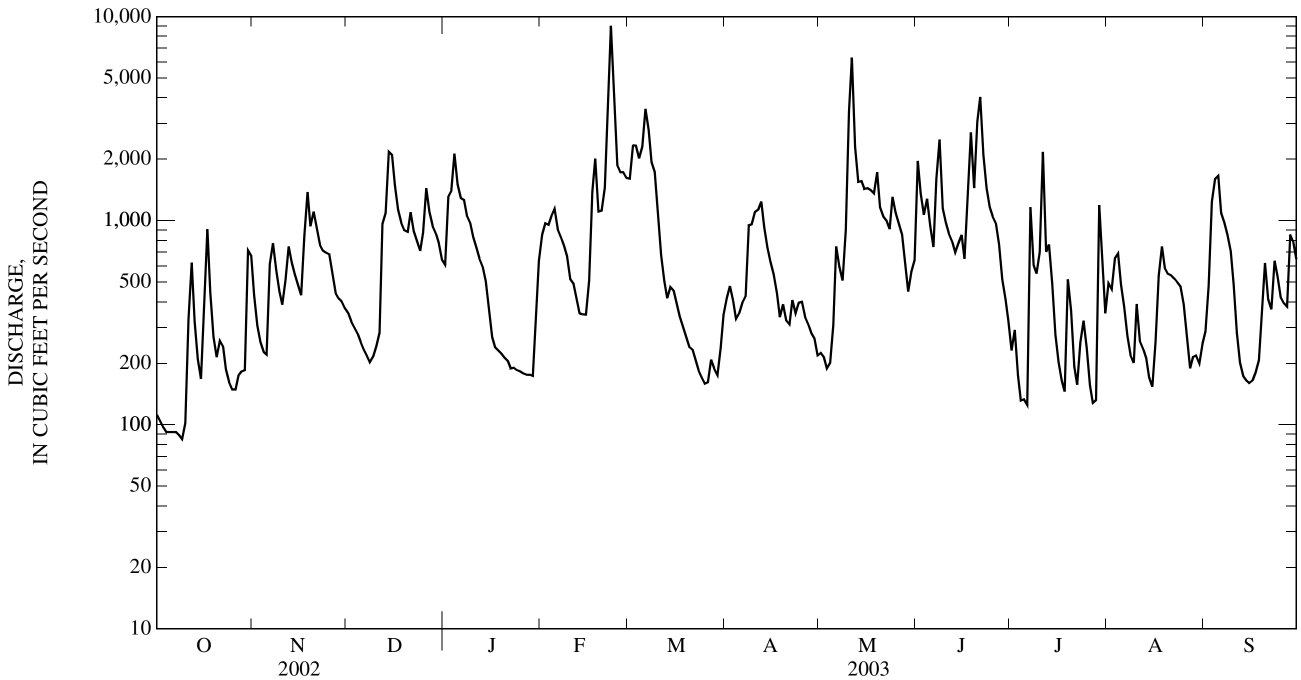
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	198	349	608	854	1,044	1,131	695	713	464	265	262	215
MAX	758	815	1,442	1,814	2,172	1,987	1,186	2,359	1,319	477	623	578
(WY)	(1990)	(1990)	(1991)	(1994)	(1994)	(1994)	(1994)	(1996)	(2003)	(1996)	(1994)	(2003)
MIN	48.2	91.5	135	120	282	417	222	124	90.3	32.8	46.5	59.5
(WY)	(1989)	(1995)	(1999)	(2000)	(2002)	(1990)	(1999)	(1987)	(1999)	(1988)	(1988)	(1988)

03058975 WEST FORK RIVER NEAR MOUNT CLARE, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1987 - 2003	
ANNUAL TOTAL	192,594		274,070			
ANNUAL MEAN	528		751		573	
HIGHEST ANNUAL MEAN					877	1994
LOWEST ANNUAL MEAN					338	1988
HIGHEST DAILY MEAN	4,490	Mar 21	8,990	Feb 23	9,780	Feb 9, 1994
LOWEST DAILY MEAN	83	Aug 5	85	Oct 9	7.4	Oct 2, 1988
ANNUAL SEVEN-DAY MINIMUM	90	Jan 2	91	Oct 3	12	Aug 9, 1987
MAXIMUM PEAK FLOW			10,300	Feb 23	11,600	Feb 9, 1994
MAXIMUM PEAK STAGE			17.45	Feb 23	19.08	Feb 9, 1994
INSTANTANEOUS LOW FLOW			85	(a)	6.6	Oct 2, 1988
10 PERCENT EXCEEDS	1,210		1,520		1,320	
50 PERCENT EXCEEDS	259		505		281	
90 PERCENT EXCEEDS	105		176		97	

a Oct. 8, 9.



03061000 WEST FORK RIVER AT ENTERPRISE, WV

LOCATION.--Lat 39°25'20", long 80°16'34", NAD 27, Harrison County, Hydrologic Unit 05020002, on left bank 150 ft downstream from old highway bridge and 0.3 mi above new highway bridge at Enterprise, 0.8 mi upstream from Bingamon Creek, and at mile 12.1.

DRAINAGE AREA.--759 mi^2.

PERIOD OF RECORD.--June 1907 to September 1916, October 1916 to September 1918 (gage heights only), October 1932 to September 1983, October 1983 to September 1984 (gage heights, discharge measurements, and annual maximum discharge only), October 1984 to current year.

REVISED RECORDS.--WSP 803: 1936. WSP 823: Drainage area. WSP 1113: 1936-38(M), 1939. WSP 1335: 1911-15, 1937. WSP 1625: 1915(M), 1935(M). WDR WV-97-1: 1888(M).

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 869.45 ft above NGVD of 1929, adjustment of 1912. June 1907 to Sept. 30, 1918, nonrecording gage at site 150 ft upstream at same datum.

REMARKS.--Records fair except those for period of estimated daily discharges (ice effect), which are poor. Flow partially regulated since 1973 by Stonecoal Reservoir. Flow regulated since January 1990 by Stonewall Jackson Lake.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1888 reached a stage of about 33 ft, estimated discharge, 48,000 ft^3/s, present site and datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 24,500 ft^3/s, Feb. 23, gage height, 21.69 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	184	710	606	1,030	1,230	2,450	775	685	3,220	458	1,550	557
2	156	507	554	1,800	1,420	3,790	897	509	2,440	440	987	2,440
3	133	391	501	2,420	1,610	4,180	845	411	2,060	422	1,030	3,220
4	118	331	457	3,330	2,670	3,490	704	389	4,300	333	1,320	2,460
5	114	314	426	3,020	2,650	4,590	851	846	2,110	289	850	2,770
6	118	1,010	415	2,390	1,780	9,680	982	1,710	1,360	264	644	1,440
7	116	1,270	371	2,230	1,460	6,590	1,030	1,130	3,370	1,950	488	1,170
8	113	852	352	1,890	1,250	4,590	2,150	923	5,660	1,430	433	983
9	112	625	357	1,740	1,060	5,160	1,950	898	2,340	3,030	401	816
10	109	505	386	1,670	983	3,080	2,270	5,070	1,580	2,550	737	620
11	195	585	442	1,410	881	1,860	2,130	11,800	1,270	9,050	507	430
12	665	972	968	1,190	787	1,450	2,600	4,540	1,090	2,170	428	332
13	610	834	1,430	985	619	1,350	1,840	2,510	1,340	2,660	385	282
14	366	699	2,390	918	624	1,590	1,380	2,220	1,860	1,430	307	277
15	268	565	3,410	781	669	1,320	1,120	1,890	2,700	804	269	290
16	470	488	2,980	636	1,280	1,120	958	2,590	1,530	587	773	315
17	1,730	1,050	2,120	611	2,850	979	822	2,200	2,110	466	779	318
18	850	e2,000	1,630	584	2,350	868	691	2,030	5,560	397	1,010	334
19	471	e1,560	1,390	520	1,570	767	673	2,460	2,740	1,060	655	568
20	371	e1,300	1,430	495	1,540	689	609	1,760	6,230	843	603	1,130
21	409	e1,500	1,820	474	2,030	659	595	1,660	8,660	476	568	678
22	410	e1,220	1,690	446	4,670	609	753	1,590	4,110	386	543	559
23	299	1,060	1,390	429	20,700	537	669	1,480	2,460	455	522	895
24	247	961	1,180	413	12,400	490	587	4,050	1,830	639	485	929
25	229	939	1,310	376	4,010	455	605	2,390	1,510	521	432	642
26	236	836	1,990	370	3,080	447	560	1,560	1,320	357	340	587
27	245	717	2,190	360	2,760	519	505	1,260	1,080	286	325	557
28	256	677	1,850	343	2,520	487	457	1,040	822	407	422	1,190
29	297	665	1,530	349	---	449	412	831	645	2,040	374	1,400
30	1,330	629	1,290	475	---	533	412	781	578	1,170	394	1,160
31	1,180	---	1,080	959	---	671	---	903	---	715	566	---
TOTAL	12,407	25,772	39,935	34,644	81,453	65,449	30,832	64,116	77,885	38,085	19,127	29,349
MEAN	400	859	1,288	1,118	2,909	2,111	1,028	2,068	2,596	1,229	617	978
MAX	1,730	2,000	3,410	3,330	20,700	9,680	2,600	11,800	8,660	9,050	1,550	3,220
MIN	109	314	352	343	619	447	412	389	578	264	269	277

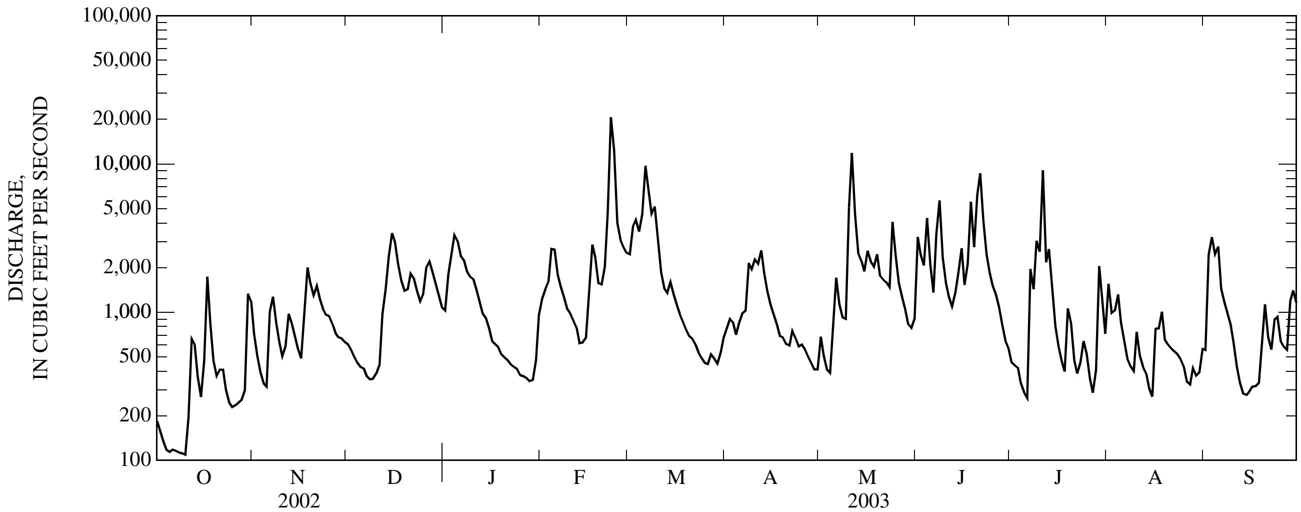
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2003, BY WATER YEAR (WY) [REGULATED, UNADJUSTED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	458	965	1,500	1,761	2,070	2,184	1,562	1,409	930	534	475	366
MAX	1,762	5,040	4,494	4,085	4,455	4,453	3,181	4,999	3,796	1,499	1,773	1,071
(WY)	(1977)	(1986)	(1979)	(1994)	(1994)	(1994)	(1973)	(1996)	(1981)	(1996)	(1980)	(1979)
MIN	63.9	157	209	273	480	497	488	250	170	75.5	69.5	77.0
(WY)	(1989)	(1999)	(1999)	(2000)	(1978)	(1987)	(1995)	(1982)	(1977)	(1988)	(1988)	(1983)

03061000 WEST FORK RIVER AT ENTERPRISE, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1973 - 2003	
ANNUAL TOTAL	333,339		519,054			
ANNUAL MEAN	913		1,422		1,180	
HIGHEST ANNUAL MEAN					1,853	1994
LOWEST ANNUAL MEAN					583	1988
HIGHEST DAILY MEAN	11,100	Mar 21	20,700	Feb 23	37,900	Nov 5, 1985
LOWEST DAILY MEAN	98	(a)	109	Oct 10	14	Oct 18, 1988
ANNUAL SEVEN-DAY MINIMUM	106	Sep 8	114	Oct 4	20	Oct 12, 1988
MAXIMUM PEAK FLOW			24,500	Feb 23	(b)41,100	Nov 5, 1985
MAXIMUM PEAK STAGE			21.69	Feb 23	30.37	Nov 5, 1985
INSTANTANEOUS LOW FLOW			109	(c)	12	Oct 18, 1988
10 PERCENT EXCEEDS	2,130		2,750		2,740	
50 PERCENT EXCEEDS	471		881		572	
90 PERCENT EXCEEDS	146		342		136	

a Sept. 11, 12.
b From rating curve extended above 36,400 ft^3/s.
c Oct. 9, 10.
e Estimated.



STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1907-1916, 1933-1972, BY WATER YEAR (WY) [UNREGULATED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	389	668	1,453	2,071	2,177	2,279	1,637	1,130	670	443	465	385
MAX	2,356	2,612	3,594	6,011	4,202	5,727	3,795	3,417	2,293	2,648	2,142	2,973
(WY)	(1938)	(1914)	(1943)	(1937)	(1916)	(1963)	(1940)	(1967)	(1950)	(1958)	(1956)	(1945)
MIN	20.3	20.0	34.1	310	332	426	138	147	30.7	57.0	25.4	19.8
(WY)	(1939)	(1909)	(1909)	(1967)	(1954)	(1910)	(1910)	(1939)	(1936)	(1911)	(1910)	(1908)

SUMMARY STATISTICS	WATER YEARS 1907-1916, 1933-1972	
ANNUAL MEAN	1,136	
HIGHEST ANNUAL MEAN	1,879	1945
LOWEST ANNUAL MEAN	548	1954
HIGHEST DAILY MEAN	33,300	Mar 7, 1967
LOWEST DAILY MEAN	4.0	Jul 26, 1934
ANNUAL SEVEN-DAY MINIMUM	6.4	Oct 16, 1939
INSTANTANEOUS PEAK FLOW	(*)36,500	Mar 7, 1967
INSTANTANEOUS PEAK STAGE	28.05	Mar 7, 1967
INSTANTANEOUS LOW FLOW	3.4	Jul 27, 1934
10 PERCENT EXCEEDS	2,800	
50 PERCENT EXCEEDS	440	
90 PERCENT EXCEEDS	55	

* From rating curve extended above 21,000 ft^3/s on basis of slope-area measurement at gage height 27.84 ft.

03061500 BUFFALO CREEK AT BARRACKVILLE, WV

LOCATION.--Lat 39°30'20", long 80°10'05", NAD27, Marion County, Hydrologic Unit 05020003, on right downstream concrete and steel beam retaining wall 50 ft above highway bridge at Barrackville, 300 ft upstream from Finchs Run, and at mile 4.4.

DRAINAGE AREA.--116 mi^2.

PERIOD OF RECORD.--June 1907 to December 1908, May 1915 to June 1924, August 1932 to current year.

REVISED RECORDS.--WSP 783: 1917(M). WSP 1335: 1916(M), 1918-20(M), 1921, 1922(M), 1924(M), 1933(M), 1940. WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 882.42 ft above NGVD of 1929. Prior to Oct. 1, 2000, water-stage recorder at site 0.2 mi upstream at same datum. Prior to Dec. 6, 1940, nonrecording gage 0.2 mi upstream. Prior to June 4, 1943, at datum 1.98 ft higher. Datums published in error, Oct. 1985 to Sept. 1990.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor. Flow from 5.20 mi^2 is partially controlled, but not diverted, by three floodwater-detention reservoirs. Some additional regulation at low flow from mine pumpage above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1912 reached a stage of about 18 ft, present site and datum, discharge, 11,600 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 23	1000	*4,220	*11.26	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	57	42	458	50	209	70	67	111	36	66	47
2	8.1	40	39	827	56	308	69	56	86	33	55	561
3	6.7	29	38	599	70	406	65	48	564	29	81	427
4	6.6	26	37	638	861	356	64	47	1,430	25	305	200
5	8.9	27	35	366	588	680	114	231	496	26	108	108
6	8.5	93	41	264	310	1,280	193	412	272	25	63	68
7	6.3	105	40	193	230	751	234	238	1,030	22	45	48
8	4.9	71	32	168	158	804	563	194	686	35	273	37
9	5.0	50	e28	183	e120	1,320	360	675	338	62	173	31
10	8.3	39	29	194	e100	676	269	1,080	213	90	100	27
11	21	56	42	166	e80	413	270	1,030	142	217	75	25
12	46	84	168	125	e65	339	312	475	105	101	133	22
13	27	64	245	e105	e54	451	249	344	176	79	66	18
14	15	48	934	e92	e45	621	186	243	249	57	43	16
15	11	39	603	85	e40	388	149	171	412	43	31	16
16	47	34	357	e76	51	327	125	396	236	40	25	18
17	152	161	231	e70	103	261	106	340	260	44	26	17
18	59	211	161	e64	133	199	93	253	530	33	22	17
19	37	132	125	e58	106	151	84	184	308	30	18	40
20	28	190	224	54	84	127	73	139	355	27	16	81
21	24	123	284	50	96	115	85	355	619	24	14	47
22	19	89	190	e46	449	102	112	296	279	22	15	38
23	17	76	141	43	2,790	88	96	654	162	24	13	78
24	18	65	106	41	873	80	81	1,420	106	26	11	68
25	17	59	284	40	478	73	74	486	79	26	9.8	49
26	21	54	376	39	348	73	71	292	65	20	9.2	52
27	24	52	241	38	283	72	65	198	57	16	108	48
28	25	46	173	38	233	63	55	165	50	48	503	58
29	34	40	135	41	---	61	53	127	44	75	110	60
30	145	40	108	e43	---	70	55	102	39	42	81	49
31	92	---	98	e46	---	71	---	92	---	41	64	---
TOTAL	952.3	2,200	5,587	5,250	8,854	10,935	4,395	10,810	9,499	1,418	2,662.0	2,371
MEAN	30.7	73.3	180	169	316	353	146	349	317	45.7	85.9	79.0
MAX	152	211	934	827	2,790	1,320	563	1,420	1,430	217	503	561
MIN	4.9	26	28	38	40	61	53	47	39	16	9.2	16
CFSM	0.26	0.63	1.55	1.46	2.73	3.04	1.26	3.01	2.73	0.39	0.74	0.68
IN.	0.31	0.71	1.79	1.68	2.84	3.51	1.41	3.47	3.05	0.45	0.85	0.76

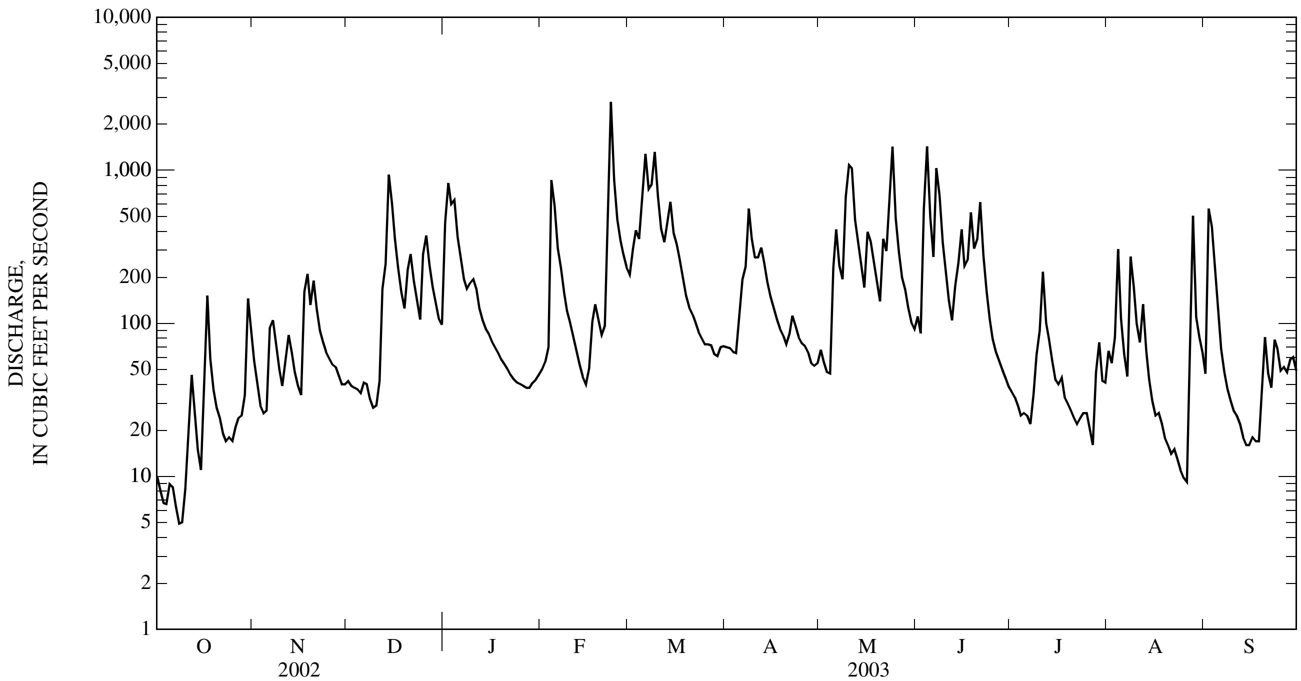
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1907 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	45.8	107	212	278	302	355	251	198	112	66.6	56.9	46.1
MAX	262	530	696	944	690	795	658	543	476	381	357	285
(WY)	(1990)	(1986)	(1991)	(1937)	(1994)	(1963)	(1948)	(1968)	(1981)	(1978)	(1980)	(1990)
MIN	0.000	0.000	9.53	25.2	32.8	71.9	53.3	17.8	6.69	2.44	2.24	0.013
(WY)	(1909)	(1909)	(1999)	(1967)	(1934)	(1969)	(1971)	(1934)	(1936)	(1966)	(1938)	(1908)

03061500 BUFFALO CREEK AT BARRACKVILLE, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1907 - 2003	
ANNUAL TOTAL	50,119.5		64,933.3			
ANNUAL MEAN	137		178		168	
HIGHEST ANNUAL MEAN					280	1994
LOWEST ANNUAL MEAN					80.3	1969
HIGHEST DAILY MEAN	1,880	(a)	2,790	Feb 23	5,710	Apr 12, 1948
LOWEST DAILY MEAN	3.0	Sep 12	4.9	Oct 8	0.00	(b)
ANNUAL SEVEN-DAY MINIMUM	3.2	Sep 6	6.7	Oct 3	0.00	Sep 4, 1908
MAXIMUM PEAK FLOW			4,220	Feb 23	10,400	Feb 19, 2000
MAXIMUM PEAK STAGE			11.26	Feb 23	(c)16.76	Feb 19, 2000
INSTANTANEOUS LOW FLOW			4.6	(d)	0.00	(f)
ANNUAL RUNOFF (CFSM)	1.18		1.53		1.45	
ANNUAL RUNOFF (INCHES)	16.07		20.82		19.68	
10 PERCENT EXCEEDS	351		450		401	
50 PERCENT EXCEEDS	57		78		59	
90 PERCENT EXCEEDS	8.1		22		5.4	

a Mar. 20, Apr. 28.
b Aug. 13-17, Sept. 4-28, Sept. 30 to Dec. 6, 1908.
c From floodmarks.
d Oct. 8, 9.
e Estimated.
f Greater part of period August to December 1908.



03062500 DECKERS CREEK AT MORGANTOWN, WV

LOCATION.--Lat 39°37'45", long 79°57'10", NAD27, Monongalia County, Hydrologic Unit 05020003, on left bank at Kingwood Street, in Morgantown, 0.6 mi. upstream from mouth.

DRAINAGE AREA.--63.2 mi^2.

PERIOD OF RECORD.--April 1914 to September 1915 (gage heights only), February 1946 to September 1969, October 2002 to September 2003.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 820 ft above NGVD of 1929, from topographic map. Prior to Dec. 4, 1914, nonrecording gage on bridge 0.5 mile upstream at different datum. Dec. 4, 1914, to Sept. 30, 1915, nonrecording gage on bridge 0.9 mile upstream at different datum. Feb. 8 to May 7, 1946, nonrecording gage, and May 8, 1946, to June 19, 1956, water-stage recorder at site 150 ft downstream at present datum.

REMARKS.--Records good except those for periods of estimated daily discharges (no gage-height record, ice effect), which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 18, 1980, reached a stage of 12.36 ft, from floodmarks, discharge 7,550 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 23	0530	1,740	4.91	Jul 12	1800	1,090	3.79
Mar 6	1200	1,320	4.22	Jul 31	1830	1,280	4.15
Mar 9	1430	1,370	4.30	Aug 7	1830	1,010	3.63
May 9	1430	1,140	3.88	Aug 27	1930	3,530	7.53
Jun 3	1930	1,180	3.97	Sep 1	2100	4,030	8.20
Jul 8	1000	*4,140	*8.35				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e4.2	79	69	279	85	259	77	88	798	23	265	760
2	e3.8	56	62	448	56	290	141	62	536	23	111	2,340
3	e3.4	39	e40	504	61	318	131	52	640	19	57	1,350
4	e3.2	28	e32	407	332	302	112	79	696	36	33	747
5	e3.4	27	83	289	333	605	167	201	428	54	18	500
6	e3.8	117	57	223	226	1,220	167	258	284	64	12	318
7	e4.1	170	45	170	175	1,080	258	178	385	79	102	214
8	e3.5	115	39	148	134	915	395	217	364	1,220	46	149
9	e3.0	78	e35	149	111	1,280	288	578	255	742	28	104
10	e2.8	60	e37	170	93	1,020	219	778	182	712	172	75
11	16	92	41	143	82	664	198	607	134	722	54	54
12	30	90	78	118	70	506	182	429	106	597	71	37
13	14	99	145	103	63	596	151	318	119	492	53	34
14	8.1	84	459	86	64	929	124	233	216	294	e40	33
15	6.0	66	366	75	56	735	103	176	497	194	e25	50
16	17	59	269	e67	87	654	88	182	460	165	e28	54
17	40	209	200	e62	213	557	76	129	298	118	e23	36
18	29	243	156	e58	227	420	65	105	248	70	e19	34
19	13	205	147	e54	177	297	57	79	189	49	e15	313
20	11	232	502	e51	183	221	50	67	154	27	e13	221
21	11	175	468	e48	214	177	54	89	130	16	e12	141
22	9.4	135	311	e46	572	133	51	80	115	16	e11	118
23	6.9	110	221	e44	1,320	103	44	77	90	52	e10	205
24	6.0	87	165	e42	797	84	37	110	72	95	e9.5	161
25	6.3	82	243	e40	570	67	34	84	60	32	e9.0	132
26	11	78	227	e39	431	64	33	70	47	13	e8.2	119
27	9.8	80	168	e38	358	60	30	59	41	8.0	1,300	105
28	8.4	72	134	e37	310	51	27	64	35	15	1,190	142
29	11	63	110	e40	---	51	26	55	29	54	443	147
30	84	66	94	e43	---	65	31	62	25	21	287	129
31	100	---	102	93	---	65	---	138	---	199	177	---
TOTAL	483.1	3,096	5,105	4,114	7,400	13,788	3,416	5,704	7,633	6,221.0	4,641.7	8,822
MEAN	15.6	103	165	133	264	445	114	184	254	201	150	294
MAX	100	243	502	504	1,320	1,280	395	778	798	1,220	1,300	2,340
MIN	2.8	27	32	37	56	51	26	52	25	8.0	8.2	33
CFSM	0.25	1.63	2.61	2.10	4.18	7.04	1.80	2.91	4.03	3.18	2.37	4.65
IN.	0.28	1.82	3.00	2.42	4.36	8.12	2.01	3.36	4.49	3.66	2.73	5.19

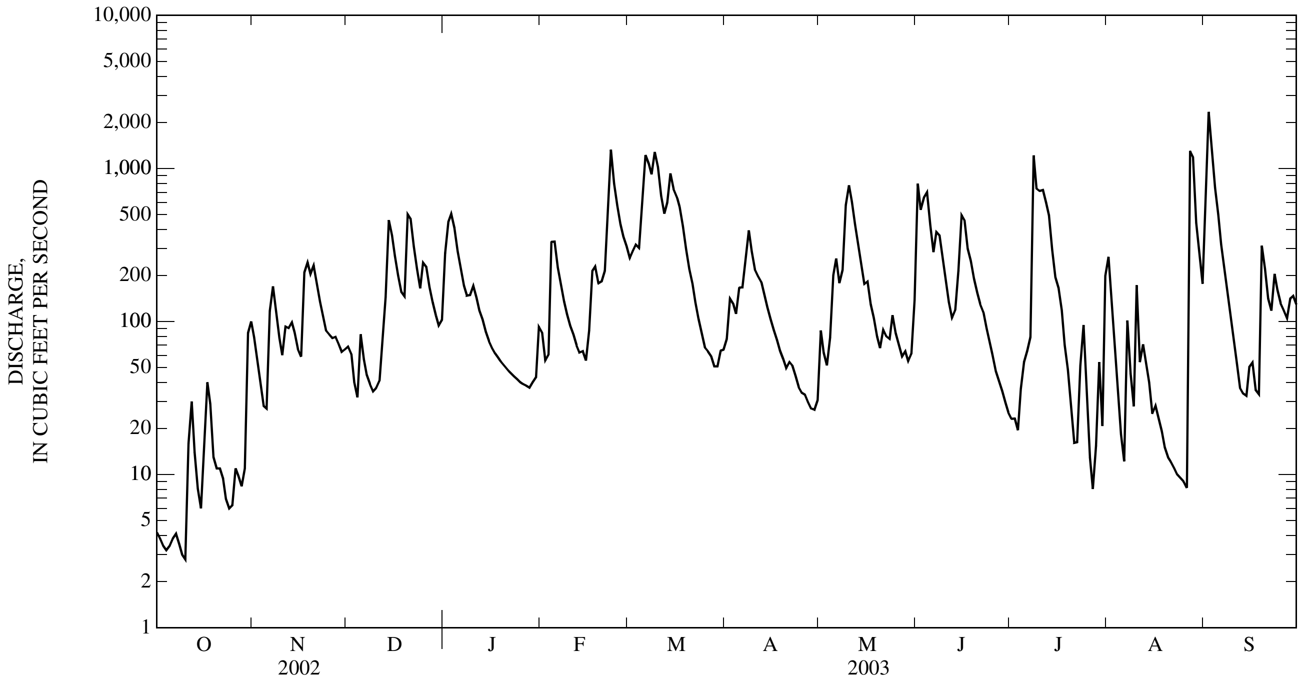
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	20.6	53.1	131	169	175	216	151	120	73.6	47.4	46.3	26.0
MAX	155	110	282	337	337	474	353	279	254	201	309	294
(WY)	(1955)	(1963)	(1957)	(1952)	(1956)	(1963)	(1948)	(1968)	(2003)	(2003)	(1956)	(2003)
MIN	1.27	1.85	11.2	32.4	53.5	56.8	52.3	23.6	9.23	2.89	2.42	1.97
(WY)	(1954)	(1954)	(1954)	(1967)	(1954)	(1969)	(1963)	(1962)	(1959)	(1966)	(1953)	(1953)

03062500 DECKERS CREEK AT MORGANTOWN, WV—Continued

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 1946 - 2003	
ANNUAL TOTAL	70,423.8			
ANNUAL MEAN	193		103	
HIGHEST ANNUAL MEAN			193	2003
LOWEST ANNUAL MEAN			54.8	1966
HIGHEST DAILY MEAN	2,340	Sep 2	2,740	Aug 6, 1956
LOWEST DAILY MEAN	(e)2.8	Oct 10	0.30	Sep 3, 1966
ANNUAL SEVEN-DAY MINIMUM	3.4	Oct 4	0.60	Sep 6, 1964
MAXIMUM PEAK FLOW	4,140	Jul 8	7,550	Aug 18, 1980
MAXIMUM PEAK STAGE	8.35	Jul 8	(a)12.36	Aug 18, 1980
INSTANTANEOUS LOW FLOW	(b)	(b)	(b)	(b)
	3.05		1.63	
ANNUAL RUNOFF (INCHES)	41.45		22.12	
10 PERCENT EXCEEDS	503		250	
50 PERCENT EXCEEDS	90		48	
90 PERCENT EXCEEDS	16		4.7	

a From floodmarks.
b Unknown.
e Estimated.



03065000 DRY FORK AT HENDRICKS, WV

LOCATION.--Lat 39°04'20", long 79°37'23", NAD27, Tucker County, Hydrologic Unit 05020004, on right bank at Hendricks, 0.4 mi upstream from confluence with Blackwater River.

DRAINAGE AREA.--349 mi^2.

PERIOD OF RECORD.--October 1940 to September 1993, October 1993 to September 1995 (gage heights only), October 1995 to current year.

REVISED RECORDS.--WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,698.76 ft above NGVD of 1929, adjustment of 1912. Prior to Dec. 21, 1941, nonrecording gage at same site and datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect, no gage-height record), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 23	1000	10,400	7.20	Jul 8	1300	10,000	7.07
May 10	2300	11,500	7.53	Sep 19	0700	*27,900	*11.77

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	191	1,340	810	1,340	802	798	614	e720	4,470	182	130	246
2	149	1,010	668	3,550	699	1,100	2,130	e1,100	2,810	304	123	831
3	129	778	647	2,480	621	1,310	2,120	918	1,790	220	110	1,890
4	114	642	525	1,740	1,340	1,110	e1,520	872	2,630	179	102	2,030
5	105	629	560	1,270	2,040	1,410	1,280	1,320	2,590	143	116	1,840
6	97	2,560	514	1,040	1,180	4,130	1,070	1,850	1,620	122	123	1,100
7	86	2,170	418	824	976	3,510	1,540	1,400	2,000	131	110	732
8	78	1,480	e400	737	750	2,310	3,460	1,420	2,460	3,580	232	543
9	71	1,200	e370	693	e540	3,070	3,310	2,410	1,890	3,050	446	419
10	71	979	402	756	e450	2,660	3,110	6,980	1,360	3,130	1,540	341
11	168	872	443	647	e390	1,790	2,840	7,510	978	1,500	1,890	269
12	487	1,670	874	e540	e340	1,350	3,070	3,000	841	886	2,130	218
13	375	2,870	870	e450	e300	2,570	e2,600	2,660	892	658	1,760	198
14	503	1,740	1,560	e400	e260	5,750	e1,700	1,840	1,380	505	857	205
15	415	1,200	1,290	e350	e235	3,540	e1,170	1,330	1,190	463	575	266
16	1,310	941	1,100	e305	e210	3,560	e870	1,080	1,140	395	438	340
17	2,270	1,510	898	e265	e195	4,120	690	864	1,270	305	601	227
18	1,270	1,570	771	e240	e182	3,940	584	1,180	1,610	241	582	246
19	829	1,360	734	e225	e170	3,420	896	1,480	1,220	223	382	12,700
20	832	1,740	5,170	e210	e310	3,410	673	1,180	1,470	192	288	3,680
21	726	1,500	3,610	e195	523	3,630	e627	994	1,620	159	231	1,750
22	559	1,520	2,020	e185	3,120	2,740	e645	842	1,330	142	191	1,110
23	452	1,260	1,680	e180	8,260	1,960	635	686	972	148	168	1,530
24	369	1,030	1,240	e170	3,720	1,420	563	674	703	152	150	998
25	316	967	1,110	e165	2,030	1,180	502	577	532	134	123	706
26	806	978	882	e160	1,400	1,100	485	494	420	108	107	598
27	845	1,190	696	e155	1,100	891	465	462	338	93	118	504
28	643	1,080	612	e150	918	715	402	584	287	182	254	681
29	1,030	928	584	656	---	745	e360	693	235	508	180	662
30	3,460	866	507	871	---	751	e400	709	190	258	187	527
31	2,070	---	552	845	---	599	---	876	---	156	303	---
TOTAL	20,826	39,580	32,517	21,794	33,061	70,589	40,331	48,705	42,238	18,449	14,547	37,387
MEAN	672	1,319	1,049	703	1,181	2,277	1,344	1,571	1,408	595	469	1,246
MAX	3,460	2,870	5,170	3,550	8,260	5,750	3,460	7,510	4,470	3,580	2,130	12,700
MIN	71	629	370	150	170	599	360	462	190	93	102	198
CFSM	1.92	3.78	3.01	2.01	3.38	6.52	3.85	4.50	4.03	1.71	1.34	3.57
IN.	2.22	4.22	3.47	2.32	3.52	7.52	4.30	5.19	4.50	1.97	1.55	3.99

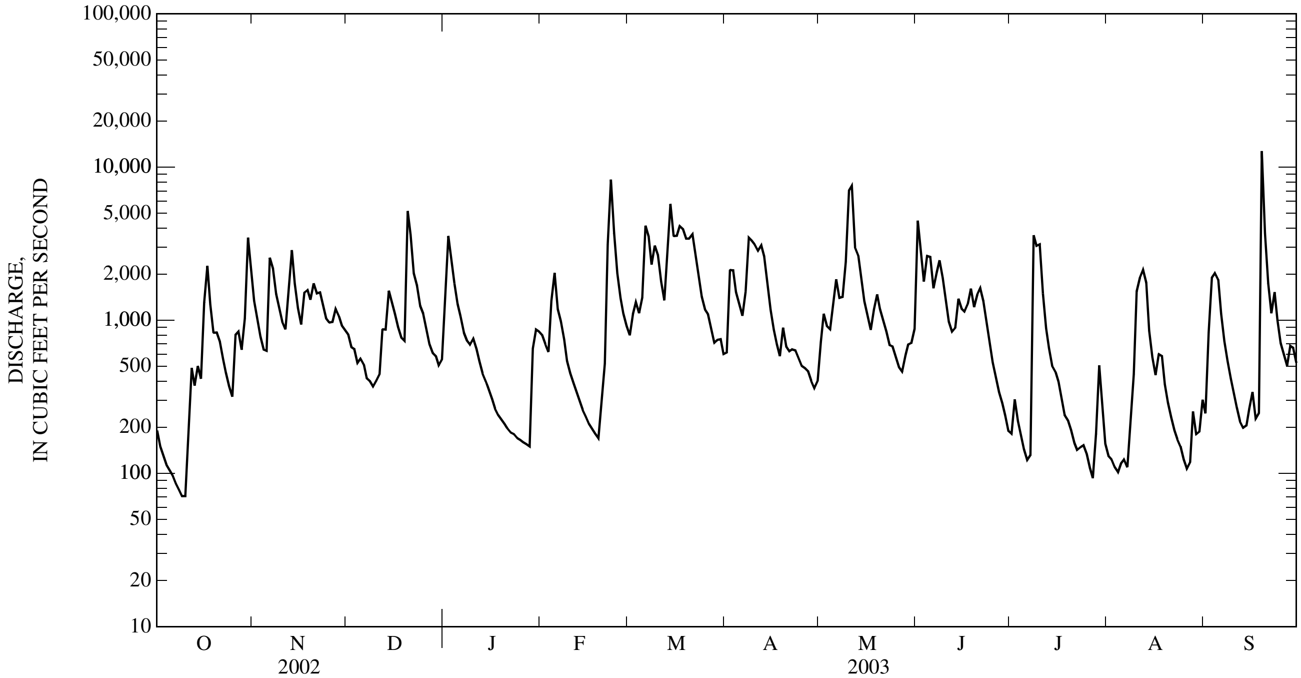
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	360	666	944	1,027	1,202	1,549	1,212	924	541	388	339	272
MAX	1,704	4,165	2,224	2,545	2,688	3,736	2,914	3,543	1,737	1,796	1,266	1,316
(WY)	(1977)	(1986)	(1973)	(1996)	(1956)	(1963)	(1958)	(1996)	(1974)	(1996)	(1956)	(1996)
MIN	13.8	35.0	242	174	227	588	373	236	67.3	32.1	23.7	11.6
(WY)	(1954)	(1954)	(2002)	(1977)	(1978)	(1990)	(1946)	(1970)	(1991)	(1993)	(1957)	(1946)

03065000 DRY FORK AT HENDRICKS, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1941 - 2003	
ANNUAL TOTAL	326,616		420,024			
ANNUAL MEAN	895		1,151		783	
HIGHEST ANNUAL MEAN					1,435	1996
LOWEST ANNUAL MEAN					510	1959
HIGHEST DAILY MEAN	10,800	Mar 20	12,700	Sep 19	34,000	Nov 5, 1985
LOWEST DAILY MEAN	21	(a)	71	(b)	2.4	(c)
ANNUAL SEVEN-DAY MINIMUM	23	Sep 10	89	Oct 4	3.5	Aug 28, 1993
MAXIMUM PEAK FLOW			27,900	Sep 19	(d)100,000	Nov 5, 1985
MAXIMUM PEAK STAGE			11.77	Sep 19	(f)20.74	Nov 5, 1985
INSTANTANEOUS LOW FLOW			69	(b)	2.2	Sep 1, 1993
ANNUAL RUNOFF (CFSM)	2.56		3.30		2.24	
ANNUAL RUNOFF (INCHES)	34.81		44.77		30.47	
10 PERCENT EXCEEDS	2,010		2,660		1,820	
50 PERCENT EXCEEDS	559		771		425	
90 PERCENT EXCEEDS	69		168		64	

a Sept. 14, 15.
b Oct. 9, 10.
c Sept. 1, 2, 1993.
d From rating curve extended above 47,000 ft^3/s on basis of slope-area measurement of peak flow.
e Estimated.
f From floodmarks.



03065400 BLACKWATER RIVER NEAR DAVIS, WV

LOCATION.--Lat 39°08'24", long 79°25'12", NAD27, Tucker County, Hydrologic Unit 05020004, on right bank, 2.8 mi northeast of Davis, 0.5 mi upstream from Yellow Creek, and at mile 14.0.

DRAINAGE AREA.--54.7 mi^2.

PERIOD OF RECORD.--November 1991 to September 1998, November 2002 to September 2003.

REVISED RECORDS.--WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Elevation of gage is approximately 3,130 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those above 500 ft^3/s, which are fair, and those for periods of estimated daily discharges (no gage-height record, ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 11	1330	934	4.84	Sep 19	1630	*2,410	*8.51
Jul 10	1730	1,020	5.09				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e37	204	e112	257	121	e460	181	71	404	43	42	91
2	e32	168	e100	589	117	e390	361	99	325	56	38	132
3	e29	131	e92	441	112	e350	248	83	217	44	36	219
4	e25	111	e84	263	248	e310	189	76	379	38	33	501
5	e24	109	e77	187	e470	e290	233	144	443	34	39	594
6	e23	388	e71	158	e350	e490	207	231	249	31	52	282
7	e22	389	e65	e115	e260	e500	331	169	317	32	38	161
8	e19	253	e60	e100	e200	e420	456	228	435	442	43	123
9	e16	187	e55	e96	e160	e510	489	225	270	931	61	101
10	e17	162	e54	e110	e135	e450	489	492	175	987	288	88
11	e40	161	e76	e90	e115	e300	597	867	133	884	221	74
12	e76	246	140	e78	e100	e230	680	591	113	405	269	64
13	e64	429	132	e68	e88	e500	447	474	120	222	495	59
14	e66	270	204	e60	e78	e800	272	359	137	146	305	57
15	e49	176	186	e52	e70	e740	206	227	251	105	144	58
16	e200	149	152	e47	e64	e720	167	201	381	82	103	84
17	e290	271	119	e42	e60	e780	139	162	304	66	237	56
18	e180	259	117	e38	e55	891	123	187	342	54	392	68
19	e110	199	115	e34.5	e52	860	173	189	207	55	177	1,670
20	e130	277	538	e32	e100	809	131	132	271	45	109	1,540
21	e120	214	632	e30	e240	816	124	120	358	38	86	638
22	e84	214	333	e28	482	637	148	113	248	34	70	248
23	e70	177	278	e26.5	764	440	132	94	167	35	65	419
24	e60	148	181	e25.5	884	315	e95	109	125	37	53	278
25	e56	152	154	e24.5	e820	240	86	89	102	31	45	171
26	e165	148	e120	e23.5	e760	213	92	80	84	27	42	146
27	e166	178	e100	e23	e700	200	86	73	72	24	e100	124
28	e110	143	e90	e22.5	e550	159	72	96	63	136	e190	e150
29	e160	115	e82	112	---	144	64	103	54	353	63	e190
30	e375	118	e76	124	---	162	64	129	46	91	70	127
31	e290	---	97	123	---	152	---	122	---	50	133	---
TOTAL	3,105	6,146	4,692	3,420.0	8,155	14,278	7,082	6,335	6,792	5,558	4,039	8,513
MEAN	100	205	151	110	291	461	236	204	226	179	130	284
MAX	375	429	632	589	884	891	680	867	443	987	495	1,670
MIN	16	109	54	22	52	144	64	71	46	24	33	56
CFSM	1.83	3.75	2.77	2.02	5.32	8.42	4.32	3.74	4.14	3.28	2.38	5.19
IN.	2.11	4.18	3.19	2.33	5.55	9.71	4.82	4.31	4.62	3.78	2.75	5.79

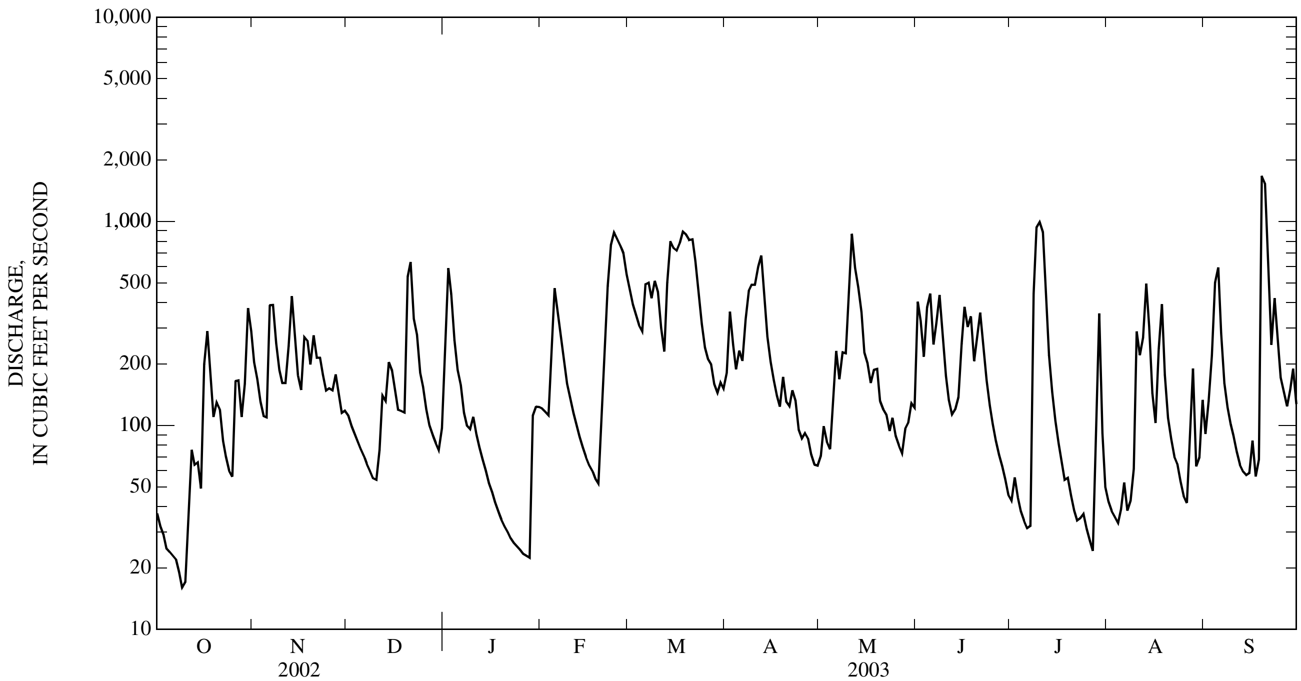
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	47.6	130	179	208	246	328	185	189	92.2	102	88.3	80.7
MAX	108	221	244	378	486	461	350	406	226	236	211	284
(WY)	(1997)	(1998)	(1997)	(1996)	(1994)	(2003)	(1993)	(1996)	(2003)	(2001)	(1996)	(2003)
MIN	9.93	30.8	123	110	69.5	146	88.5	65.5	29.1	9.48	7.10	10.8
(WY)	(1995)	(1992)	(1995)	(2003)	(1993)	(1995)	(1995)	(1993)	(1994)	(1993)	(1993)	(1995)

03065400 BLACKWATER RIVER NEAR DAVIS, WV--Continued

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 1992 - 2003	
ANNUAL TOTAL	78,115.0			
ANNUAL MEAN	214		161	
HIGHEST ANNUAL MEAN			220	1996
LOWEST ANNUAL MEAN			101	1995
HIGHEST DAILY MEAN	1,670	Sep 19	(e)3,800	Feb 9, 1994
LOWEST DAILY MEAN	(e)16	Oct 9	4.0	Aug 30, 1993
ANNUAL SEVEN-DAY MINIMUM	21	Oct 4	4.9	Aug 28, 1993
MAXIMUM PEAK FLOW	2,410	Sep 19	4,050	Feb 9, 1994
MAXIMUM PEAK STAGE	8.51	Sep 19	(a)10.51	Jan 19, 1996
INSTANTANEOUS LOW FLOW	23	(b)	4.0	(c)
ANNUAL RUNOFF (CFSM)	3.91		2.94	
ANNUAL RUNOFF (INCHES)	53.12		39.94	
10 PERCENT EXCEEDS	489		391	
50 PERCENT EXCEEDS	135		94	
90 PERCENT EXCEEDS	39		14	

a From floodmark.
b July 27, 28.
c July 25, 26, Aug. 29-31, 1993.
e Estimated.



03066000 BLACKWATER RIVER AT DAVIS, WV

LOCATION.--Lat 39°07'37", long 79°28'07", NAD27, Tucker County, Hydrologic Unit 05020004, on right bank 0.4 mi southwest of Davis, 0.5 mi downstream from Beaver Creek, and at mile 11.1.

DRAINAGE AREA.--85.9 mi^2.

PERIOD OF RECORD.--April 1921 to current year.

REVISED RECORDS.--WSP 583: 1921-23. WSP 803: Drainage area. WSP 1173: 1931-34(M,m). WSP 1305: 1928(M), 1932-37(M), 1939-41(M), 1944-48(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 3,058.87 ft above NGVD of 1929 (levels by West Virginia Power and Transmission Company). Prior to Dec. 18, 1952, nonrecording gage at site 60 ft downstream at same datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect, no gage-height record), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 23	1500	1,820	6.97	Jul 28	1900	1,670	6.66
Jul 8	1100	1,670	6.66	Sep 4	1700	1,540	6.37
Jul 10	0100	1,730	6.78	Sep 19	1530	*4,590	(a)*11.35

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	312	e166	486	193	643	284	109	728	62	74	158
2	50	251	e152	955	191	598	581	155	462	79	66	266
3	45	193	154	638	186	549	375	124	338	67	58	360
4	41	164	e115	395	591	474	281	114	548	56	54	1,180
5	40	175	115	293	737	461	410	242	566	50	59	919
6	39	609	e105	251	e510	771	325	350	344	45	74	418
7	33	537	e100	187	e406	778	535	262	508	59	57	252
8	29	359	e90	e260	e345	642	661	360	611	1,070	63	185
9	26	282	e80	e250	e260	797	789	366	376	1,330	120	149
10	29	240	e76	182	e230	688	694	840	257	1,440	413	127
11	63	241	106	148	e190	456	851	1,200	197	1,090	388	105
12	126	446	167	e120	e160	371	981	757	167	519	403	90
13	105	640	164	e105	e140	766	619	676	184	309	605	90
14	109	384	258	e92	e128	1,310	390	486	219	210	380	89
15	82	266	211	e84	e115	1,150	302	334	385	153	192	102
16	327	227	171	e75	e105	1,110	246	306	499	121	140	140
17	482	429	e150	e66	e96	1,200	211	248	462	100	481	89
18	306	393	133	e60	e90	1,250	186	286	502	84	504	e90
19	183	327	159	e55	e84	1,170	263	283	302	85	240	e4,000
20	217	428	1,020	e50	e160	1,070	194	200	420	70	143	e2,500
21	200	329	847	e47	381	1,130	189	184	571	58	114	e1,000
22	144	321	467	e44	738	860	237	173	393	52	96	e410
23	113	266	405	e42	1,610	601	213	145	262	52	87	e520
24	98	226	e245	e41	1,520	436	157	183	192	54	74	e360
25	90	235	e150	e39	1,310	348	133	146	152	46	62	e262
26	269	235	187	e38	e1,160	312	136	124	125	39	55	e230
27	270	275	e155	e37	e1,000	290	128	117	108	35	168	e200
28	179	216	e140	e36	822	232	107	178	97	431	314	e290
29	265	175	e130	175	---	210	95	209	83	579	142	e285
30	616	177	e120	229	---	235	94	253	71	155	175	e212
31	467	---	162	204	---	220	---	265	---	85	275	---
TOTAL	5,107	9,358	6,700	5,684	13,458	21,128	10,667	9,675	10,129	8,585	6,076	15,078
MEAN	165	312	216	183	481	682	356	312	338	277	196	503
MAX	616	640	1,020	955	1,610	1,310	981	1,200	728	1,440	605	4,000
MIN	26	164	76	36	84	210	94	109	71	35	54	89
CFSM	1.92	3.63	2.52	2.13	5.60	7.93	4.14	3.63	3.93	3.22	2.28	5.85
IN.	2.21	4.05	2.90	2.46	5.83	9.15	4.62	4.19	4.39	3.72	2.63	6.53

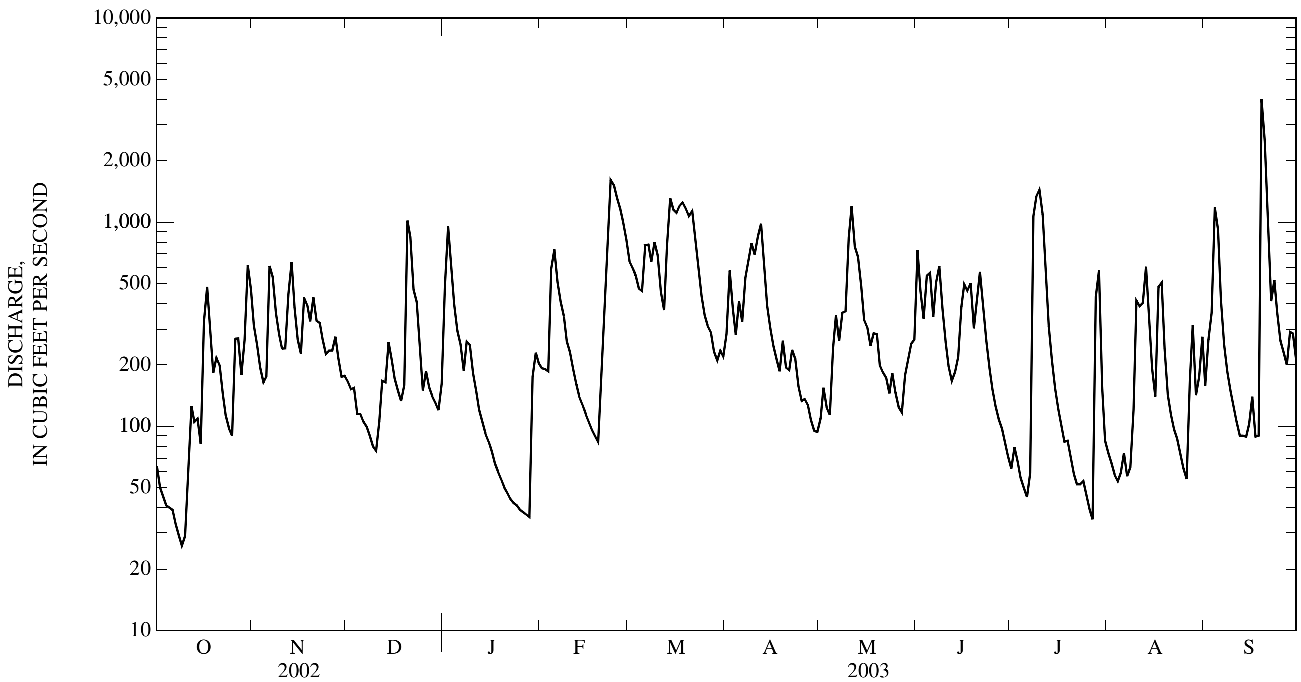
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	106	169	244	270	320	391	297	223	143	107	102	77.6
MAX	510	990	615	634	773	1,125	766	640	507	408	478	503
(WY)	(1977)	(1986)	(1973)	(1952)	(1994)	(1963)	(1958)	(1996)	(1981)	(1996)	(1956)	(2003)
MIN	4.31	6.73	45.7	44.5	52.4	127	74.7	47.4	23.2	14.2	7.19	5.23
(WY)	(1954)	(1931)	(1999)	(1977)	(1978)	(1990)	(1946)	(1930)	(1999)	(1930)	(1930)	(1930)

03066000 BLACKWATER RIVER AT DAVIS, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1921 - 2003	
ANNUAL TOTAL	79,486.9		121,645			
ANNUAL MEAN	218		333		203	
HIGHEST ANNUAL MEAN					362	1996
LOWEST ANNUAL MEAN					125	1959
HIGHEST DAILY MEAN	1,650	Mar 21	(e)4,000	Sep 19	9,470	Nov 5, 1985
LOWEST DAILY MEAN	7.5	(b)	26	Oct 9	1.6	Sep 11, 1959
ANNUAL SEVEN-DAY MINIMUM	8.4	Sep 9	34	Oct 4	2.4	Oct 1, 1953
MAXIMUM PEAK FLOW			4,590	Sep 19	(c)12,500	Nov 5, 1985
MAXIMUM PEAK STAGE			(a)11.35	Sep 19	(d)17.67	Nov 5, 1985
INSTANTANEOUS LOW FLOW			25	Oct 9	(f)1.5	(g)
ANNUAL RUNOFF (CFSM)	2.54		3.88		2.37	
ANNUAL RUNOFF (INCHES)	34.42		52.68		32.19	
10 PERCENT EXCEEDS	472		761		480	
50 PERCENT EXCEEDS	136		216		111	
90 PERCENT EXCEEDS	23		61		19	

a Observed.
b Sept. 12, 13.
c From rating curve extended above 7,000 ft^3/s.
d From floodmarks.
e Estimated.
f Caused by filling small water-supply pool about 1.0 mi upstream.
g Sept. 11, 12, 1959.



03067510 SHAVERS FORK NEAR CHEAT BRIDGE, WV

LOCATION.--Lat 38°37'01", long 79°52'12", NAD27, Randolph County, Hydrologic Unit 05020004, on left downstream wingwall, on US Route 250 at Cheat Bridge, 1.8 mi downstream from Fish Hatchery Run, and at mile 65.5.

DRAINAGE AREA.--60.16 mi^2.

PERIOD OF RECORD.--October 2001 to current year.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 3,536.56 ft above NGVD of 1929.

REMARKS.--Records good except those for periods of estimated daily discharges (no gage-height record, ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 16	1700	1,730	9.21	Mar 20	2000	2,590	10.44
Oct 29	2200	2,420	10.21	May 10	1500	3,200	11.21
Nov 12	1600	1,470	8.77	Jun 1	0800	1,250	8.36
Dec 20	0800	2,420	10.21	Jun 4	0500	1,970	9.58
Jan 1	2000	3,460	11.52	Jun 7	1600	1,860	9.42
Feb 23	1300	3,400	11.45	Sep 4	0900	1,770	9.28
Mar 13	2300	1,920	9.50	Sep 19	0600	*4,320	*12.42

REVISIONS.--The annual maximum (*) peak discharge for the 2002 water year on Apr. 28 has been revised to 5,140 ft^3/s. The second largest peak on Apr. 22 was revised to 4,630 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	245	108	1,270	129	146	237	146	893	54	44	118
2	81	190	109	1,070	124	181	621	155	380	56	44	349
3	69	158	92	453	126	186	643	126	365	70	33	643
4	61	146	e75	e270	309	178	465	302	1,180	58	29	1,140
5	61	193	e68	e240	330	182	399	289	426	48	34	470
6	52	768	e63	e210	217	388	293	275	277	43	32	242
7	46	344	e58	e170	e170	337	748	214	732	39	28	170
8	41	230	87	e146	e140	240	810	187	500	339	43	128
9	39	214	79	150	e110	291	939	337	448	255	71	101
10	67	185	75	116	e96	257	494	1,440	268	244	165	87
11	132	179	195	e100	e80	196	445	825	212	138	286	74
12	134	702	206	e92	e66	173	467	352	184	95	178	63
13	133	497	170	e84	e58	716	347	388	290	137	91	61
14	163	266	310	e74	e52	994	257	254	280	270	71	59
15	115	204	172	e62	e48	547	216	215	192	269	58	83
16	895	193	139	e52	e44	672	191	196	258	139	58	104
17	584	402	112	e49	e41	855	168	164	338	100	227	61
18	273	254	116	e45	e39	972	178	430	316	82	120	92
19	195	245	135	e42	e36	1,090	245	387	226	93	76	2,020
20	185	274	1,330	e39	e50	1,660	176	242	477	72	59	432
21	161	270	441	e36	306	1,190	153	339	311	58	48	236
22	132	343	257	e35	1,290	912	153	271	227	52	42	178
23	112	229	199	e33	2,210	627	170	224	175	48	39	432
24	100	187	163	e32	857	450	136	193	141	54	33	213
25	92	176	155	e30	397	442	120	159	117	42	28	155
26	262	185	e138	e29	266	488	140	161	99	36	25	132
27	188	225	e123	e28	214	390	215	140	88	32	43	112
28	181	163	117	e28	167	328	144	235	82	40	79	110
29	867	137	102	120	---	477	125	305	73	58	60	102
30	881	132	93	152	---	394	123	232	62	51	50	87
31	360	---	96	139	---	257	---	266	---	39	88	---
TOTAL	6,752	7,936	5,583	5,396	7,972	16,216	9,818	9,449	9,617	3,111	2,282	8,254
MEAN	218	265	180	174	285	523	327	305	321	100	73.6	275
MAX	895	768	1,330	1,270	2,210	1,660	939	1,440	1,180	339	286	2,020
MIN	39	132	58	28	36	146	120	126	62	32	25	59
CFSM	3.62	4.39	2.99	2.89	4.73	8.69	5.44	5.06	5.33	1.67	1.22	4.57
IN.	4.17	4.90	3.45	3.33	4.93	10.02	6.07	5.84	5.94	1.92	1.41	5.10

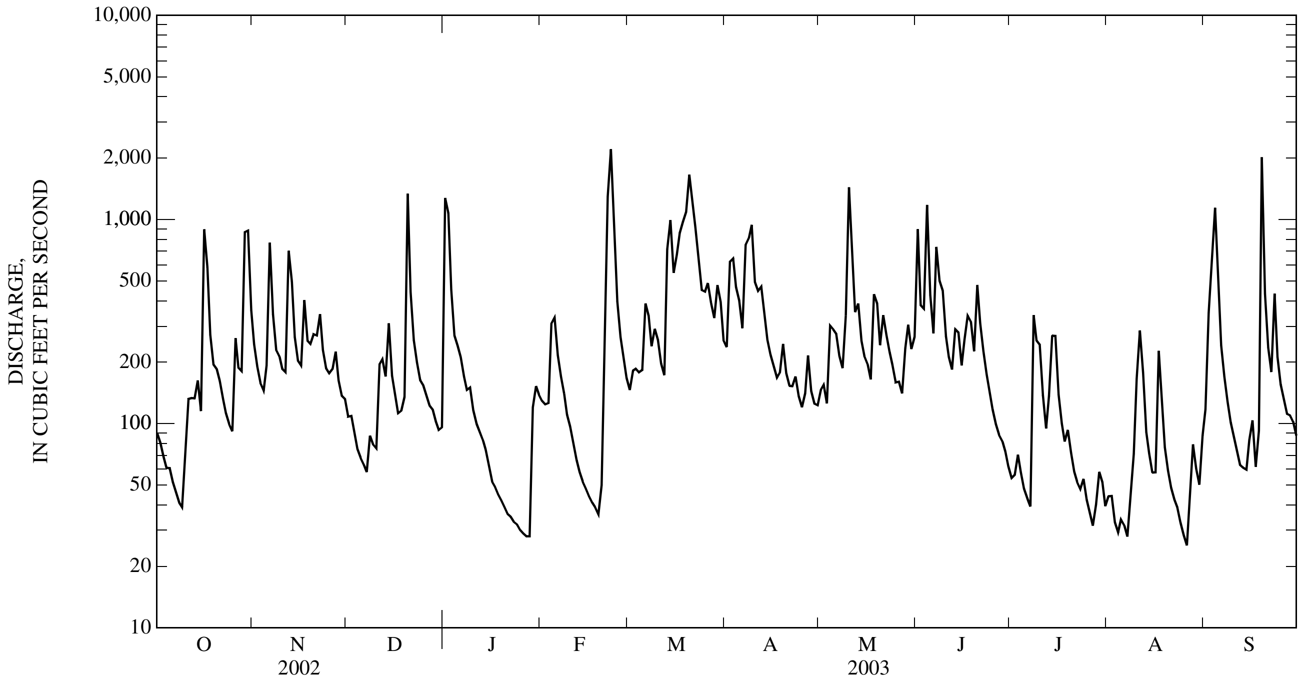
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	115	139	123	156	195	398	352	300	188	156	55.6	179
MAX	218	265	180	174	285	523	376	305	321	213	73.6	275
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2003)	(2002)	(2003)	(2003)
MIN	12.4	13.9	66.8	138	105	272	327	295	56.2	100	37.6	82.1
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2003)	(2002)	(2002)	(2003)	(2002)	(2002)

03067510 SHAVERS FORK NEAR CHEAT BRIDGE, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2002 - 2003	
ANNUAL TOTAL	68,272.7		92,386			
ANNUAL MEAN	187		253		196	
HIGHEST ANNUAL MEAN					253	2003
LOWEST ANNUAL MEAN					139	2002
HIGHEST DAILY MEAN	2,100	Apr 22	2,210	Feb 23	2,210	Feb 23, 2003
LOWEST DAILY MEAN	4.2	Sep 13	25	Aug 26	4.2	Sep 13, 2002
ANNUAL SEVEN-DAY MINIMUM	5.3	Sep 9	31	Jan 22	5.3	Sep 9, 2002
MAXIMUM PEAK FLOW			4,320	Sep 19	4,790	Apr 28, 2002
MAXIMUM PEAK STAGE			12.42	Sep 19	13.15	Apr 28, 2002
INSTANTANEOUS LOW FLOW			23	(a)	4.1	(b)
ANNUAL RUNOFF (CFSM)	3.11		4.20		3.26	
ANNUAL RUNOFF (INCHES)	42.19		57.09		44.29	
10 PERCENT EXCEEDS	409		519		432	
50 PERCENT EXCEEDS	114		167		112	
90 PERCENT EXCEEDS	23		44		16	

a Aug. 26, 27.
b Sept. 13, 14.
e Estimated.



03068800 SHAVERS FORK BELOW BOWDEN, WV

LOCATION.--Lat 38°54'47", long 79°46'14", NAD27, Randolph County, Hydrologic Unit 05020004, on upstream side of right pier, on County Route 33/8 bridge, 3.0 mi west of Bowden, and at mile 26.4.

DRAINAGE AREA.--151 mi^2.

PERIOD OF RECORD.--August 1973 to September 1981, October 1997 to current year. Once daily wire-weight gage readings at same site November 1971 to August 1973 are contained in files of Bowden National Fish Hatchery.

GAGE.--Water-stage recorder with satellite telemeter. Elevation of gage is approximately 2,120 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 30	0300	4,130	8.06	Mar 20	2400	4,970	8.41
Dec 20	1500	5,380	8.57	May 9	2000	5,460	8.60
Jan 2	0200	6,720	9.04	May 10	1900	*13,100	*10.68
Feb 22	2400	4,620	8.27	Sep 2	1800	3,720	7.86
Mar 14	0400	4,620	8.27	Sep 19	1000	10,100	10.01

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	226	736	439	965	277	354	525	421	2,420	168	91	319
2	186	566	342	3,380	231	438	1,030	622	1,290	188	91	1,310
3	158	446	328	1,360	198	483	1,600	469	857	142	91	1,710
4	141	376	260	924	469	402	1,130	576	1,820	136	75	2,110
5	128	371	238	656	585	490	907	739	1,130	133	94	1,480
6	122	1,390	237	554	432	1,060	745	830	743	117	84	754
7	102	1,100	219	419	341	1,080	1,430	673	1,070	103	76	513
8	88	705	199	365	275	774	1,830	685	1,430	751	81	374
9	80	613	187	369	245	936	2,000	1,840	925	1,010	448	285
10	82	517	163	373	e200	845	1,420	5,080	673	785	574	234
11	237	475	239	277	e170	621	1,150	3,780	523	495	552	194
12	356	1,240	649	237	e150	513	1,230	1,310	556	336	974	162
13	383	1,860	469	234	e130	1,170	945	1,120	718	255	565	143
14	610	1,020	844	e205	e120	3,050	713	831	1,080	445	312	136
15	393	738	656	e180	e117	1,630	571	638	608	519	227	148
16	1,280	605	509	e150	e98	1,750	478	571	555	353	228	225
17	1,870	1,020	398	e132	e90	2,170	406	458	810	245	449	173
18	867	967	366	e120	e85	2,400	358	656	855	189	454	154
19	585	766	369	e110	e80	2,530	457	1,090	637	197	263	4,930
20	555	1,030	2,830	e100	e130	2,990	392	689	943	180	199	1,460
21	517	858	1,680	e94	197	2,920	333	631	965	139	158	767
22	398	1,070	962	e90	1,380	2,010	334	701	674	121	138	543
23	322	853	742	e84	3,610	1,520	378	528	513	118	120	770
24	273	654	550	e80	1,530	1,070	340	466	394	115	107	602
25	240	605	510	e78	832	956	293	388	311	101	88	420
26	402	616	403	e75	587	1,010	275	332	254	85	77	353
27	510	831	312	e73	457	909	446	318	212	71	78	315
28	363	671	292	e71	391	716	369	376	186	82	117	420
29	737	531	265	324	---	817	301	563	163	200	199	401
30	2,490	485	245	363	---	872	282	584	139	147	150	329
31	1,080	---	262	301	---	603	---	508	---	105	182	---
TOTAL	15,781	23,715	16,164	12,743	13,407	39,089	22,668	28,473	23,454	8,031	7,342	21,734
MEAN	509	790	521	411	479	1,261	756	918	782	259	237	724
MAX	2,490	1,860	2,830	3,380	3,610	3,050	2,000	5,080	2,420	1,010	974	4,930
MIN	80	371	163	71	80	354	275	318	139	71	75	136
CFSM	3.37	5.24	3.45	2.72	3.17	8.35	5.00	6.08	5.18	1.72	1.57	4.80
IN.	3.89	5.84	3.98	3.14	3.30	9.63	5.58	7.01	5.78	1.98	1.81	5.35

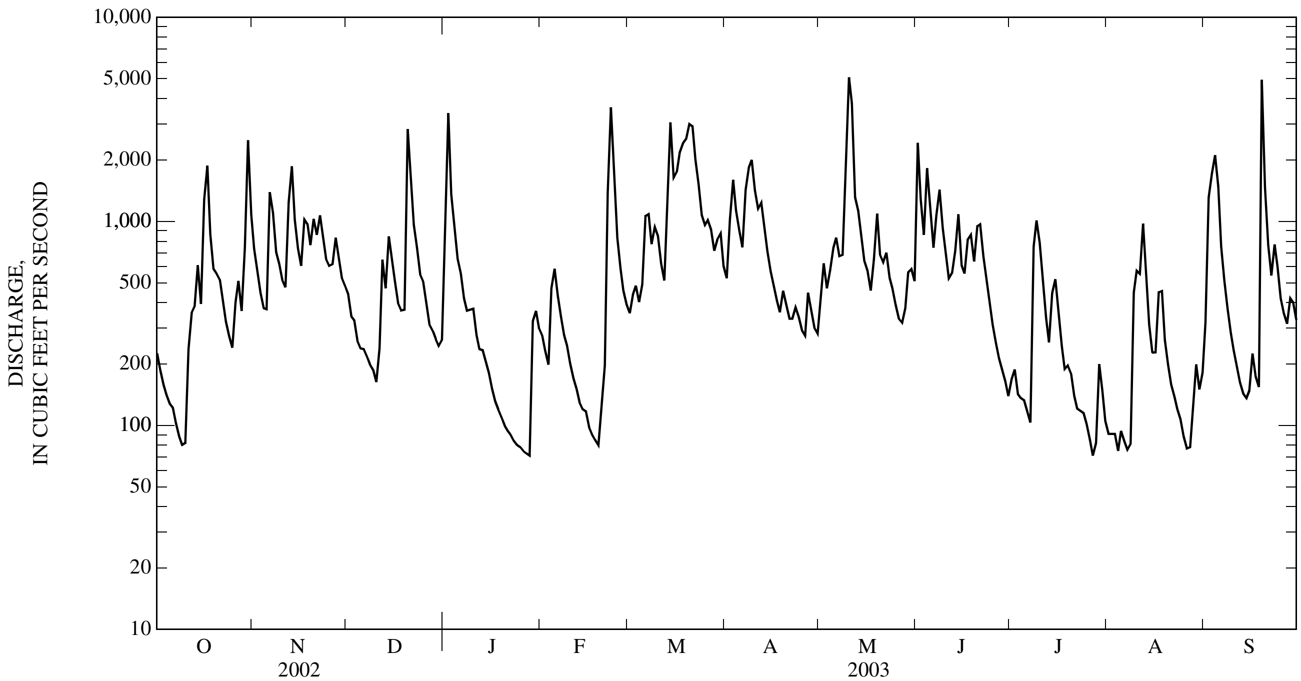
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2003, BY WATER YEAR (WY)

MEAN	283	334	468	526	571	798	653	512	435	280	211	224
MAX	913	790	952	1,095	1,054	1,261	1,162	918	978	460	438	724
(WY)	(1977)	(2003)	(1974)	(1999)	(2000)	(2003)	(2002)	(2003)	(1974)	(1980)	(1979)	(2003)
MIN	31.6	32.1	177	77.8	121	422	264	201	63.3	43.2	25.8	37.4
(WY)	(2002)	(2002)	(2002)	(1977)	(1978)	(1976)	(1976)	(1977)	(1999)	(1999)	(1999)	(1999)

03068800 SHAVERS FORK BELOW BOWDEN, WV--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1973 - 2003	
ANNUAL TOTAL	178,798.2		232,601			
ANNUAL MEAN	490		637		441	
HIGHEST ANNUAL MEAN					637	2003
LOWEST ANNUAL MEAN					321	1976
HIGHEST DAILY MEAN	7,460	Apr 22	5,080	May 10	9,010	Feb 19, 2000
LOWEST DAILY MEAN	9.5	Sep 14	71	(a)	9.5	Sep 14, 2002
ANNUAL SEVEN-DAY MINIMUM	11	Sep 10	79	Jan 22	11	Sep 10, 2002
MAXIMUM PEAK FLOW			13,100	May 10	(b)17,900	Jun 17, 1998
MAXIMUM PEAK STAGE			10.68	May 10	11.57	Jun 17, 1998
INSTANTANEOUS LOW FLOW			63	Jul 28	9.1	(c)
ANNUAL RUNOFF (CFSM)	3.24		4.22		2.92	
ANNUAL RUNOFF (INCHES)	44.05		57.30		39.70	
10 PERCENT EXCEEDS	1,090		1,370		965	
50 PERCENT EXCEEDS	283		446		264	
90 PERCENT EXCEEDS	51		113		61	

a Jan. 28 (estimated), July 27.
b From rating curve extended above 4,100 ft^3/s.
c Sept. 14, 15, 2002.
e Estimated.



03069500 CHEAT RIVER NEAR PARSONS, WV

LOCATION.--Lat 39°07'22", long 79°40'53", NAD27, Tucker County, Hydrologic Unit 05020004, on left bank 2.0 mi north of Parsons, 3.0 mi downstream from confluence of Black Fork and Shavers Fork, and at mile 75.2.

DRAINAGE AREA.--722 mi^2.

PERIOD OF RECORD.--January 1913 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 893: Drainage area. WSP 1305: 1917(M), 1924(M), 1932(M), 1936(M), 1938-39(M). WSP 1335: 1916. WSP 1385: 1918-19(M). WDR WV-97-1: Drainage area, 1888(M), 1914(P), 1915-16(M), 1917(P), 1924(P), 1939(P), 1940(M), 1942(M), 1948-49(M), 1955-57(M), 1962-64(M), 1967(M), 1971-73(M), 1977(M).

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,589.66 ft above NGVD of 1929, adjustment of 1912. Prior to Aug. 17, 1944, nonrecording gage on Moss Bridge about 1,600 ft upstream at datum 1.13 ft higher. Nov. 21, 1985, to Sept. 30, 1986, recording gage on Moss Bridge at datum 1.27 ft lower.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect, no gage-height record), which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD--Flood of 1844 was about 85,000 ft^3/s. Flood of July 10, 1888, reached a stage of 20.5 ft, discharge, 71,000 ft^3/s, from floodmarks, at site and datum in use prior to Aug. 17, 1944; it was not exceeded until flood of Oct. 15, 1954, which reached a stage 0.3 ft higher at that site and datum.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 16,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 20	1800	16,100	9.86	Jul 8	1400	17,400	10.16
Feb 23	1100	21,900	11.15	Sep 19	0800	*40,800	*14.43
May 11	0100	28,500	12.41				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	610	3,020	1,690	2,480	e1,450	1,800	1,710	1,040	9,610	439	392	787
2	475	2,270	1,420	9,090	e1,350	2,410	4,760	2,210	6,080	714	353	2,200
3	411	1,750	1,330	5,900	e1,300	2,860	5,100	2,000	3,720	550	322	5,200
4	359	1,450	989	4,170	3,670	2,410	3,630	1,810	5,590	460	298	7,070
5	328	1,330	1,020	2,890	3,760	2,950	3,270	2,750	5,320	400	313	5,910
6	302	5,280	985	2,310	2,370	7,780	2,720	3,990	3,350	350	347	3,080
7	273	5,200	784	1,790	1,880	7,040	4,690	3,000	4,160	420	308	1,960
8	232	3,300	e730	1,590	1,380	4,930	7,470	3,200	6,010	7,170	386	1,420
9	207	2,600	e700	1,530	1,140	6,330	7,560	4,520	3,970	6,670	917	1,080
10	198	2,130	690	1,750	e950	5,530	6,500	14,300	2,840	7,600	3,390	864
11	359	1,920	811	1,400	e800	3,780	6,350	17,400	2,040	4,200	3,190	702
12	1,220	3,200	1,790	1,110	e700	2,850	6,560	6,530	1,820	2,390	3,820	584
13	977	6,860	1,810	970	666	4,800	4,870	5,500	1,860	1,640	4,030	520
14	1,400	3,870	3,230	950	e570	12,400	3,370	4,080	3,360	1,270	2,080	509
15	1,110	2,630	2,790	828	e500	7,750	2,530	2,880	2,850	1,300	1,180	597
16	2,540	2,060	2,220	683	e470	7,640	2,030	2,410	2,840	1,130	e740	888
17	5,960	3,340	1,810	e600	430	8,790	1,680	1,910	2,970	795	e2,000	666
18	3,120	3,830	1,550	e550	e400	8,800	1,430	2,230	3,850	627	e2,400	526
19	1,980	3,070	1,510	e500	e370	8,240	1,820	3,370	2,720	572	e1,200	25,300
20	1,940	4,120	9,910	e460	e500	8,010	1,580	2,500	3,310	541	e850	9,660
21	1,840	3,240	7,870	e430	820	9,060	1,380	2,070	4,350	444	e610	4,440
22	1,390	3,250	4,260	e410	5,370	6,530	1,500	2,020	3,200	377	e520	2,620
23	1,090	2,750	3,550	e390	17,700	4,940	1,500	1,610	2,280	378	457	3,800
24	892	2,170	2,600	e370	7,970	3,610	1,350	1,560	1,660	369	396	2,770
25	766	2,080	2,380	e360	4,540	2,990	1,180	1,370	1,270	336	333	1,820
26	1,530	2,120	1,980	e350	3,250	2,850	1,120	1,120	991	280	287	1,510
27	1,990	2,590	1,600	e340	2,560	2,560	1,130	1,040	804	237	341	1,270
28	1,470	2,370	1,370	e330	2,100	2,040	1,110	1,220	698	946	969	1,780
29	1,870	1,930	1,250	e1,000	---	2,020	919	1,610	602	2,120	585	1,830
30	7,740	1,770	1,090	e1,600	---	2,270	858	1,820	510	868	719	1,440
31	4,650	---	1,170	e1,550	---	1,830	---	1,910	---	495	1,070	---
TOTAL	49,229	87,500	66,889	48,681	68,966	157,800	91,677	104,980	94,635	46,088	34,803	92,803
MEAN	1,588	2,917	2,158	1,570	2,463	5,090	3,056	3,386	3,154	1,487	1,123	3,093
MAX	7,740	6,860	9,910	9,090	17,700	12,400	7,560	17,400	9,610	7,600	4,030	25,300
MIN	198	1,330	690	330	370	1,800	858	1,040	510	237	287	509
CFSM	2.20	4.04	2.99	2.18	3.41	7.05	4.23	4.69	4.37	2.06	1.55	4.28
IN.	2.54	4.51	3.45	2.51	3.55	8.13	4.72	5.41	4.88	2.37	1.79	4.78

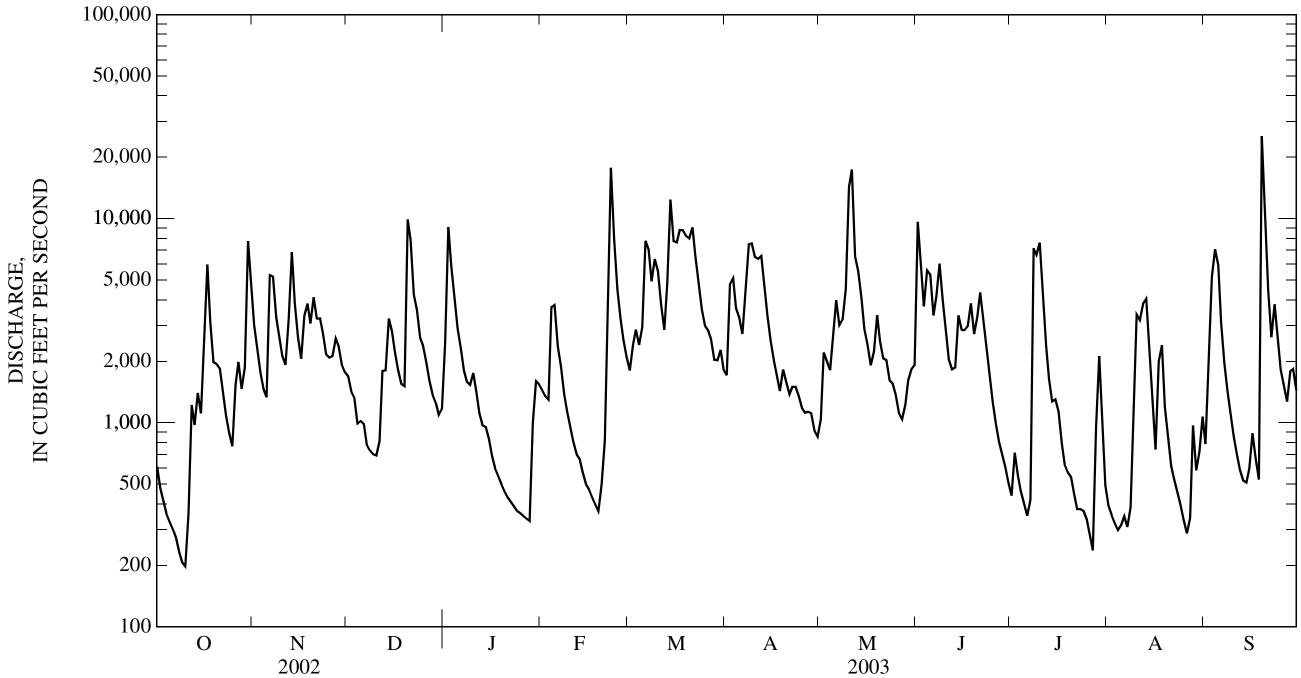
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	882	1,409	2,066	2,333	2,593	3,246	2,569	2,038	1,254	941	855	621
MAX	3,882	7,540	4,969	5,217	6,223	8,028	6,272	7,187	4,013	4,228	3,203	3,093
(WY)	(1977)	(1986)	(1973)	(1996)	(1994)	(1963)	(1958)	(1996)	(1974)	(1996)	(1942)	(2003)
MIN	18.6	37.5	387	370	459	441	668	443	188	89.3	34.9	23.3
(WY)	(1931)	(1931)	(1931)	(1977)	(1978)	(1915)	(1921)	(1930)	(1991)	(1930)	(1930)	(1930)

03069500 CHEAT RIVER NEAR PARSONS, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1913 - 2003	
ANNUAL TOTAL	708,916		944,051			
ANNUAL MEAN	1,942		2,586		1,729	
HIGHEST ANNUAL MEAN					3,124	1996
LOWEST ANNUAL MEAN					1,111	1930
HIGHEST DAILY MEAN	22,900	(a)	25,300	Sep 19	70,000	Nov 5, 1985
LOWEST DAILY MEAN	45	Sep 14	198	Oct 10	10	Aug 12, 1930
ANNUAL SEVEN-DAY MINIMUM	51	Sep 10	271	Oct 4	11	Oct 9, 1930
MAXIMUM PEAK FLOW			40,800	Sep 19	(b)170,000	Nov 5, 1985
MAXIMUM PEAK STAGE			14.43	Sep 19	(c)24.30	Nov 5, 1985
INSTANTANEOUS LOW FLOW			195	Oct 10	(d)9.0	Aug 12, 1930
ANNUAL RUNOFF (CFSM)	2.69		3.58		2.39	
ANNUAL RUNOFF (INCHES)	36.53		48.64		32.53	
10 PERCENT EXCEEDS	4,280		5,980		3,990	
50 PERCENT EXCEEDS	1,210		1,810		962	
90 PERCENT EXCEEDS	175		406		176	

a Mar. 20, Apr. 22.
b From rating curve extended above 55,000 ft^3/s.
c From floodmarks.
d Observed.
e Estimated.



03069870 CHEAT RIVER AT HWY 50 NEAR ROWLESBURG, WV

LOCATION.--Lat 39°19'11", long 79°39'25", NAD27, Preston County, Hydrologic Unit 05020004, on left bank at WV Route 50 Highway bridge at Macomber, 3 mi upstream from Rowlesburg, and at mile 48.6.

DRAINAGE AREA.--912 mi^2.

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,405.00 ft above NGVD of 1929.

REMARKS.--Records good except those above 20,000 ft^3/s which are fair, and those for periods of estimated daily discharges, (no gage-height record, ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 19,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 23	1200	24,200	12.12	Sep 4	0900	22,100	11.67
May 11	0500	26,300	12.55	Sep 19	1300	*32,800	*13.79
Jul 8	1800	21,000	11.44				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	819	4,580	2,360	2,890	2,380	2,460	2,140	1,010	12,000	575	580	1,890
2	623	3,310	1,980	11,500	2,350	3,020	6,110	2,060	9,660	660	495	4,830
3	523	2,480	1,850	9,420	2,230	4,100	7,240	2,640	5,420	721	458	8,520
4	461	1,960	1,420	7,070	5,220	3,620	5,220	2,150	6,590	587	427	15,400
5	412	1,680	1,620	4,850	7,180	4,080	4,450	3,030	7,480	514	454	9,980
6	376	5,610	1,600	3,820	4,120	11,300	4,060	5,750	4,860	466	449	5,010
7	352	8,430	1,130	3,010	3,170	11,300	5,530	4,430	5,490	1,040	441	2,950
8	310	5,190	1,070	2,510	2,390	7,610	11,400	4,470	9,430	10,100	388	1,970
9	272	3,820	e1,000	2,400	1,930	9,650	10,100	4,420	5,820	11,100	704	1,410
10	257	3,010	950	2,970	1,740	8,810	9,930	14,700	4,220	13,100	4,410	1,100
11	340	2,650	957	2,660	1,560	5,750	8,590	20,700	2,900	7,100	3,940	904
12	1,240	e2,360	1,920	2,020	1,360	4,220	9,290	9,960	2,340	4,130	4,010	755
13	1,320	e4,500	2,630	1,710	e1,200	5,180	7,210	7,060	2,620	2,740	5,510	658
14	1,350	e8,400	4,850	e1,450	e1,100	15,700	4,990	5,660	4,490	1,840	2,860	627
15	1,460	e3,830	4,850	e1,250	e1,000	11,200	3,690	3,970	5,640	1,630	1,640	637
16	1,730	2,870	3,600	e1,130	e910	10,300	2,830	3,230	5,890	1,450	1,130	964
17	7,980	3,870	2,920	e1,000	828	11,500	2,250	2,510	4,120	1,060	2,630	863
18	4,630	6,090	2,360	e920	e780	11,300	1,790	2,360	5,820	834	3,120	680
19	2,830	4,610	2,130	e850	e740	10,600	1,920	3,900	4,470	729	1,670	20,400
20	2,390	6,480	10,600	e800	e1,000	9,480	1,990	3,240	4,490	679	1,030	14,300
21	2,590	5,010	12,300	e760	1,680	11,500	1,620	2,560	6,800	606	789	6,720
22	1,920	4,460	6,490	e720	5,980	8,490	1,750	2,410	4,990	518	653	3,930
23	1,420	3,960	5,200	e690	20,900	6,520	1,780	2,000	3,550	471	571	4,650
24	1,140	3,010	3,970	e660	12,500	4,820	1,660	1,890	2,460	454	494	4,210
25	971	2,800	3,560	e640	e6,830	3,900	1,430	1,860	1,750	440	420	2,600
26	1,280	2,870	3,260	e620	e5,400	3,570	1,320	1,450	1,310	386	365	1,970
27	2,640	3,290	2,480	e610	e4,000	3,340	1,240	1,280	1,060	333	570	1,710
28	2,020	3,350	2,060	e590	e3,040	2,650	1,290	1,280	904	453	1,770	2,860
29	1,890	2,720	1,740	e580	---	2,400	1,080	1,990	797	3,620	1,110	2,890
30	9,800	2,420	1,530	1,940	---	2,810	985	2,310	670	1,490	1,380	2,320
31	6,970	---	1,480	2,370	---	2,520	---	2,300	---	795	2,290	---
TOTAL	62,316	119,620	95,867	74,410	103,518	213,700	124,885	128,580	138,041	70,621	46,758	127,708
MEAN	2,010	3,987	3,092	2,400	3,697	6,894	4,163	4,148	4,601	2,278	1,508	4,257
MAX	9,800	8,430	12,300	11,500	20,900	15,700	11,400	20,700	12,000	13,100	5,510	20,400
MIN	257	1,680	950	580	740	2,400	985	1,010	670	333	365	627
CFSM	2.21	4.38	3.39	2.63	4.06	7.57	4.57	4.55	5.05	2.50	1.66	4.67
IN.	2.54	4.88	3.91	3.04	4.23	8.73	5.10	5.25	5.64	2.88	1.91	5.21

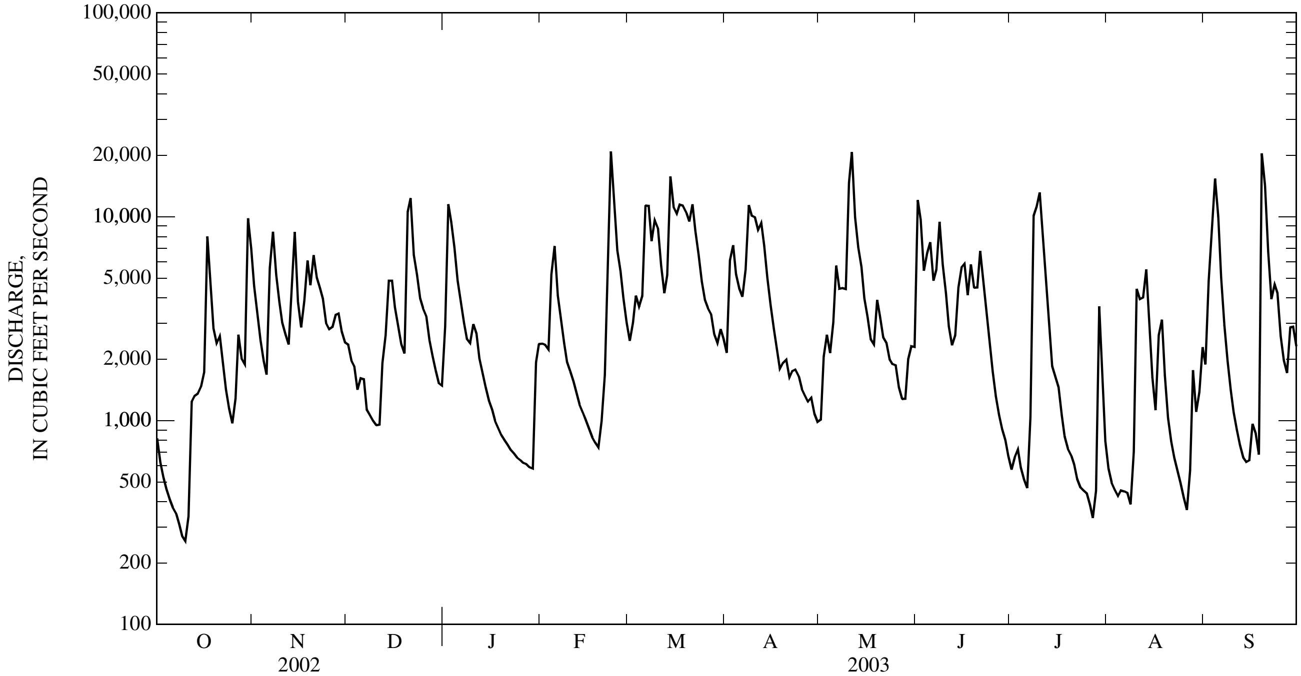
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	785	1,682	2,046	3,262	3,747	4,790	4,503	3,097	2,380	1,785	828	1,262
MAX	2,010	3,987	3,092	5,751	5,499	6,894	5,929	4,425	4,601	3,879	1,508	4,257
(WY)	(2003)	(2003)	(2003)	(1998)	(2000)	(2003)	(2002)	(2002)	(2003)	(2001)	(2003)	(2003)
MIN	142	156	797	1,382	1,524	3,340	4,107	1,588	254	126	93.6	210
(WY)	(2002)	(2002)	(1999)	(2000)	(2002)	(2000)	(1998)	(1999)	(1999)	(1999)	(1999)	(1999)

03069870 CHEAT RIVER AT HWY 50 NEAR ROWLESBURG, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	943,636		1,306,024			
ANNUAL MEAN	2,585		3,578		2,505	
HIGHEST ANNUAL MEAN					3,578	2003
LOWEST ANNUAL MEAN					1,759	1999
HIGHEST DAILY MEAN	22,800	Apr 22	20,900	Feb 23	33,200	Feb 19, 2000
LOWEST DAILY MEAN	49	Sep 14	257	Oct 10	38	Aug 25, 1999
ANNUAL SEVEN-DAY MINIMUM	55	Sep 11	331	Oct 5	47	Aug 21, 1999
MAXIMUM PEAK FLOW			32,800	Sep 19	43,800	Feb 19, 2000
MAXIMUM PEAK STAGE			13.79	Sep 19	16.02	Feb 19, 2000
INSTANTANEOUS LOW FLOW			251	Oct 10	36	Aug 25, 1999
ANNUAL RUNOFF (CFSM)	2.84		3.93		2.75	
ANNUAL RUNOFF (INCHES)	38.53		53.33		37.36	
10 PERCENT EXCEEDS	6,000		8,680		6,200	
50 PERCENT EXCEEDS	1,590		2,410		1,350	
90 PERCENT EXCEEDS	227		608		189	

e Estimated.



03070500 BIG SANDY CREEK AT ROCKVILLE, WV

LOCATION.--Lat 39°37'18", long 79°42'18", NAD27, Preston County, Hydrologic Unit 05020004, on right bank just downstream from highway bridge at Rockville, and at mile 5.0.

DRAINAGE AREA.--200 mi^2.

PERIOD OF RECORD.--May 1909 to March 1918, April 1921 to current year.

REVISED RECORDS.--WSP 583: 1912(M), 1922-23. WSP 643: Drainage area. WSP 923: 1939. WSP 1173: 1930-34(M,m). WSP 1335: 1910-18, 1921, 1922-24(M), 1928(M), 1930-43(M). WDR WV-97-1: 1922(P), 1924(P).

GAGE.--Water-stage recorder with satellite telemeter. Elevation of gage is approximately 1,310 ft above NGVD of 1929, from topographic map. Prior to Oct. 4, 1924, nonrecording gages at highway bridge at same datum.

REMARKS.--Records fair except those for periods of estimated daily discharges (no gage-height record, ice effect), which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 10, 1888, reached a stage of about 20 ft, discharge, about 30,000 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 1	1900	5,450	10.65	May 10	1200	8,360	12.36
May 9	1600	5,860	10.91	Jul 9	unknown	*9,480	(a)*12.94

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	300	322	3,000	193	465	363	391	e4,000	e82	e300	556
2	e15	223	281	2,920	159	506	685	268	e1,400	e74	e220	3,090
3	e12	168	251	1,860	135	496	557	217	e1,150	e65	e150	1,820
4	e12	139	174	1,270	890	471	474	378	e2,100	e62	e115	1,250
5	e12	135	218	870	990	681	816	853	e1,300	e110	e85	870
6	e14	727	229	678	617	1,970	737	1,090	e760	e160	e71	427
7	e15	856	180	546	e480	1,600	e1,200	734	e1,650	e280	e65	283
8	e12	519	188	484	413	1,330	e1,850	2,350	e1,400	e1,600	e80	199
9	e10	371	142	504	359	2,540	e1,400	3,730	e810	e6,600	e250	147
10	e10	297	148	589	e285	1,610	e1,000	5,820	e540	e4,000	e590	114
11	91	375	183	489	e255	1,030	718	3,070	e370	e2,000	e340	91
12	141	386	280	384	e230	809	649	1,420	e310	e1,100	e186	75
13	79	422	402	343	218	1,310	527	1,230	e1,000	e1,400	e149	69
14	53	348	1,680	322	e190	2,290	446	869	e3,000	e700	e102	64
15	44	285	1,100	264	e175	1,910	389	658	e5,800	e430	e92	66
16	125	254	804	195	e165	2,090	345	535	e1,600	e300	e78	107
17	267	850	611	e170	e155	2,050	302	419	e1,200	e210	e68	67
18	150	880	500	e155	e145	1,590	261	376	e960	e160	e60	63
19	105	780	453	e145	e135	1,090	232	312	e800	e135	e50	1,980
20	90	935	2,480	e140	e130	798	207	258	e860	e110	e45	966
21	76	653	1,770	e135	256	668	218	333	e600	e100	e44	490
22	62	514	994	e135	1,120	544	223	311	e450	e95	e36	347
23	52	422	733	e130	3,770	444	190	338	e320	e105	34	839
24	47	358	560	e125	2,040	378	161	664	e239	e115	32	630
25	42	391	527	e120	1,110	328	149	550	e195	e100	26	520
26	71	368	427	e120	778	313	147	435	e160	e71	23	570
27	96	357	346	e120	628	308	140	341	e135	e61	1,490	476
28	75	310	303	e115	526	259	122	336	e115	e140	1,150	833
29	145	282	284	e150	---	247	123	313	e100	e105	409	694
30	629	314	258	e200	---	291	156	e290	e93	e86	321	530
31	437	---	415	e230	---	291	---	e560	---	e67	285	---
TOTAL	3,018	13,219	17,243	16,908	16,547	30,707	14,787	29,449	33,417	20,623	6,946	18,233
MEAN	97.4	441	556	545	591	991	493	950	1,114	665	224	608
MAX	629	935	2,480	3,000	3,770	2,540	1,850	5,820	5,800	6,600	1,490	3,090
MIN	10	135	142	115	130	247	122	217	93	61	23	63
CFSM	0.49	2.20	2.78	2.73	2.95	4.95	2.46	4.75	5.57	3.33	1.12	3.04
IN.	0.56	2.46	3.21	3.14	3.08	5.71	2.75	5.48	6.22	3.84	1.29	3.39

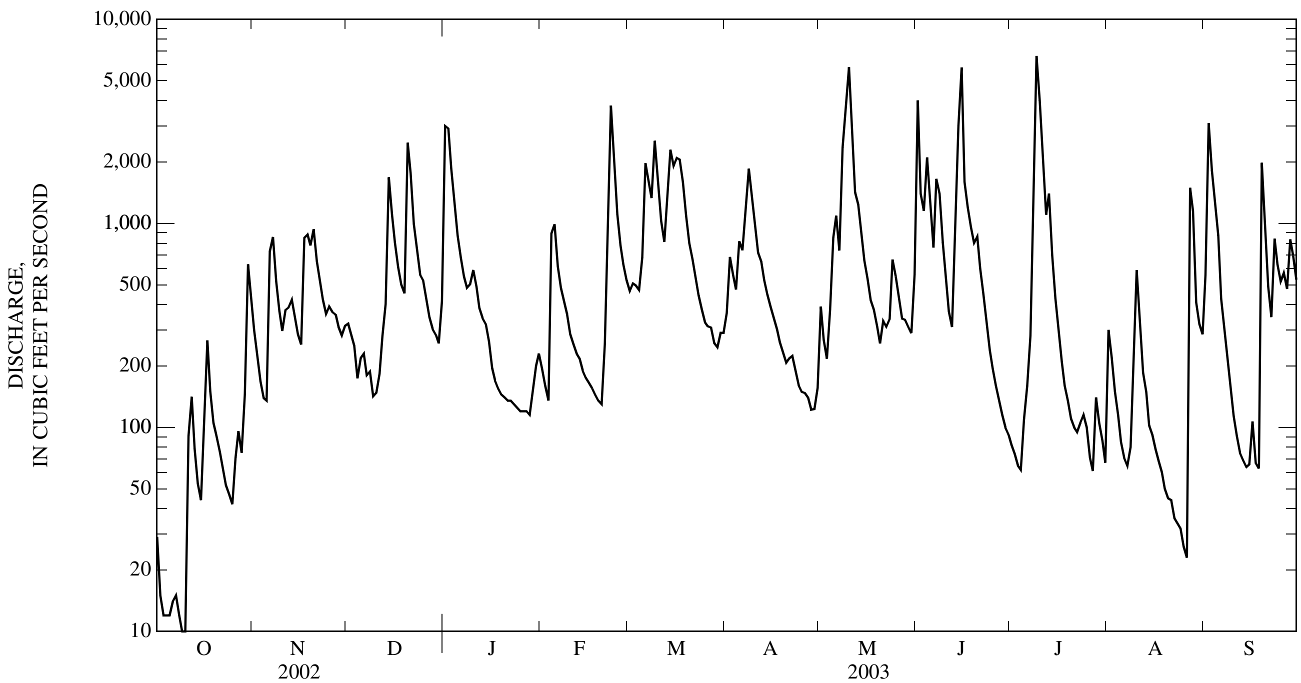
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	167	330	551	634	694	808	637	492	292	178	134	126
MAX	853	1,540	1,241	1,749	1,766	1,742	1,318	1,102	1,115	1,071	1,035	734
(WY)	(1912)	(1986)	(1973)	(1937)	(1918)	(1963)	(1940)	(1921)	(1941)	(1912)	(1956)	(1911)
MIN	0.33	2.32	39.1	81.5	106	213	207	81.7	25.0	7.93	6.05	1.13
(WY)	(1954)	(1954)	(1954)	(1977)	(1934)	(1987)	(1946)	(1926)	(1953)	(1953)	(1953)	(1953)

03070500 BIG SANDY CREEK AT ROCKVILLE, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1909 - 2003	
ANNUAL TOTAL	137,142.8		221,097			
ANNUAL MEAN	376		606		418	
HIGHEST ANNUAL MEAN					671	1912
LOWEST ANNUAL MEAN					240	1954
HIGHEST DAILY MEAN	4,500	Mar 20	(e)6,600	Jul 9	15,700	Jan 13, 1911
LOWEST DAILY MEAN	(e)5.2	Sep 15	(e)10	(b)	0.10	(c)
ANNUAL SEVEN-DAY MINIMUM	6.1	Sep 10	12	Oct 4	0.10	Oct 21, 1953
MAXIMUM PEAK FLOW			9,480	Jul 9	(d)21,300	Jul 24, 1912
MAXIMUM PEAK STAGE			(a)12.94	Jul 9	(f)18.00	Jul 24, 1912
INSTANTANEOUS LOW FLOW			(g)	(g)	0.10	(c)
ANNUAL RUNOFF (CFSM)	1.88		3.03		2.09	
ANNUAL RUNOFF (INCHES)	25.51		41.12		28.43	
10 PERCENT EXCEEDS	899		1,450		985	
50 PERCENT EXCEEDS	236		321		213	
90 PERCENT EXCEEDS	18		70		20	

a From floodmarks.
b Oct. 9, 10.
c Oct. 21-27, 1953.
d From rating curve extended above 10,000 ft^3/s on basis of velocity-area studies.
e Estimated.
f Observed.
g Undetermined.



03110830 KINGS CREEK AT WEIRTON, WV

LOCATION.--Lat 40° 26' 08", long 80° 35' 34", NAD27, Hancock County, Hydrologic Unit 05030101, at county road bridge 0.2 mi upstream from W.Va. Route 2, and at mile 1.4.

DRAINAGE AREA.--49.0 mi^2

PERIOD OF RECORD. -- October 1976 to September 1978, December 2002 to September 2003.

GAGE.-- Water-stage recorder with satellite telemeter. Datum of gage is 698.34 ft above NGVD of 1929.

REMARKS.-- Records good except those for periods of estimated daily discharges (ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 1	1630	611	3.20	May 24	0230	834	3.59
Feb 4	0930	953	3.78	Jul 8	1130	1,400	4.41
May 9	1400	693	3.35	Jul 9	0100	575	3.13
May 10	1130	*1,640	*4.70	Aug 30	1030	745	3.44

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	277	47	61	35	23	80	12	21	72
2	---	---	---	236	58	99	33	21	56	11	17	113
3	---	---	---	152	53	90	31	20	75	10	61	137
4	---	---	---	114	199	93	36	18	86	25	68	145
5	---	---	---	85	97	157	217	41	71	26	42	89
6	---	---	---	68	66	168	146	36	58	15	33	63
7	---	---	---	53	52	120	206	28	70	19	30	49
8	---	---	---	51	37	140	207	89	75	466	27	40
9	---	---	---	55	e30	269	152	289	139	284	45	33
10	---	---	---	50	e26	170	117	720	92	191	201	29
11	---	---	---	38	e24	121	96	319	79	207	103	24
12	---	---	---	33	e21	105	81	182	81	119	60	21
13	---	---	---	e28	e19	151	64	136	120	78	42	19
14	---	---	---	e24	e17	156	55	100	86	56	33	19
15	---	---	---	e22	e28	132	49	91	71	44	26	26
16	---	---	---	e19	49	128	45	125	56	41	23	25
17	---	---	---	e18	95	121	41	89	61	32	21	18
18	---	---	---	e17	112	105	37	76	83	27	18	17
19	---	---	24	e16	99	87	33	61	65	25	15	156
20	---	---	83	e15	75	77	31	74	54	20	13	97
21	---	---	65	e14	55	73	48	157	44	19	12	57
22	---	---	51	e13	96	66	38	105	39	60	12	78
23	---	---	42	e13	276	56	33	138	32	49	15	190
24	---	---	35	e12	135	50	29	433	26	55	11	102
25	---	---	45	e12	84	47	28	206	23	37	8.8	76
26	---	---	43	e12	70	51	30	147	20	26	8.0	58
27	---	---	35	e11	60	44	26	113	20	26	34	74
28	---	---	32	e11	55	41	23	96	17	57	27	80
29	---	---	29	e13	---	42	23	80	14	33	15	60
30	---	---	26	e26	---	39	22	67	13	24	277	50
31	---	---	36	35	---	36	---	83	---	20	105	---
TOTAL	---	---	---	1,543	2,035	3,095	2,012	4,163	1,806	2,114	1,423.8	2,017
MEAN	---	---	---	49.8	72.7	99.8	67.1	134	60.2	68.2	45.9	67.2
MAX	---	---	---	277	276	269	217	720	139	466	277	190
MIN	---	---	---	11	17	36	22	18	13	10	8.0	17
CFSM	---	---	---	1.02	1.49	2.04	1.37	2.75	1.23	1.39	0.94	1.37
IN.	---	---	---	1.17	1.55	2.35	1.53	3.17	1.37	1.61	1.08	1.53

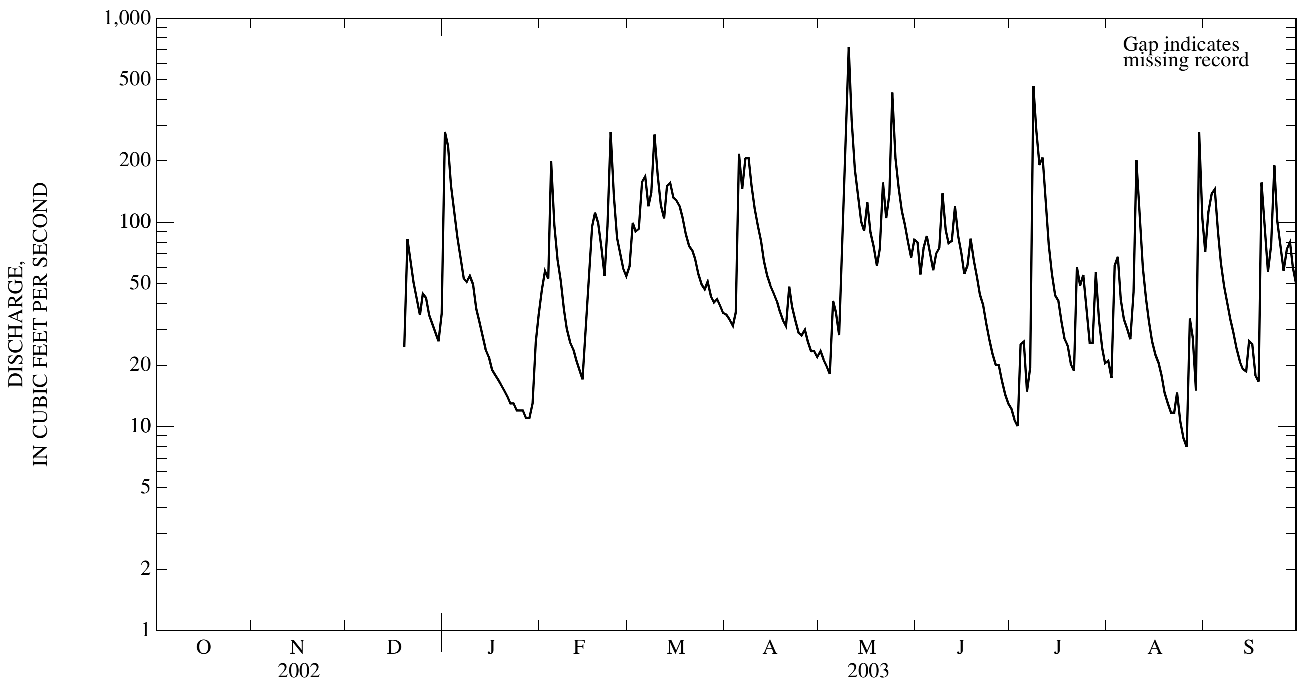
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	22.9	17.1	65.6	55.2	59.5	128	83.3	93.4	47.6	37.2	25.7	28.8
MAX	30.1	21.6	99.9	107	85.5	160	110	134	67.6	68.2	45.9	67.2
(WY)	(1977)	(1978)	(1978)	(1978)	(1977)	(1978)	(1977)	(2003)	(1978)	(2003)	(2003)	(2003)
MIN	15.6	12.7	31.3	8.29	20.2	99.8	67.1	49.8	14.9	12.7	8.56	8.86
(WY)	(1978)	(1977)	(1977)	(1977)	(1978)	(2003)	(2003)	(1977)	(1977)	(1977)	(1977)	(1978)

03110830 KINGS CREEK AT WEIRTON, WV—Continued

SUMMARY STATISTICS	WATER YEARS 1977 - 2003	
ANNUAL MEAN	51.0	
HIGHEST ANNUAL MEAN	60.8	1978
LOWEST ANNUAL MEAN	41.2	1977
HIGHEST DAILY MEAN	915	Mar 14, 1978
LOWEST DAILY MEAN	2.0	Sep 12, 1977
ANNUAL SEVEN-DAY MINIMUM	2.3	Sep 7, 1977
MAXIMUM PEAK FLOW	1,940	Jun 8, 1978
MAXIMUM PEAK STAGE	(a)5.09	May 17, 1978
INSTANTANEOUS LOW FLOW	2.0	(b)
ANNUAL RUNOFF (CFSM)	1.04	
ANNUAL RUNOFF (INCHES)	14.17	
10 PERCENT EXCEEDS	117	
50 PERCENT EXCEEDS	21	
90 PERCENT EXCEEDS	6.2	

a Backwater from debris.
b Sept. 11-13, 1977.
e Estimated.



03111950 DUNKARD FORK NEAR MAJORSVILLE, WV
(Detention Reservoir)

LOCATION.--Lat 39° 57' 10", long 80° 31' 33", NAD27, Marshall County, Hydrologic Unit 05030106.

DAM NAME.-- Wheeling Creek No. 3.

SURFACE AREA.--31 acres.

DRAINAGE AREA.--77.2 mi^2.

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

GAGE.-- Water-stage recorder with satellite telemeter. Datum of gage is 800.0 ft above NGVD of 1929.

REMARKS.-- Normal Pool = 40.4 ft (Normal Storage = 221 acre-ft)

Top of Riser = 46.4 ft

Emergency Spillway = 84.8 ft

Top of Dam = 102.4 ft

EXTREMES FOR JUNE TO SEPTEMBER 2002.--Maximum gage height, 54.68 ft, June 7; minimum gage height, 40.20 ft, Sept. 14, 15.

EXTREMES FOR CURRENT YEAR. --Maximum gage height, 58.40 ft, Feb. 23; minimum gage height, 40.43 ft, Oct. 8-10 and Aug. 26.

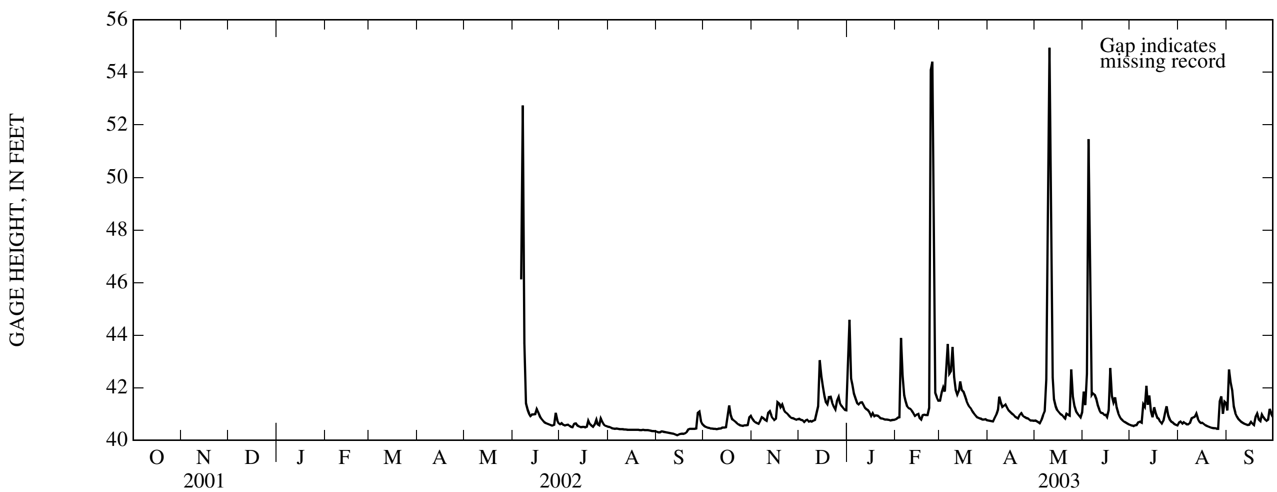
GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	40.62	40.52	40.32
2	---	---	---	---	---	---	---	---	---	40.65	40.49	40.31
3	---	---	---	---	---	---	---	---	---	40.59	40.47	40.31
4	---	---	---	---	---	---	---	---	---	40.56	40.46	40.34
5	---	---	---	---	---	---	---	---	---	40.59	40.45	40.33
6	---	---	---	---	---	---	---	---	46.12	40.60	40.46	40.32
7	---	---	---	---	---	---	---	---	52.74	40.55	40.44	40.31
8	---	---	---	---	---	---	---	---	43.70	40.52	40.44	40.30
9	---	---	---	---	---	---	---	---	41.41	40.51	40.43	40.29
10	---	---	---	---	---	---	---	---	41.18	40.64	40.43	40.27
11	---	---	---	---	---	---	---	---	41.01	40.65	40.42	40.26
12	---	---	---	---	---	---	---	---	40.93	40.56	40.42	40.24
13	---	---	---	---	---	---	---	---	40.99	40.52	40.41	40.22
14	---	---	---	---	---	---	---	---	40.99	40.51	40.41	40.20
15	---	---	---	---	---	---	---	---	41.00	40.52	40.41	40.22
16	---	---	---	---	---	---	---	---	41.20	40.51	40.40	40.25
17	---	---	---	---	---	---	---	---	41.06	40.49	40.40	40.26
18	---	---	---	---	---	---	---	---	40.91	40.51	40.41	40.25
19	---	---	---	---	---	---	---	---	40.81	40.76	40.41	40.27
20	---	---	---	---	---	---	---	---	40.74	40.62	40.41	40.32
21	---	---	---	---	---	---	---	---	40.69	40.56	40.40	40.41
22	---	---	---	---	---	---	---	---	40.65	40.52	40.40	40.45
23	---	---	---	---	---	---	---	---	40.62	40.60	40.40	40.45
24	---	---	---	---	---	---	---	---	40.60	40.78	40.40	40.44
25	---	---	---	---	---	---	---	---	40.58	40.61	40.39	40.44
26	---	---	---	---	---	---	---	---	40.56	40.57	40.39	40.45
27	---	---	---	---	---	---	---	---	40.59	40.85	40.38	41.05
28	---	---	---	---	---	---	---	---	41.05	40.71	40.38	41.10
29	---	---	---	---	---	---	---	---	40.78	40.61	40.36	40.74
30	---	---	---	---	---	---	---	---	40.66	40.55	40.35	40.62
31	---	---	---	---	---	---	---	---	---	40.53	40.34	---
MEAN	---	---	---	---	---	---	---	---	---	40.59	40.42	40.39
MAX	---	---	---	---	---	---	---	---	---	40.85	40.52	41.10
MIN	---	---	---	---	---	---	---	---	---	40.49	40.34	40.20

03111950 DUNKARD FORK NEAR MAJORSVILLE, WV- -Continued
(Detention Reservoir)

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40.56	40.83	40.82	42.77	40.81	41.51	40.76	40.76	41.85	40.58	40.68	41.14
2	40.52	40.74	40.79	44.59	40.86	41.82	40.75	40.73	41.34	40.56	40.71	42.70
3	40.50	40.69	40.77	42.36	40.89	42.02	40.73	40.69	42.53	40.55	40.64	42.21
4	40.48	40.65	40.70	42.12	43.89	41.86	40.72	40.66	51.46	40.57	40.71	41.90
5	40.45	40.63	40.76	41.77	42.46	42.73	40.86	40.78	46.18	40.59	40.65	41.29
6	40.45	40.73	40.78	41.59	41.71	43.65	40.97	40.96	41.72	40.69	40.61	41.05
7	40.45	40.88	40.71	41.42	41.51	42.53	41.16	41.10	41.80	40.72	40.61	40.90
8	40.44	40.85	40.73	41.37	41.29	42.62	41.66	42.31	41.74	40.68	40.66	40.81
9	40.44	40.79	40.72	41.45	41.22	43.55	41.43	46.98	41.59	41.39	40.83	40.75
10	40.44	40.75	40.74	41.46	41.19	42.42	41.28	54.93	41.34	41.28	40.87	40.70
11	40.45	41.06	40.78	41.36	41.12	41.92	41.32	50.61	41.16	42.08	40.90	40.66
12	40.46	41.12	41.03	41.23	41.05	41.73	41.37	42.39	41.05	41.36	41.01	40.62
13	40.49	40.94	41.29	41.19	40.93	41.88	41.24	41.56	41.05	41.71	40.82	40.60
14	40.50	40.84	43.05	41.15	40.98	42.25	41.14	41.31	40.96	41.12	40.71	40.59
15	40.50	40.78	42.45	41.07	41.00	41.92	41.08	41.15	40.98	40.88	40.66	40.60
16	40.93	40.83	42.03	40.93	40.86	41.86	41.02	41.08	40.90	41.27	40.68	40.70
17	41.33	41.47	41.68	41.04	40.80	41.69	40.97	41.00	41.15	41.03	40.62	40.63
18	40.96	41.42	41.47	40.91	40.96	41.50	40.90	40.97	42.75	40.86	40.57	40.58
19	40.81	41.25	41.38	40.96	40.98	41.37	40.86	40.89	41.68	40.82	40.54	40.89
20	40.77	41.36	41.65	40.94	40.97	41.26	40.83	40.83	41.44	40.71	40.52	41.01
21	40.72	41.17	41.66	40.91	40.96	41.19	40.97	41.02	41.63	40.64	40.49	40.80
22	40.66	41.09	41.45	40.84	41.24	41.10	41.04	40.98	41.25	40.74	40.48	40.73
23	40.61	41.04	41.30	40.83	54.09	41.01	40.95	40.94	41.04	41.04	40.47	41.00
24	40.58	40.97	41.19	40.81	54.41	40.94	40.89	42.69	40.91	41.29	40.47	40.89
25	40.56	40.91	41.51	40.80	44.62	40.87	40.86	41.67	40.82	40.95	40.45	40.79
26	40.56	40.86	41.65	40.79	41.81	40.85	40.85	41.31	40.75	40.79	40.44	40.74
27	40.58	40.84	41.44	40.78	41.63	40.83	40.81	41.11	40.71	40.71	41.48	40.78
28	40.58	40.81	41.32	40.76	41.52	40.80	40.76	41.02	40.67	40.67	41.67	41.20
29	40.59	40.79	41.24	40.77	---	40.80	40.76	40.93	40.64	40.63	41.01	41.03
30	40.88	40.81	41.16	40.79	---	40.81	40.74	40.86	40.61	40.60	41.48	40.90
31	40.94	---	41.15	40.78	---	40.78	---	41.06	---	40.57	41.42	---
MEAN	40.62	40.93	41.27	41.31	42.35	41.68	40.99	42.11	41.79	40.91	40.77	40.97
MAX	41.33	41.47	43.05	44.59	54.41	43.65	41.66	54.93	51.46	42.08	41.67	42.70
MIN	40.44	40.63	40.70	40.76	40.80	40.78	40.72	40.66	40.61	40.55	40.44	40.58



03112000 WHEELING CREEK AT ELM GROVE, WV

LOCATION.--Lat 40°02'40", long 80°39'40", NAD27, Ohio County, Hydrologic Unit 05030106, on right bank at highway bridge at Elm Grove, 500 ft downstream from Little Wheeling Creek, and at mile 7.8.

DRAINAGE AREA.--281 mi^2.

PERIOD OF RECORD.--October 1940 to current year. Monthly discharge only for October 1940, published in WSP 1907.

REVISED RECORDS.--WSP 1305: 1941(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 667.59 ft above NGVD of 1929.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor. The flow from 205 mi^2 upstream from station is partially controlled, but not diverted, by seven floodwater detention reservoirs with a total combined detention capacity of 24,148 acre-ft. Cummulative detention as construction progressed 1975 to 1995.

PEAK DISCHARGES FOR CURRENT YEAR.--Maximum discharge, 5,720 ft^3/s, Feb. 23, gage height, 6.01 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	116	120	1,490	142	618	167	137	975	101	63	326
2	25	78	109	2,910	148	782	157	132	738	90	86	1,340
3	19	58	94	1,640	152	1,010	144	121	808	82	90	868
4	16	48	91	1,410	1,970	881	142	111	3,390	131	82	873
5	14	46	91	950	1,750	1,580	254	147	2,680	134	88	349
6	11	70	112	718	730	2,870	309	204	1,190	101	76	207
7	9.2	126	129	537	508	1,850	467	184	1,090	111	65	153
8	7.1	132	89	459	344	1,940	1,030	455	1,180	133	73	122
9	6.1	97	e74	468	e250	3,160	732	1,770	963	251	108	101
10	6.1	87	e76	475	e210	2,020	553	3,880	716	374	286	85
11	7.6	199	81	424	e175	1,240	820	3,160	563	695	197	74
12	7.6	333	110	332	e160	972	931	1,900	558	416	207	64
13	9.2	195	258	e280	e140	999	663	1,080	570	693	160	57
14	9.2	128	1,760	e240	e125	1,420	524	766	506	311	109	54
15	9.9	95	1,630	e215	e115	1,120	446	573	433	175	81	67
16	106	121	960	e200	104	1,090	388	495	361	249	84	75
17	400	352	619	e185	122	928	338	407	396	264	76	75
18	165	543	425	e172	161	712	286	374	1,430	154	59	61
19	99	365	345	e162	280	553	253	314	919	414	50	267
20	75	423	511	e153	246	472	230	290	587	194	39	357
21	61	332	592	e143	180	430	278	606	835	127	34	185
22	47	293	419	e136	277	380	315	574	623	119	33	149
23	38	278	317	e129	4,570	319	253	490	429	192	31	215
24	29	238	245	e124	3,660	282	214	1,140	313	471	29	209
25	27	192	325	e118	2,250	254	195	856	243	240	28	149
26	34	158	552	e113	984	234	188	539	196	150	25	129
27	32	142	385	e108	768	219	178	401	171	111	399	121
28	29	123	301	e105	636	198	157	325	150	92	691	204
29	41	106	256	e103	---	195	149	278	130	79	219	217
30	86	108	214	e118	---	195	146	248	115	68	449	159
31	176	---	217	133	---	181	---	331	---	59	644	---
TOTAL	1,639.0	5,582	11,507	14,750	21,157	29,104	10,907	22,288	23,258	6,781	4,661	7,312
MEAN	52.9	186	371	476	756	939	364	719	775	219	150	244
MAX	400	543	1,760	2,910	4,570	3,160	1,030	3,880	3,390	695	691	1,340
MIN	6.1	46	74	103	104	181	142	111	115	59	25	54
CFSM	0.19	0.66	1.32	1.69	2.69	3.34	1.29	2.56	2.76	0.78	0.54	0.87
IN.	0.22	0.74	1.52	1.95	2.80	3.85	1.44	2.95	3.08	0.90	0.62	0.97

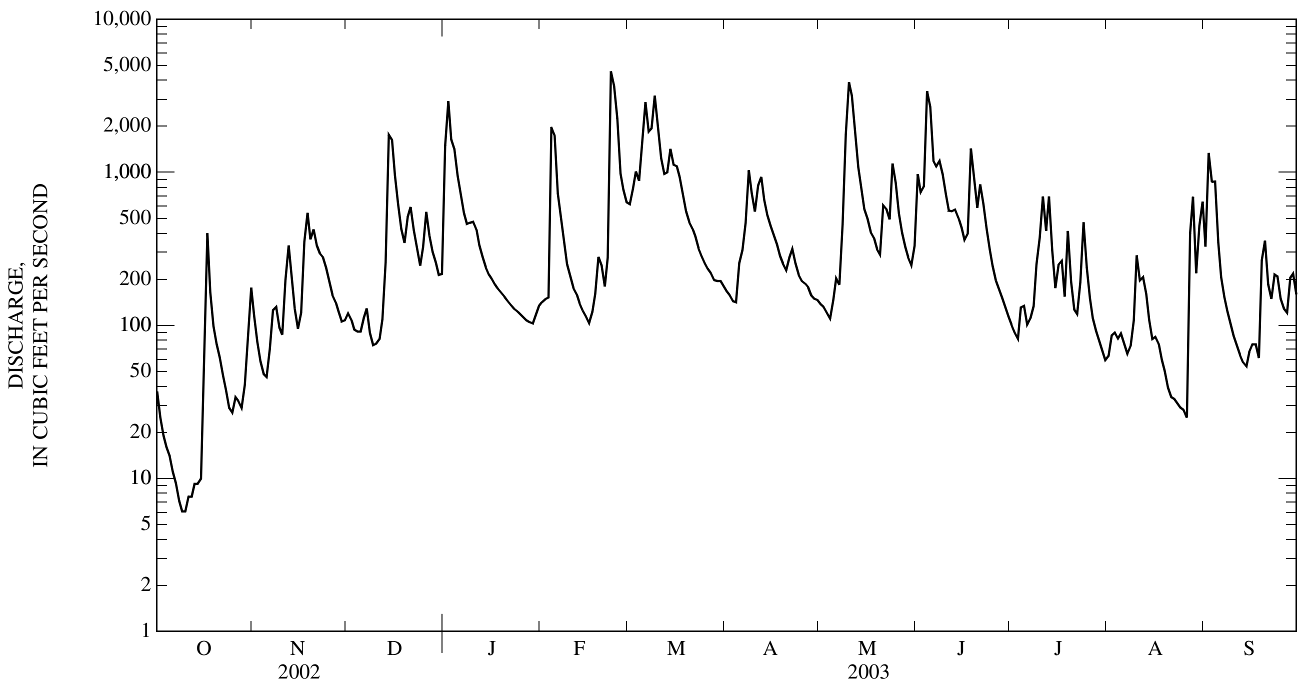
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	77.1	194	367	490	603	732	581	428	240	145	100	83.8
MAX	627	2,085	1,369	1,124	1,249	1,670	1,336	1,107	1,004	885	1,424	1,012
(WY)	(1991)	(1986)	(1991)	(1994)	(1975)	(1963)	(1961)	(1967)	(1981)	(1956)	(1980)	(1975)
MIN	0.53	1.89	5.45	21.4	85.0	126	115	66.0	16.1	3.90	2.06	0.88
(WY)	(1964)	(1964)	(1964)	(1967)	(1964)	(1969)	(1971)	(1986)	(1962)	(1962)	(1957)	(1966)

03112000 WHEELING CREEK AT ELM GROVE, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1941 - 2003	
ANNUAL TOTAL	121,576.5		158,946.0			
ANNUAL MEAN	333		435		336	
HIGHEST ANNUAL MEAN					580	1943
LOWEST ANNUAL MEAN					112	1954
HIGHEST DAILY MEAN	3,490	Jun 7	4,570	Feb 23	13,100	Dec 30, 1942
LOWEST DAILY MEAN	1.5	(a)	6.1	(b)	0.10	(c)
ANNUAL SEVEN-DAY MINIMUM	2.1	Sep 8	7.6	Oct 7	0.24	Sep 21, 1964
MAXIMUM PEAK FLOW			5,720	Feb 23	(d)22,100	Dec 30, 1942
MAXIMUM PEAK STAGE			6.01	Feb 23	13.67	Dec 30, 1942
INSTANTANEOUS LOW FLOW			6.1	(f)	0.10	(g)
ANNUAL RUNOFF (CFSM)	1.19		1.55		1.19	
ANNUAL RUNOFF (INCHES)	16.09		21.04		16.22	
10 PERCENT EXCEEDS	817		1,000		827	
50 PERCENT EXCEEDS	151		209		135	
90 PERCENT EXCEEDS	9.7		59		10	

a Sept. 13, 14.
b Oct. 9, 10.
c Sept. 26, 27, 1964.
d From rating curve extended above 15,000 ft^3/s on basis of slope-area measurements at gage heights 13.20 ft and 13.65 ft.
e Estimated.
f Oct. 9-11.
g Oct. 7, 1963, Sept. 26, 27, 1964.



03151400 LITTLE KANAWHA RIVER NEAR WILDCAT, WV

LOCATION.--Lat 38°44'36", long 80°31'32", NAD27, Braxton County, Hydrologic Unit 05030203, on right bank on State Secondary Route 24/1, 200 ft upstream from footbridge at Gregory, 3.9 mi west of Wildcat, and at mile 141.

DRAINAGE AREA.--112 mi^2.

PERIOD OF RECORD.--December 1973 to September 1983, October 1985 to current year.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 850.00 ft above NGVD of 1929.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,200 ft^3/s and maximum (*).

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	2200	2,700	8.88	Aug 17	0700	*5,860	*11.82
Feb 23	0900	3,630	9.89	Sep 2	2100	3,560	9.82
May 10	2400	5,350	11.42				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	238	204	177	431	299	217	156	901	31	53	234
2	18	170	171	321	373	394	646	356	574	58	43	1,380
3	15	124	151	832	358	441	471	255	352	47	35	1,570
4	13	97	119	925	958	378	323	201	377	60	39	1,240
5	12	85	128	522	723	333	273	226	362	45	386	852
6	11	315	134	394	407	359	218	289	266	36	196	399
7	9.7	546	113	312	303	326	280	240	808	40	126	240
8	9.1	310	e102	277	226	269	395	200	915	131	120	174
9	8.4	203	e94	266	180	239	589	191	447	331	116	130
10	8.8	159	105	292	e157	201	599	1,600	265	414	185	100
11	14	163	245	277	e130	172	567	2,620	237	250	148	72
12	53	187	581	224	e117	158	477	720	457	167	119	53
13	43	352	525	e185	e100	173	345	410	798	152	115	43
14	63	277	676	168	129	316	260	262	889	112	122	37
15	47	201	612	149	329	315	209	240	464	79	95	39
16	329	167	500	e132	1,480	271	175	250	363	56	184	79
17	438	596	397	e122	1,810	229	148	200	522	42	3,000	48
18	186	687	322	e114	882	194	144	217	588	34	793	37
19	108	466	281	e105	523	162	147	270	422	175	324	1,130
20	101	478	361	e100	484	140	126	217	1,190	101	188	977
21	129	355	405	95	637	129	136	240	1,070	62	124	414
22	105	275	319	e92	2,510	112	166	229	541	44	92	245
23	77	230	252	e88	2,930	98	172	237	306	38	70	292
24	55	213	204	e85	1,130	88	168	1,370	192	37	49	223
25	43	239	284	e82	598	79	161	513	129	29	37	171
26	42	248	358	e80	416	81	156	302	94	23	30	154
27	46	389	307	e86	320	102	169	214	73	19	31	129
28	41	377	257	104	290	88	147	178	61	34	42	143
29	75	298	215	141	---	85	139	192	47	158	36	170
30	355	247	181	461	---	114	130	304	38	79	46	165
31	298	---	164	394	---	135	---	363	---	62	128	---
TOTAL	2,775.0	8,692	8,767	7,602	18,931	6,480	8,153	13,262	13,748	2,946	7,072	10,940
MEAN	89.5	290	283	245	676	209	272	428	458	95.0	228	365
MAX	438	687	676	925	2,930	441	646	2,620	1,190	414	3,000	1,570
MIN	8.4	85	94	80	100	79	126	156	38	19	30	37
CFSM	0.80	2.59	2.53	2.19	6.04	1.87	2.43	3.82	4.09	0.85	2.04	3.26
IN.	0.92	2.89	2.91	2.52	6.29	2.15	2.71	4.40	4.57	0.98	2.35	3.63

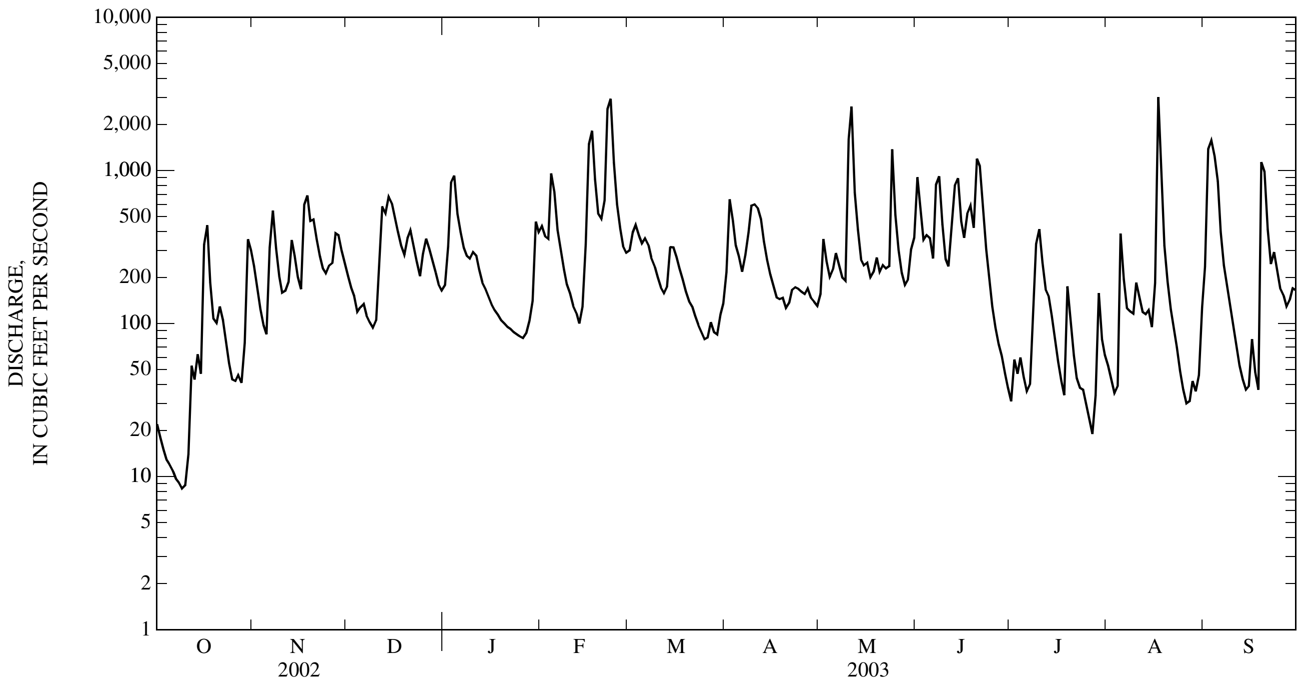
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	81.9	192	293	347	381	415	332	270	153	125	93.1	64.0
MAX	426	841	717	732	705	745	600	761	551	419	473	365
(WY)	(1977)	(1986)	(1979)	(1994)	(1994)	(1997)	(1980)	(1996)	(1981)	(1996)	(2000)	(2003)
MIN	3.70	10.7	55.5	74.5	61.8	132	105	33.7	5.03	4.31	1.41	2.14
(WY)	(1995)	(1995)	(2002)	(1977)	(1978)	(1987)	(1999)	(1991)	(1991)	(1988)	(1993)	(1995)

03151400 LITTLE KANAWHA RIVER NEAR WILDCAT, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1974 - 2003	
ANNUAL TOTAL	74,909.5		109,368.0			
ANNUAL MEAN	205		300		227	
HIGHEST ANNUAL MEAN					357	1994
LOWEST ANNUAL MEAN					134	1999
HIGHEST DAILY MEAN	3,180	Mar 20	3,000	Aug 17	9,070	Jul 31, 1996
LOWEST DAILY MEAN	1.9	Sep 14	8.4	Oct 9	0.11	Aug 17, 1987
ANNUAL SEVEN-DAY MINIMUM	2.3	Sep 9	10	Oct 4	0.14	Aug 15, 1987
MAXIMUM PEAK FLOW			5,860	Aug 17	(a)19,600	Jul 31, 1996
MAXIMUM PEAK STAGE			11.82	Aug 17	18.47	Jul 31, 1996
INSTANTANEOUS LOW FLOW			8.1	(b)	0.11	Aug 17, 1987
ANNUAL RUNOFF (CFSM)	1.83		2.68		2.03	
ANNUAL RUNOFF (INCHES)	24.88		36.33		27.56	
10 PERCENT EXCEEDS	471		597		543	
50 PERCENT EXCEEDS	97		192		109	
90 PERCENT EXCEEDS	6.8		43		8.4	

a From slope-area measurement.
b Oct. 9, 10.
e Estimated.



03155000 LITTLE KANAWHA RIVER AT PALESTINE, WV

LOCATION.--Lat 39°03'32", long 81°23'23", NAD27, Wirt County, Hydrologic Unit 05030203, on left bank at end of Washington Street in Elizabeth, 1.0 mi upstream from Tucker Creek, 2.3 mi northeast of Palestine, 2.4 mi upstream from old lock 3, and at mile 28.4.

DRAINAGE AREA.--1,516 mi^2.

PERIOD OF RECORD.--April 1915 to September 1922 (gage heights only), July to September 1939 (fragmentary), October 1939 to current year. Monthly discharge only October 1939 to September 1941, published in WSP 1305.

REVISED RECORDS.--WSP 953: 1940(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 585.51 ft above NGVD of 1929. Prior to Feb. 17, 1950, water-stage recorders or nonrecording gages at old locks 3 and 4 at various datums. Auxiliary water-stage recorder 3.0 mi upstream from base gage at old lock 4 at datum 596.08 ft above NGVD of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow partially regulated since 1968 by five floodwater-detention reservoirs affecting 49.5 mi^2. Flow regulated since March 1979 by Burnsville Lake.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 17, 1939, reached a stage of 32.25 ft, from floodmarks at old lock 4, discharge about 53,000 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Maximum discharge, (a)42,500 ft^3/s, Feb. 23, gage height, (b)36.44 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	166	1,370	1,190	1,450	4,620	4,700	1,340	861	4,570	356	696	743
2	145	1,010	1,130	4,280	8,400	6,730	1,400	1,130	4,790	291	515	2,970
3	119	969	931	5,910	5,820	6,690	1,210	1,180	3,880	255	692	17,800
4	101	901	727	7,600	4,080	4,850	1,010	1,220	7,990	231	1,660	14,000
5	91	903	582	6,580	4,660	3,520	962	1,880	5,240	213	2,300	7,980
6	82	1,940	522	4,180	3,740	3,660	1,290	4,760	2,990	230	2,940	4,080
7	75	2,410	497	3,450	2,820	3,870	1,690	4,450	6,370	280	1,740	2,860
8	68	2,030	489	3,070	1,970	3,140	4,100	2,680	13,300	339	1,280	2,340
9	61	1,500	462	2,320	1,530	2,310	4,610	1,910	7,770	785	1,430	2,130
10	63	1,210	563	1,950	1,240	1,800	5,910	8,560	3,990	2,240	1,500	1,460
11	127	2,850	802	1,630	1,220	1,460	4,780	38,200	2,340	6,130	1,190	939
12	744	3,950	1,920	1,340	1,240	1,290	4,450	30,800	1,380	3,870	1,800	690
13	846	2,250	4,160	1,100	1,110	1,230	3,510	9,570	1,270	2,470	1,470	395
14	653	1,390	13,000	1,030	991	1,690	2,510	4,130	1,750	1,620	1,610	271
15	385	1,240	14,000	925	1,600	2,770	1,970	3,460	4,550	1,140	1,030	259
16	576	1,150	7,090	618	8,030	2,310	1,520	5,200	5,150	793	907	242
17	3,020	2,130	4,280	632	19,100	1,930	1,260	4,370	5,190	552	1,580	221
18	2,600	5,900	2,820	630	19,100	1,690	1,180	4,020	8,770	398	2,440	204
19	1,220	4,360	2,020	592	8,970	1,430	1,340	6,050	6,530	334	2,860	4,840
20	928	3,350	2,260	630	6,880	1,190	2,000	4,380	10,600	341	2,260	4,990
21	1,180	3,510	3,420	627	8,380	1,070	2,000	3,960	13,600	573	2,000	2,910
22	1,250	2,780	2,950	517	14,400	1,010	3,250	3,500	7,680	518	1,350	2,120
23	929	2,150	2,180	469	40,800	920	3,150	2,700	4,450	472	736	2,290
24	738	1,690	1,760	462	36,200	802	2,150	2,590	2,430	621	572	1,640
25	595	1,470	1,700	387	16,900	710	1,570	5,520	1,460	469	390	1,290
26	389	1,340	3,200	360	6,590	670	1,270	3,670	1,040	427	266	1,010
27	310	1,200	3,600	339	5,280	648	1,230	2,230	811	357	216	989
28	294	1,150	2,810	316	4,610	640	1,140	1,410	634	274	186	1,720
29	366	1,160	1,970	347	---	635	980	2,040	506	3,300	221	2,290
30	1,340	1,150	1,600	629	---	652	877	5,290	423	1,590	256	2,180
31	2,460	---	1,370	2,370	---	839	---	4,950	---	1,010	522	---
TOTAL	21,921	60,413	86,005	56,740	240,281	66,856	65,659	176,671	141,454	32,479	38,615	87,853
MEAN	707	2,014	2,774	1,830	8,581	2,157	2,189	5,699	4,715	1,048	1,246	2,928
MAX	3,020	5,900	14,000	7,600	40,800	6,730	5,910	38,200	13,600	6,130	2,940	17,800
MIN	61	901	462	316	991	635	877	861	423	213	186	204

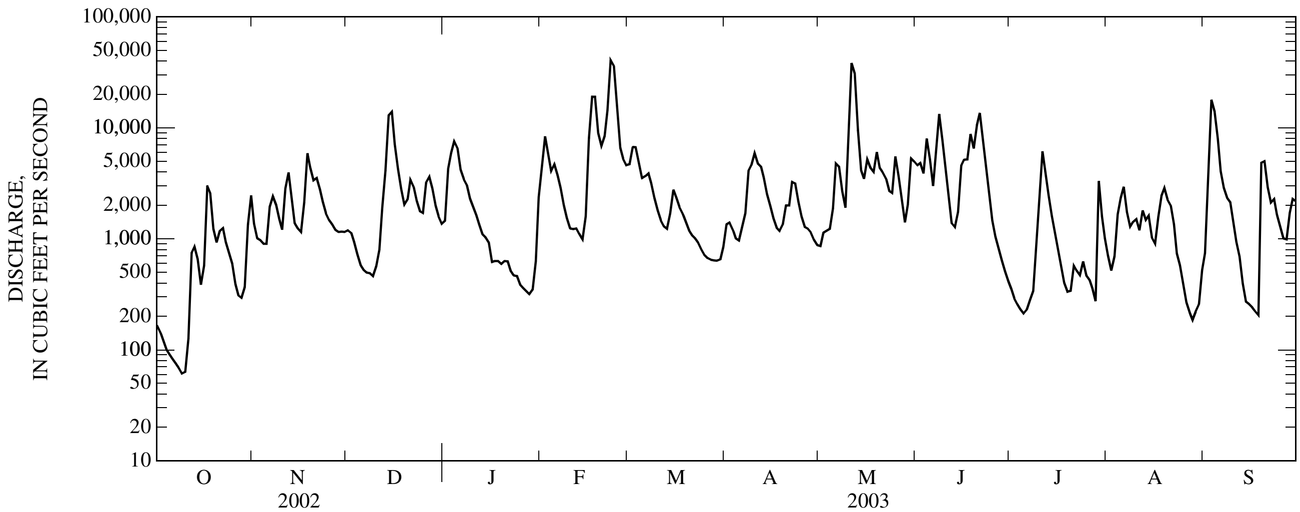
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2003, BY WATER YEAR (WY) [REGULATED, UNADJUSTED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	692	1,758	2,889	3,456	4,156	4,234	3,158	2,714	1,343	831	801	564
MAX	3,933	8,281	9,517	8,946	8,985	9,934	7,210	7,490	5,710	2,450	2,778	2,941
(WY)	(1977)	(1986)	(1979)	(1994)	(1994)	(1997)	(1972)	(1996)	(1981)	(1990)	(1996)	(1971)
MIN	75.3	137	309	444	827	873	774	243	81.3	51.1	28.5	29.2
(WY)	(1989)	(1999)	(1999)	(2000)	(2002)	(1969)	(1999)	(1982)	(1991)	(1999)	(1988)	(1999)

03155000 LITTLE KANAWHA RIVER AT PALESTINE, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1968 - 2003	
ANNUAL TOTAL	748,571		1,074,947			
ANNUAL MEAN	2,051		2,945		2,207	
HIGHEST ANNUAL MEAN					3,628	1994
LOWEST ANNUAL MEAN					1,119	1969
HIGHEST DAILY MEAN	38,100	Mar 21	40,800	Feb 23	(a)45,200	Mar 3, 1997
LOWEST DAILY MEAN	23	(b)	61	Oct 9	15	Aug 21, 1987
ANNUAL SEVEN-DAY MINIMUM	24	Sep 10	77	Oct 4	18	Jul 6, 1988
MAXIMUM PEAK FLOW			(a)42,500	Feb 23	(a)48,100	Mar 2, 1997
MAXIMUM PEAK STAGE			(c)36.44	Feb 23	(c)40.04	Mar 2, 1997
INSTANTANEOUS LOW FLOW			56	Oct 10	14	Aug 21, 1987
10 PERCENT EXCEEDS	4,740		6,080		5,620	
50 PERCENT EXCEEDS	792		1,530		906	
90 PERCENT EXCEEDS	44		352		115	

a Adjusted for backwater.
b Sept. 11-13.
c Backwater.



STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1967, BY WATER YEAR (WY) [UNREGULATED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	422	1,145	2,631	3,242	4,141	4,875	3,259	1,951	1,193	855	785	390
MAX	3,010	4,401	6,366	7,468	8,437	10,940	7,233	7,573	4,820	5,069	3,756	2,401
(WY)	(1955)	(1963)	(1943)	(1952)	(1956)	(1963)	(1948)	(1967)	(1950)	(1958)	(1958)	(1950)
MIN	6.14	2.41	84.8	552	499	1,428	677	323	50.5	14.7	9.85	14.4
(WY)	(1954)	(1954)	(1966)	(1967)	(1941)	(1966)	(1947)	(1962)	(1965)	(1966)	(1965)	(1953)

SUMMARY STATISTICS	WATER YEARS 1940 - 1967	
ANNUAL MEAN	2,065	
HIGHEST ANNUAL MEAN	3,216	1950
LOWEST ANNUAL MEAN	1,068	1966
HIGHEST DAILY MEAN	48,600	Mar 8, 1967
LOWEST DAILY MEAN	.90	Jul 15, 1959
ANNUAL SEVEN-DAY MINIMUM	1.3	Aug 30, 1965
INSTANTANEOUS PEAK FLOW	(*)50,700	Mar 7, 1967
INSTANTANEOUS PEAK STAGE	(#)39.14	Mar 7, 1967
INSTANTANEOUS LOW FLOW	(&).60	Jul 14, 1959
10 PERCENT EXCEEDS	5,440	
50 PERCENT EXCEEDS	694	
90 PERCENT EXCEEDS	56	

* From rating curve extended above 39,000 ft^3/s.
# Backwater.
& Filling pool above old lock 3.

03155405 NORTH FORK HUGHES RIVER NEAR CAIRO, WV
(Detention Reservoir)

LOCATION.--Lat 39° 13' 08", long 81° 06' 00", NAD27, Ritchie County, Hydrologic Unit 05030203.

DAM NAME.-- North Fork Hughes River 21-C.

DRAINAGE AREA.-- 92 mi^2.

PERIOD OF RECORD.--December 2002 to September 2003.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 670.0 ft above NGVD of 1929.

REMARKS.-- Normal Pool = 42.0 ft

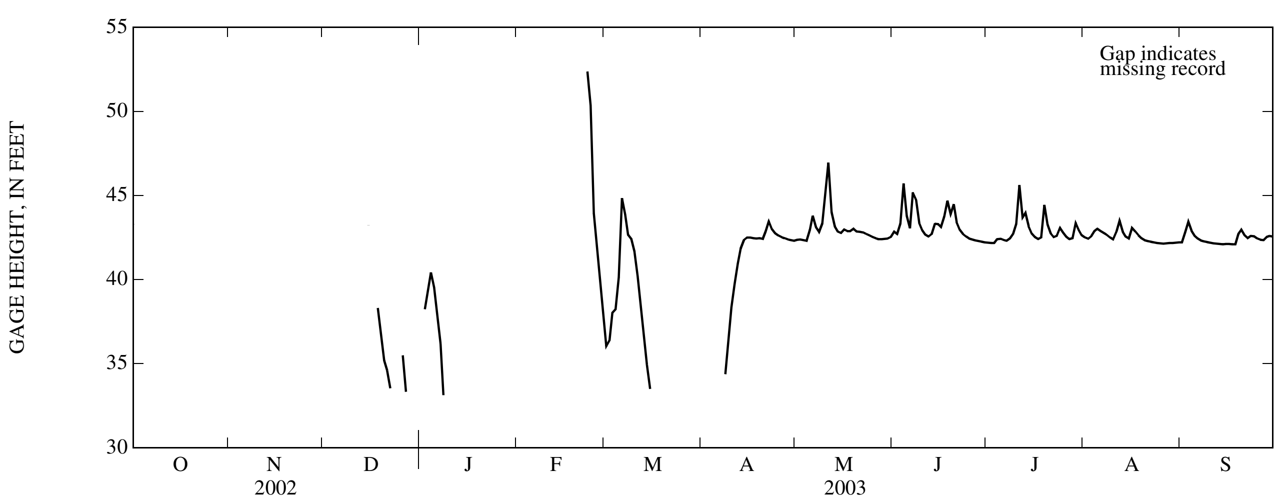
Emergency Spillway = 67.0 ft

Top of Dam = 90.0 ft

EXTREMES FOR DECEMBER 2002 TO SEPTEMBER 2003.--Maximum gage height, 55.33 ft, Feb. 23; minimum gage height, less than 33.0 ft many days December 2002 to April 2003 during initial filling of the reservoir.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	36.03	---	42.36	42.84	42.20	42.50	42.22
2	---	---	---	38.23	---	36.38	---	42.38	42.71	42.19	42.43	42.81
3	---	---	---	39.31	---	38.03	---	42.34	43.31	42.19	42.58	43.43
4	---	---	---	40.42	---	38.24	---	42.32	45.71	42.40	42.88	42.90
5	---	---	---	39.52	---	40.14	---	42.95	43.78	42.43	43.01	42.60
6	---	---	---	37.96	---	44.84	---	43.80	43.05	42.34	42.89	42.44
7	---	---	---	36.20	---	43.87	---	43.12	45.18	42.31	42.78	42.34
8	---	---	---	33.12	---	42.68	34.38	42.85	44.77	42.45	42.65	42.27
9	---	---	---	---	---	42.43	36.32	43.34	43.38	42.68	42.50	42.23
10	---	---	---	---	---	41.66	38.36	45.24	42.91	43.30	42.40	42.19
11	---	---	---	---	---	40.20	39.73	46.96	42.68	45.63	42.82	42.16
12	---	---	---	---	---	38.43	40.96	44.01	42.55	43.67	43.49	42.13
13	---	---	---	---	---	36.64	41.85	43.17	42.72	43.95	42.84	42.12
14	---	---	---	---	---	34.93	42.35	42.85	43.32	43.17	42.56	42.10
15	---	---	43.23	---	---	33.50	42.49	42.78	43.29	42.73	42.45	42.11
16	---	---	---	---	---	---	42.50	42.98	43.13	42.53	43.07	42.11
17	---	---	---	---	---	---	42.46	42.88	43.74	42.40	42.86	42.10
18	---	---	38.32	---	---	---	42.45	42.88	44.69	42.51	42.63	42.09
19	---	---	36.74	---	---	---	42.46	43.01	43.89	44.44	42.46	42.68
20	---	---	35.17	---	---	---	42.43	42.87	44.49	43.26	42.35	42.96
21	---	---	34.61	---	---	---	42.93	42.84	43.41	42.73	42.29	42.63
22	---	---	33.54	---	---	---	43.47	42.80	42.95	42.52	42.24	42.47
23	---	---	---	---	52.38	---	43.00	42.71	42.71	42.59	42.22	42.59
24	---	---	---	---	50.37	---	42.75	42.64	42.55	43.07	42.19	42.57
25	---	---	---	---	43.96	---	42.61	42.53	42.45	42.78	42.16	42.44
26	---	---	35.50	---	41.58	---	42.53	42.46	42.38	42.55	42.14	42.37
27	---	---	33.33	---	39.74	---	42.46	42.41	42.33	42.41	42.15	42.35
28	---	---	---	---	37.74	---	42.39	42.40	42.29	42.47	42.18	42.54
29	---	---	---	---	---	---	42.34	42.42	42.25	43.38	42.18	42.61
30	---	---	---	---	---	---	42.32	42.45	42.22	42.94	42.19	42.56
31	---	---	---	---	---	---	---	42.53	---	42.63	42.22	---
MEAN	---	---	---	---	---	---	---	43.01	43.26	42.87	42.53	42.44
MAX	---	---	---	---	---	---	---	46.96	45.71	45.63	43.49	43.43
MIN	---	---	---	---	---	---	---	42.32	42.22	42.19	42.14	42.09



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03159750 TUG FORK AT STATTS MILLS, WV

(Detention Reservoir)

LOCATION.--Lat 38° 44' 37", long 81° 37' 32", NAD83, Jackson County, Hydrologic Unit 05030202.

DAM NAME.--Mill Creek No. 13.

SURFACE AREA.-- 225 acres.

DRAINAGE AREA.--52.3 mi^2.

PERIOD OF RECORD.--November 2001 to current year.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 591.5 ft above NGVD of 1929.

REMARKS.-- Normal Pool = 50.7 ft (Normal storage = 2,830 acre-ft)
Top of Riser= 56.9 ft
Emergency Spillway = 79.9 ft
Top of Dam = 93.4 ft

EXTREMES FOR NOVEMBER 2001 TO SEPTEMBER 2002.--Maximum gage height, 69.30 ft, Mar. 20; minimum gage height, less than 43.77 ft, Dec. 7.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 64.25 ft, Feb. 17; minimum gage height, 46.00 ft, Oct. 10.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

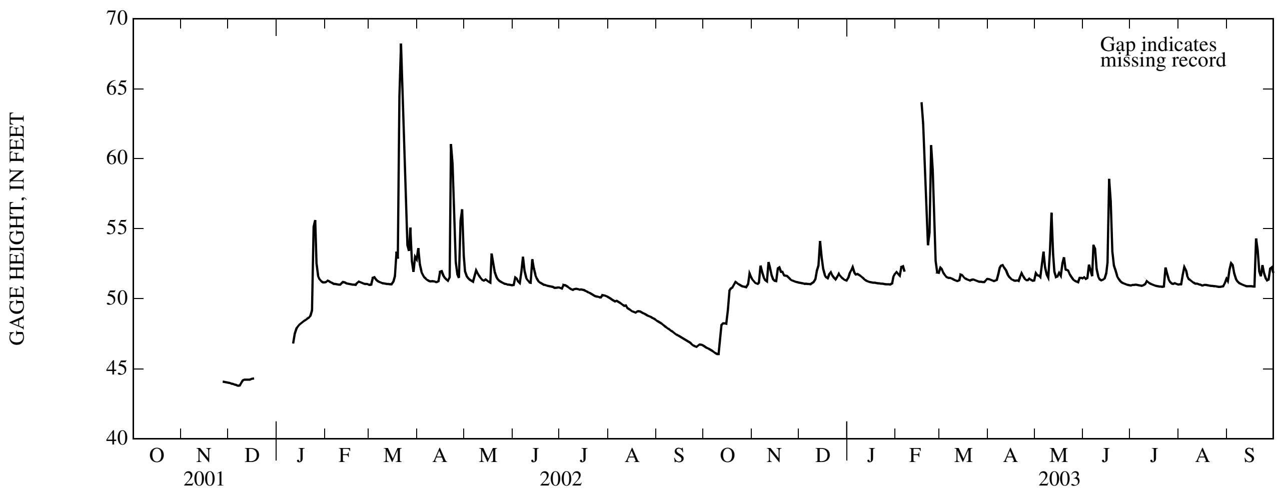
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	43.99	---	51.20	51.00	53.61	51.95	50.99	50.76	50.08	48.42
2	---	---	43.96	---	51.27	51.00	52.43	51.62	51.54	50.72	50.01	48.35
3	---	---	43.93	---	51.23	51.50	51.93	51.48	51.44	50.99	49.94	48.27
4	---	---	43.89	---	51.18	51.54	51.69	51.35	51.24	50.97	49.87	48.20
5	---	---	43.86	---	51.12	51.37	51.53	51.27	51.13	50.89	49.81	48.10
6	---	---	43.82	---	51.07	51.27	51.41	51.22	51.93	50.82	49.84	48.02
7	---	---	43.79	---	51.05	51.19	51.33	51.63	52.99	50.75	49.79	47.94
8	---	---	43.82	---	51.03	51.14	51.27	52.05	51.97	50.68	49.71	47.86
9	---	---	44.03	---	51.01	51.11	51.25	51.85	51.52	50.62	49.63	47.78
10	---	---	44.17	---	51.01	51.09	51.27	51.65	51.31	50.69	49.56	47.70
11	---	---	44.22	46.81	51.12	51.07	51.24	51.46	51.18	50.72	49.48	47.62
12	---	---	44.22	47.49	51.18	51.05	51.20	51.33	51.14	50.68	49.52	47.54
13	---	---	44.22	47.84	51.16	51.05	51.19	51.28	52.81	50.66	49.33	47.45
14	---	---	44.23	48.02	51.11	51.04	51.24	51.37	52.16	50.66	49.25	47.38
15	---	---	44.25	48.16	51.07	51.03	51.92	51.31	51.69	50.66	49.18	47.33
16	---	---	44.30	48.25	51.05	51.20	51.97	51.22	51.42	50.62	49.10	47.27
17	---	---	44.31	48.33	51.04	51.61	51.68	51.15	51.25	50.56	49.04	47.19
18	---	---	---	48.40	51.02	53.37	51.49	53.22	51.14	50.51	49.01	47.12
19	---	---	---	48.48	51.00	52.85	51.37	52.59	51.07	50.45	49.09	47.05
20	---	---	---	48.56	51.00	64.45	51.28	51.87	51.02	50.38	49.10	46.98
21	---	---	---	48.63	51.13	68.21	51.51	51.56	50.98	50.32	49.08	46.91
22	---	---	---	48.77	51.23	65.38	61.04	51.38	50.94	50.25	49.03	46.84
23	---	---	---	49.17	51.18	61.94	59.64	51.27	50.92	50.19	48.97	46.76
24	---	---	---	55.12	51.12	58.00	55.70	51.19	50.90	50.17	48.90	46.68
25	---	---	---	55.60	51.08	53.82	52.63	51.13	50.88	50.13	48.83	46.59
26	---	---	---	52.54	51.07	53.41	51.77	51.09	50.85	50.09	48.77	46.57
27	---	44.09	---	51.66	51.05	55.08	51.48	51.05	50.79	50.09	48.73	46.66
28	---	44.08	---	51.37	51.02	52.67	55.59	51.02	50.78	50.25	48.69	46.73
29	---	44.05	---	51.23	---	51.91	56.39	51.01	50.80	50.24	48.62	46.72
30	---	44.03	---	51.17	---	53.00	53.10	50.98	50.81	50.20	48.56	46.66
31	---	---	---	51.17	---	52.83	---	50.96	---	50.14	48.49	---
MEAN	---	---	---	---	51.10	53.78	52.70	51.47	51.32	50.51	49.26	47.36
MAX	---	---	---	---	51.27	68.21	61.04	53.22	52.99	50.99	50.08	48.42
MIN	---	---	---	---	51.00	51.00	51.19	50.96	50.78	50.09	48.49	46.57

MILL CREEK BASIN

03159750 TUG FORK AT STATTS MILLS, WV- -Continued
(Detention Reservoir)

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46.60	51.34	51.15	51.48	51.90	52.22	51.40	51.83	51.54	50.95	51.05	51.28
2	46.54	51.20	51.12	51.84	51.77	52.10	51.36	51.67	51.39	50.99	51.03	52.05
3	46.47	51.11	51.09	52.03	51.66	51.84	51.30	51.64	51.46	50.99	51.73	52.53
4	46.41	51.07	51.06	52.24	52.27	51.64	51.26	51.54	52.43	51.01	52.30	52.42
5	46.36	51.14	51.08	51.87	52.30	51.53	51.30	52.45	52.01	50.99	52.06	51.78
6	46.28	52.35	51.07	51.72	51.92	51.50	51.32	53.36	51.62	50.96	51.64	51.42
7	46.21	51.90	51.05	51.76	---	51.50	51.75	52.23	53.84	50.93	51.40	51.24
8	46.13	51.53	51.04	51.69	---	51.45	52.17	51.75	53.60	50.92	51.32	51.13
9	46.06	51.33	51.11	51.63	---	51.39	52.35	51.50	52.11	50.97	51.23	51.06
10	46.04	51.24	51.17	51.53	---	51.33	52.40	53.34	51.61	51.03	51.15	51.01
11	46.96	52.60	51.36	51.42	---	51.28	52.19	56.12	51.39	51.27	51.09	50.97
12	48.12	52.17	51.98	51.32	---	51.25	52.03	53.18	51.31	51.19	51.07	50.93
13	48.24	51.66	52.35	51.26	---	51.31	51.75	51.92	51.35	51.10	51.04	50.91
14	48.25	51.41	54.12	51.22	---	51.73	51.56	51.53	51.45	51.03	51.00	50.89
15	48.23	51.27	52.96	51.20	---	51.67	51.44	51.59	51.81	50.98	50.97	50.89
16	49.17	51.25	52.10	51.18	---	51.54	51.36	51.85	52.59	50.95	50.94	50.89
17	50.55	52.15	51.70	51.16	64.02	51.45	51.30	51.65	58.55	50.92	50.98	50.88
18	50.73	52.23	51.54	51.14	62.52	51.39	51.30	52.50	56.95	50.89	51.00	50.87
19	50.78	51.92	51.46	51.12	59.61	51.32	51.31	52.94	53.38	50.88	50.97	54.30
20	50.98	51.93	51.77	51.11	56.53	51.28	51.27	52.08	52.36	50.86	50.94	53.47
21	51.19	51.68	51.90	51.10	53.81	51.36	51.55	52.06	52.01	50.86	50.92	51.94
22	51.12	51.65	51.66	51.09	54.74	51.38	51.83	51.99	51.64	50.87	50.91	51.60
23	51.03	51.63	51.49	51.08	60.96	51.33	51.60	51.73	51.41	52.22	50.90	52.40
24	50.96	51.51	51.38	51.05	59.19	51.29	51.43	51.53	51.27	51.80	50.89	51.82
25	50.91	51.39	51.57	51.04	55.68	51.25	51.33	51.38	51.17	51.41	50.87	51.46
26	50.87	51.30	51.79	51.03	52.69	51.22	51.32	51.28	51.10	51.20	50.85	51.30
27	50.85	51.26	51.63	51.04	51.88	51.21	51.45	51.21	51.05	51.09	50.85	51.34
28	50.83	51.22	51.50	51.02	51.86	51.19	51.36	51.16	51.01	51.07	50.87	52.15
29	51.01	51.19	51.41	51.08	---	51.18	51.29	51.48	50.98	51.11	50.89	52.26
30	51.84	51.17	51.34	51.55	---	51.31	51.31	51.49	50.96	51.06	51.12	51.83
31	51.55	---	51.29	51.76	---	51.42	---	51.44	---	51.02	51.45	---
MEAN	48.94	51.56	51.59	51.38	---	51.45	51.55	52.05	52.18	51.08	51.14	51.63
MAX	51.84	52.60	54.12	52.24	---	52.22	52.40	56.12	58.55	52.22	52.30	54.30
MIN	46.04	51.07	51.04	51.02	---	51.18	51.26	51.16	50.96	50.86	50.85	50.87



KANAWHA RIVER BASIN

03176500 NEW RIVER AT GLEN LYN, VA

LOCATION.--Lat 37°22'22", long 80°51'38", NAD83, Giles County, Hydrologic Unit 05050002, on right bank 90 ft upstream from bridge on U.S. Highway 460 at Glen Lyn, 0.3 mi upstream from East River, and 6.3 mi downstream from Wolf Creek.

DRAINAGE AREA.--3,768 mi^2.

PERIOD OF RECORD.--August 1927 to current year.

REVISED RECORDS.--WSP 758: Drainage area. WSP 1305: 1928(M), 1930(M).

GAGE.--Water-stage recorder. Datum of gage is 1,490.11 ft NGVD of 1929. Aug. 11, 1927, to Oct. 16, 1934, on left bank opposite present site at same datum, and Oct. 17, 1934, to June 16, 1939, on left bank at site 200 ft upstream at same datum.

REMARKS.--Records good except for period of doubtful gage-height record, Sept. 27-29, which is fair. Flow regulated since 1939 by Claytor Reservoir (station 03169000) 55 mi upstream from station. Statistics of monthly mean data and summary statistics for water years 1928-1938 (unregulated flow) are available in previous data books, water years 1991-1998. Water withdrawn by American Electric Power at gage. U.S. Army Corps of Engineers satellite gage-height telemeter at station. Maximum discharge, 226,000 ft^3/s, from rating curve extended above 89,000 ft^3/s on basis of slope-area measurement of peak flow. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,800	5,500	2,440	7,120	4,210	10,400	6,810	5,570	6,650	6,810	6,360	6,160
2	2,620	5,810	2,350	8,440	2,200	8,930	8,290	6,990	5,780	11,100	6,090	6,370
3	1,980	2,160	2,610	9,740	2,660	10,000	9,580	6,900	5,530	29,300	6,390	5,510
4	1,810	1,870	2,810	11,100	4,920	9,960	8,990	6,340	5,790	26,400	7,930	5,630
5	1,420	2,920	3,820	8,640	6,170	9,840	8,400	6,820	5,890	14,700	8,070	7,790
6	1,300	2,910	4,330	6,690	6,160	10,000	6,070	6,720	5,970	11,100	7,250	6,100
7	1,200	4,180	4,730	7,010	6,400	9,090	6,320	6,940	6,610	12,100	6,980	4,170
8	1,190	4,780	2,990	6,550	5,530	7,780	8,060	6,980	12,000	11,300	11,400	4,560
9	1,210	3,970	1,910	6,330	2,370	5,720	13,700	6,460	17,800	10,300	13,100	4,070
10	1,180	2,910	3,780	6,080	2,230	6,510	17,700	6,320	14,200	8,150	14,200	3,970
11	1,300	3,430	4,830	5,800	4,100	7,620	36,800	5,940	10,600	8,420	12,700	3,250
12	1,340	9,150	7,110	3,110	4,640	6,230	31,700	5,980	11,600	7,720	11,600	3,320
13	1,540	14,200	8,680	2,910	4,270	6,470	20,300	5,470	15,100	6,610	10,200	4,000
14	1,600	10,200	12,700	5,080	3,830	6,480	14,700	4,910	12,700	7,010	8,980	2,880
15	1,600	7,430	12,700	4,490	5,640	6,060	12,000	4,460	13,400	6,550	7,930	3,320
16	3,810	7,730	9,440	4,780	18,400	3,010	10,000	5,470	15,300	5,970	7,700	3,440
17	4,320	8,550	8,310	3,510	19,500	4,360	9,220	6,230	17,300	5,320	8,140	3,980
18	5,430	12,300	7,610	3,320	13,700	9,260	8,530	8,220	17,500	5,170	8,800	3,990
19	4,410	9,090	5,870	2,120	10,600	7,990	14,900	10,900	21,000	5,170	7,020	5,310
20	2,970	6,640	7,240	2,020	10,100	9,840	16,300	8,700	25,300	5,040	5,840	5,490
21	1,660	5,830	10,900	2,930	11,600	13,300	14,700	7,590	17,000	4,390	5,370	3,900
22	1,980	7,460	8,730	2,550	33,200	12,400	11,100	7,630	12,400	4,540	4,940	3,220
23	1,610	7,330	7,430	3,260	74,000	9,650	10,300	7,160	9,840	5,950	5,440	4,620
24	1,420	4,860	7,070	5,370	37,700	7,190	8,990	6,740	8,280	5,960	4,520	7,850
25	1,580	3,220	11,800	4,860	21,300	7,860	8,780	6,350	7,680	4,780	4,300	6,300
26	2,490	5,370	11,600	1,990	16,100	8,060	8,010	6,570	6,730	4,430	4,320	4,840
27	1,720	5,550	10,100	1,830	14,600	6,700	6,770	6,630	6,190	3,980	3,710	e4,300
28	1,540	4,780	7,910	4,160	12,400	7,150	7,150	6,290	5,820	3,650	4,010	e4,500
29	3,770	2,710	4,530	2,740	---	6,470	6,840	6,180	5,790	4,120	4,020	e6,600
30	4,760	2,550	4,920	2,640	---	4,550	6,030	5,970	5,770	8,430	3,710	5,560
31	5,430	---	6,120	3,790	---	5,130	---	5,580	---	7,070	4,380	---
TOTAL	72,990	175,390	207,370	150,960	358,530	244,010	357,040	205,010	331,520	261,540	225,400	145,000
MEAN	2,355	5,846	6,689	4,870	12,800	7,871	11,900	6,613	11,050	8,437	7,271	4,833
MAX	5,430	14,200	12,700	11,100	74,000	13,300	36,800	10,900	25,300	29,300	14,200	7,850
MIN	1,180	1,870	1,910	1,830	2,200	3,010	6,030	4,460	5,530	3,650	3,710	2,880
(†)	-1,765	+857	-1,160	-907	-1,765	+3,529	+454	0	+202	0	+252	-101
MEAN‡	2,298	5,875	6,652	4,840	12,740	7,985	11,920	6,613	11,060	8,437	7,279	4,830
CFSM‡	.61	1.56	1.77	1.28	3.38	2.12	3.16	1.76	2.94	2.24	1.93	1.28
IN.‡	.70	1.74	2.04	1.48	3.52	2.44	3.53	2.02	3.27	2.58	2.23	1.43

CAL YR 2002 MEAN‡ 3,368 CFSM‡ .89 IN.‡ 12.14
WTR YR 2003 MEAN‡ 7,491 CFSM‡ 1.99 IN.‡ 27.00

† Total change in contents, equivalent in cubic feet per second, per month, in Claytor Reservoir; provided by American Electric Power.
‡ Adjusted for monthly change in contents.

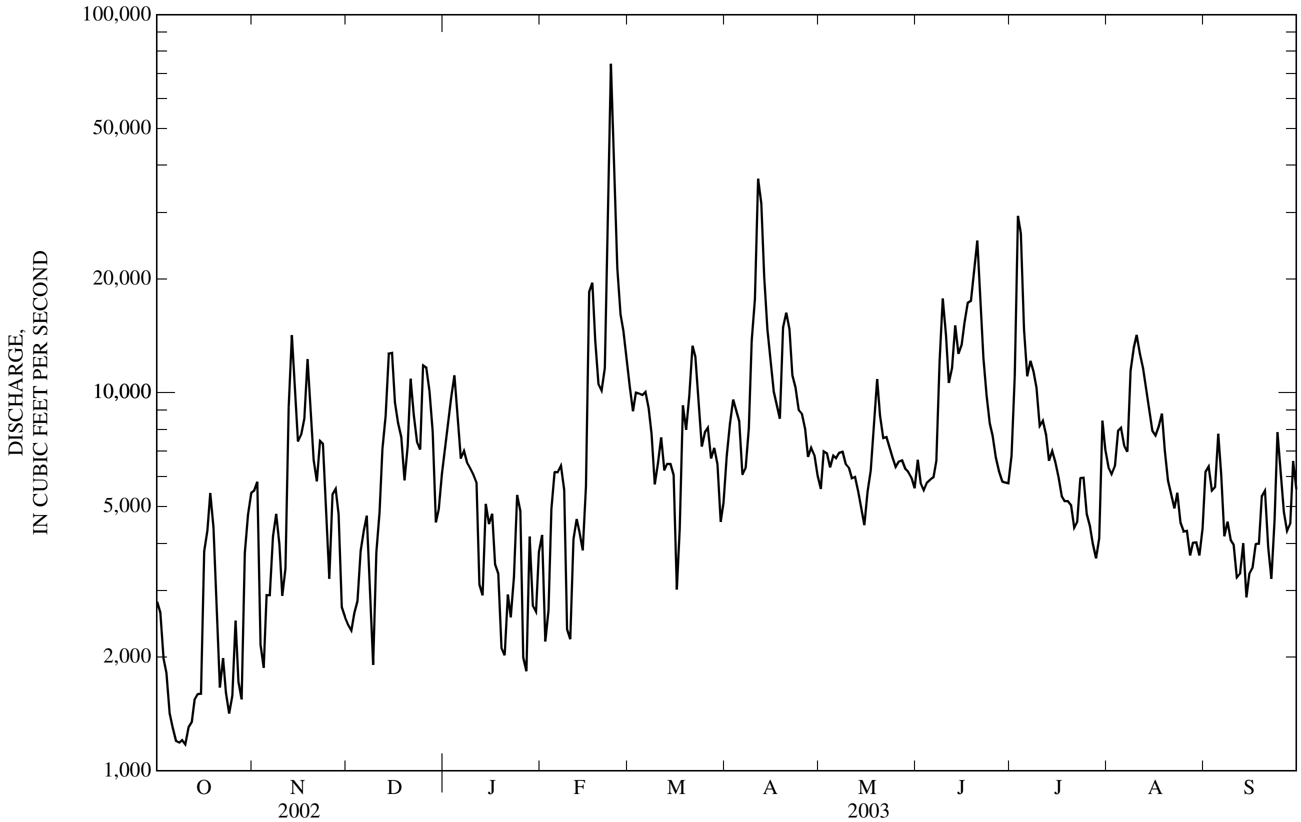
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3,110	3,671	4,588	5,816	7,387	8,277	7,386	5,967	4,477	3,321	3,192	2,826
MAX	9,882	12,450	10,910	13,290	15,810	18,650	20,890	11,270	12,860	9,784	16,410	11,500
(WY)	(1990)	(1978)	(1949)	(1996)	(1957)	(1993)	(1987)	(1984)	(1992)	(1949)	(1940)	(1989)
MIN	1,204	1,258	1,305	1,489	2,285	2,407	2,673	2,397	1,373	1,390	1,040	1,127
(WY)	(1989)	(1982)	(1998)	(1966)	(2002)	(1988)	(1986)	(1941)	(1999)	(1988)	(2002)	(1998)

03176500 NEW RIVER AT GLEN LYN, VA—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939 - 2003	
ANNUAL TOTAL	1,231,070		2,734,760			
ANNUAL MEAN	3,373		7,492		4,988	
HIGHEST ANNUAL MEAN					7,492	2003
LOWEST ANNUAL MEAN					2,511	2002
HIGHEST DAILY MEAN	37,900	Mar 19	74,000	Feb 23	126,000	Aug 15, 1940
LOWEST DAILY MEAN	831	Sep 11	1,180	Oct 10	a557	Aug 19, 1999
ANNUAL SEVEN-DAY MINIMUM	876	Sep 8	1,250	Oct 6	646	Aug 13, 1999
MAXIMUM PEAK FLOW			82,700	Feb 23	b226,000	Aug 14, 1940
MAXIMUM PEAK STAGE			15.71	Feb 23	b27.50	Aug 14, 1940
INSTANTANEOUS LOW FLOW			1,130	Oct 8	a,c449	dAug 13, 1999
ANNUAL RUNOFF (CFSM)	0.90		1.99		1.32	
ANNUAL RUNOFF (INCHES)	12.15		27.00		17.99	
10 PERCENT EXCEEDS	7,280		12,700		9,630	
50 PERCENT EXCEEDS	2,170		6,290		3,630	
90 PERCENT EXCEEDS	1,050		2,620		1,510	

a Affected by withdrawals.
b Prior to regulation, 1928-38, maximum peak flow, 99,000 ft^3/s, Oct. 3, 1929, gage height, 16.75 ft.
c Prior to regulation, 1928-38, instantaneous low flow, 770 ft^3/s, Sept. 8, 1930.
d Also Aug. 19, 1999.
e Estimated.



03178150 MIDDLE FORK BRUSH CREEK AT EDISON, WV
(Detention Reservoir)

LOCATION.--Lat 37° 18' 22", long 81° 09' 54", NAD27, Mercer County, Hydrologic Unit 05050002.

DAM NAME.--Brush Creek No. 19-A.

SURFACE AREA.--68 acres.

DRAINAGE AREA.--2.05 mi^2.

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

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 2,461.0 ft above NGVD of 1929.

REMARKS.-- Normal Pool = 22.0 ft (Normal Storage = 968 acre-ft)

Top of Riser = 23.7 ft

Emergency Spillway = 28.0 ft

Top of Dam = 37.6 ft

EXTREMES FOR JUNE 2002 TO SEPTEMBER 2002.--Maximum gage height, 22.20 ft, June 6; minimum gage height, 18.63 ft, Sept. 21.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 23.64 ft, Feb. 22; minimum gage height, 17.71 ft, Oct. 15.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

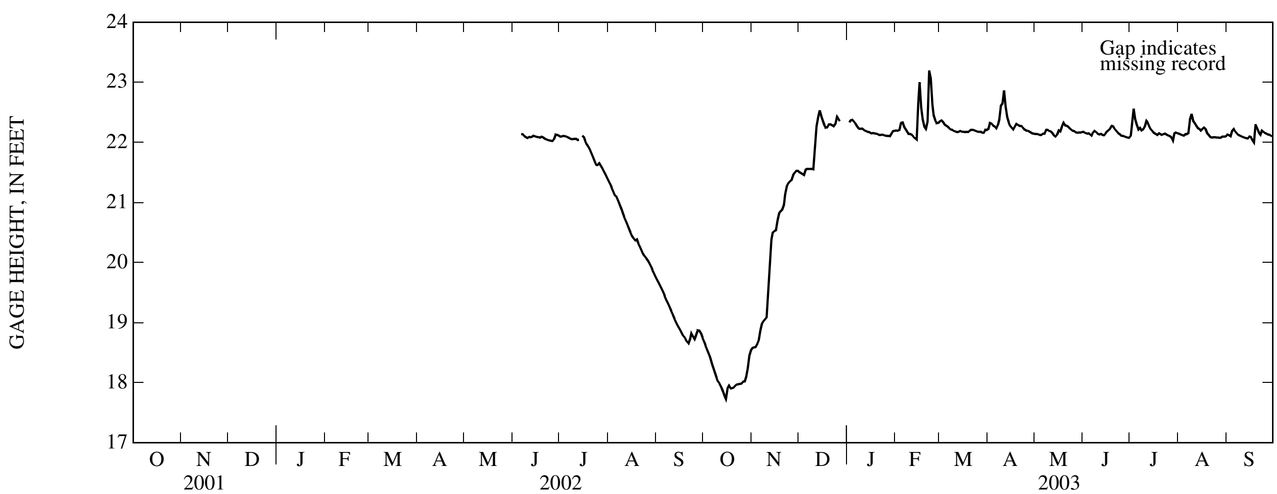
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	22.10	21.36	19.71
2	---	---	---	---	---	---	---	---	---	22.10	21.30	19.66
3	---	---	---	---	---	---	---	---	---	22.11	21.24	19.61
4	---	---	---	---	---	---	---	---	---	22.10	21.18	19.56
5	---	---	---	---	---	---	---	---	---	22.09	21.12	19.50
6	---	---	---	---	---	---	---	---	22.14	22.08	21.10	19.44
7	---	---	---	---	---	---	---	---	22.14	22.06	21.03	19.38
8	---	---	---	---	---	---	---	---	22.10	22.05	20.97	19.32
9	---	---	---	---	---	---	---	---	22.08	22.05	20.90	19.26
10	---	---	---	---	---	---	---	---	22.07	22.06	20.82	19.20
11	---	---	---	---	---	---	---	---	22.09	22.06	20.76	19.14
12	---	---	---	---	---	---	---	---	22.09	22.04	20.70	19.07
13	---	---	---	---	---	---	---	---	22.09	22.04	20.64	19.01
14	---	---	---	---	---	---	---	---	22.10	---	20.57	18.95
15	---	---	---	---	---	---	---	---	22.10	22.11	20.49	18.92
16	---	---	---	---	---	---	---	---	22.09	22.08	20.44	18.87
17	---	---	---	---	---	---	---	---	22.09	22.02	20.39	18.82
18	---	---	---	---	---	---	---	---	22.08	21.97	20.36	18.77
19	---	---	---	---	---	---	---	---	22.09	21.93	20.38	18.74
20	---	---	---	---	---	---	---	---	22.08	21.88	20.32	18.68
21	---	---	---	---	---	---	---	---	22.06	21.82	20.27	18.65
22	---	---	---	---	---	---	---	---	22.05	21.75	20.21	18.73
23	---	---	---	---	---	---	---	---	22.04	21.68	20.14	18.82
24	---	---	---	---	---	---	---	---	22.03	21.63	20.10	18.77
25	---	---	---	---	---	---	---	---	22.02	21.62	20.07	18.73
26	---	---	---	---	---	---	---	---	22.02	21.65	20.03	18.80
27	---	---	---	---	---	---	---	---	22.05	21.61	19.99	18.87
28	---	---	---	---	---	---	---	---	22.13	21.57	19.94	18.87
29	---	---	---	---	---	---	---	---	22.12	21.52	19.88	18.82
30	---	---	---	---	---	---	---	---	22.11	21.47	19.83	18.75
31	---	---	---	---	---	---	---	---	---	21.41	19.77	---
MEAN	---	---	---	---	---	---	---	---	---	---	20.53	19.05
MAX	---	---	---	---	---	---	---	---	---	---	21.36	19.71
MIN	---	---	---	---	---	---	---	---	---	---	19.77	18.65

03178150 MIDDLE FORK BRUSH CREEK AT EDISON, WV--Continued

(Detention Reservoir)

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.68	18.57	21.50	---	22.20	22.35	22.22	22.14	22.18	22.11	22.14	22.13
2	18.62	18.59	21.49	22.33	22.19	22.36	22.32	22.14	22.16	22.34	22.13	22.11
3	18.55	18.60	21.47	22.37	22.20	22.34	22.31	22.13	22.14	22.56	22.12	22.10
4	18.49	18.64	21.46	22.37	22.33	22.29	22.28	22.12	22.15	22.38	22.11	22.19
5	18.41	18.70	21.54	22.34	22.33	22.28	22.26	22.12	22.13	22.29	22.14	22.23
6	18.32	18.86	21.56	22.31	22.26	22.26	22.23	22.15	22.11	22.22	22.13	22.17
7	18.24	18.97	21.56	22.27	22.22	22.23	22.29	22.14	22.16	22.24	22.15	22.14
8	18.16	19.02	21.56	22.23	22.18	22.21	22.37	22.21	22.19	22.20	22.38	22.12
9	18.08	19.05	21.56	22.22	22.14	22.21	22.60	22.21	22.17	22.21	22.47	22.11
10	18.01	19.08	21.55	22.23	22.14	22.19	22.64	22.19	22.14	22.26	22.36	22.09
11	17.99	19.53	21.88	22.21	22.12	22.17	22.86	22.17	22.13	22.36	22.32	22.08
12	17.94	19.99	22.27	22.19	22.09	22.17	22.59	22.15	22.14	22.33	22.28	22.07
13	17.87	20.38	22.41	22.18	22.07	22.17	22.42	22.12	22.12	22.27	22.24	22.07
14	17.79	20.50	22.53	22.17	22.05	22.19	22.32	22.10	22.12	22.22	22.22	22.06
15	17.73	20.52	22.43	22.17	22.66	22.17	22.27	22.13	22.15	22.18	22.20	22.10
16	17.91	20.54	22.35	22.15	23.00	22.18	22.24	22.20	22.18	22.16	22.22	22.08
17	17.95	20.70	22.28	22.16	22.58	22.17	22.21	22.18	22.20	22.14	22.25	22.03
18	17.91	20.81	22.25	22.15	22.37	22.18	22.26	22.26	22.23	22.12	22.22	22.00
19	17.91	20.86	22.25	22.14	22.26	22.17	22.31	22.32	22.27	22.15	22.15	22.30
20	17.92	20.88	22.30	22.14	22.22	22.19	22.29	22.28	22.26	22.14	22.12	22.24
21	17.95	20.95	22.30	22.12	22.34	22.21	22.27	22.28	22.22	22.12	22.09	22.16
22	17.97	21.14	22.28	22.12	23.19	22.21	22.27	22.26	22.18	22.13	22.08	22.13
23	17.98	21.26	22.27	22.13	23.06	22.20	22.24	22.24	22.15	22.15	22.09	22.20
24	17.98	21.32	22.30	22.12	22.63	22.18	22.21	22.21	22.13	22.13	22.09	22.18
25	17.99	21.35	22.43	22.11	22.45	22.18	22.20	22.19	22.11	22.11	22.08	22.16
26	18.02	21.37	22.39	22.11	22.37	22.18	22.19	22.19	22.10	22.10	22.08	22.14
27	18.02	21.45	22.35	22.10	22.32	22.18	22.18	22.17	22.09	22.09	22.08	22.13
28	18.09	21.50	---	22.10	22.32	22.16	22.16	22.16	22.09	22.03	22.08	22.12
29	18.24	21.53	---	22.14	---	22.16	22.15	22.17	22.08	22.14	22.10	22.11
30	18.44	21.52	---	22.19	---	22.21	22.14	22.16	22.07	22.16	22.09	22.09
31	18.53	---	---	22.19	---	22.20	---	22.17	---	22.15	22.10	---
MEAN	18.12	20.21	---	---	22.37	22.21	22.31	22.18	22.15	22.20	22.17	22.13
MAX	18.68	21.53	---	---	23.19	22.36	22.86	22.32	22.27	22.56	22.47	22.30
MIN	17.73	18.57	---	---	22.05	22.16	22.14	22.10	22.07	22.03	22.08	22.00



03179000 BLUESTONE RIVER NEAR PIPESTEM, WV

LOCATION.--Lat 37°32'38", long 81°00'38", NAD27, Summers County, Hydrologic Unit 05050002, on left bank 1.2 mi downstream from Mountain Creek, 2.5 mi west of Pipestem, and at mile 10.6.

DRAINAGE AREA.--395 mi^2.

PERIOD OF RECORD.--July 1950 to current year.

REVISED RECORDS.--WSP 1705: 1959. WDR WV-82-1: Drainage area. WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,527.35 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark).

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	0200	8,680	11.31	Apr 11	0230	8,030	10.97
Feb 22	1330	*14,100	*13.79	Sep 19	2030	10,000	11.98

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	575	457	668	588	1,600	413	742	816	376	194	413
2	71	388	362	1,110	541	2,030	842	568	681	1,260	158	290
3	61	292	319	1,350	489	1,750	873	444	525	2,250	133	181
4	53	263	279	1,680	1,090	1,280	694	370	479	1,020	132	326
5	46	332	397	1,270	1,590	1,230	604	386	403	570	482	578
6	41	992	722	975	1,010	1,370	539	937	326	401	469	352
7	39	977	621	779	777	1,070	1,830	687	379	462	337	232
8	38	695	521	676	604	821	2,200	685	621	396	1,520	182
9	37	477	440	714	476	722	3,220	725	551	310	1,880	152
10	36	371	385	796	465	638	3,380	662	421	437	1,420	133
11	44	1,080	1,660	740	435	551	6,370	533	331	390	791	119
12	59	2,930	2,490	596	388	496	3,070	438	346	468	725	107
13	60	2,790	2,100	504	340	468	1,650	347	308	350	546	98
14	56	1,290	2,530	464	330	501	1,130	292	266	280	554	94
15	52	782	1,760	396	2,910	457	878	304	971	234	389	115
16	1,060	616	1,210	336	7,950	419	732	638	1,310	194	1,900	175
17	809	1,330	960	e300	3,830	397	627	605	1,320	169	1,730	152
18	360	1,290	793	267	1,720	370	1,140	1,660	1,890	148	905	120
19	219	909	676	e250	1,140	354	1,850	2,340	1,900	208	601	1,920
20	158	723	927	e230	991	425	1,220	1,190	1,550	181	412	964
21	135	754	987	e210	1,410	541	936	1,160	1,080	141	312	476
22	123	1,190	798	e195	9,700	521	865	1,210	758	139	256	351
23	113	1,140	653	e180	10,200	478	728	912	553	201	220	534
24	97	847	816	e170	4,210	439	605	723	424	189	190	433
25	85	645	1,720	e160	2,450	379	544	568	337	152	167	303
26	94	529	1,420	e155	1,730	349	513	499	285	124	149	242
27	97	704	1,040	e150	1,360	344	461	423	247	108	135	202
28	267	781	835	e170	1,290	315	383	367	224	96	126	181
29	798	668	699	245	---	287	342	379	257	348	118	159
30	1,620	567	597	411	---	317	404	404	210	504	112	139
31	948	---	537	536	---	375	---	487	---	276	210	---
TOTAL	7,764	26,927	29,711	16,683	60,014	21,294	39,043	21,685	19,769	12,382	17,273	9,723
MEAN	250	898	958	538	2,143	687	1,301	700	659	399	557	324
MAX	1,620	2,930	2,530	1,680	10,200	2,030	6,370	2,340	1,900	2,250	1,900	1,920
MIN	36	263	279	150	330	287	342	292	210	96	112	94
CFSM	0.63	2.27	2.43	1.36	5.43	1.74	3.29	1.77	1.67	1.01	1.41	0.82
IN.	0.73	2.54	2.80	1.57	5.65	2.01	3.68	2.04	1.86	1.17	1.63	0.92

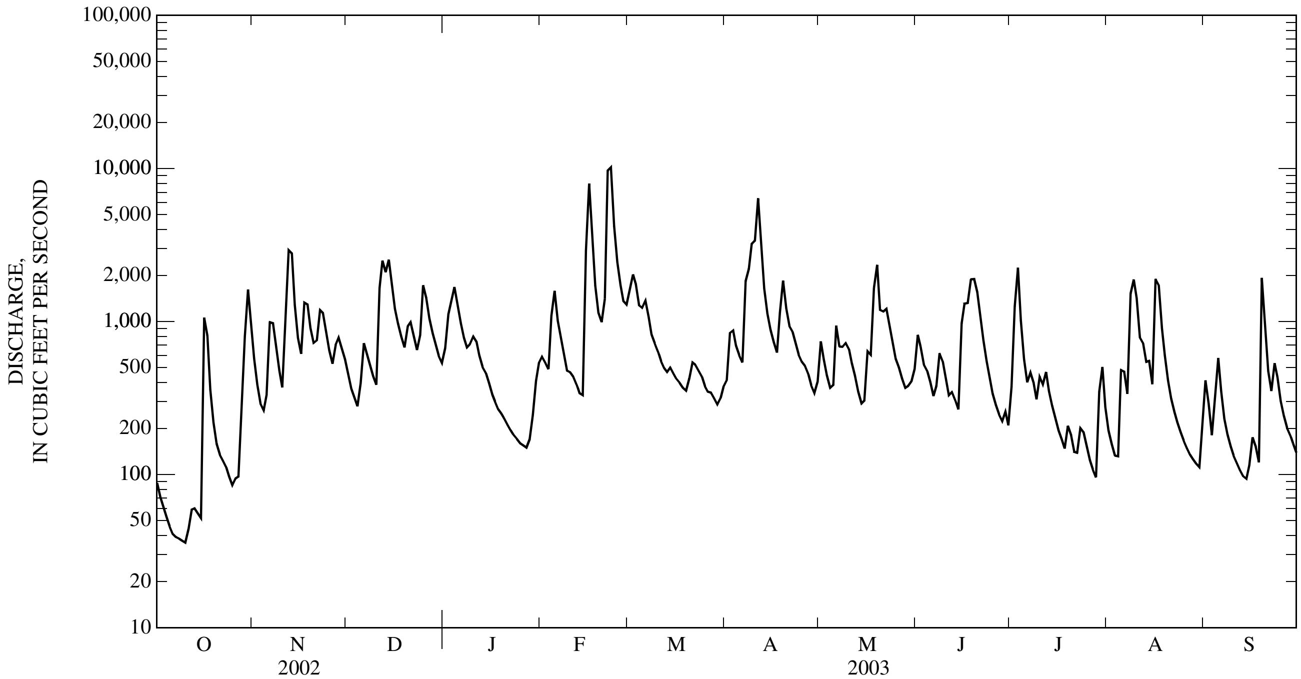
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	140	237	466	666	930	1,070	805	652	308	172	127	94.9
MAX	796	1,048	1,485	2,107	2,148	3,276	2,855	1,499	1,163	1,172	557	456
(WY)	(1977)	(1978)	(1973)	(1957)	(1957)	(1955)	(1987)	(2001)	(1979)	(2001)	(2003)	(1989)
MIN	16.7	20.0	33.8	53.7	187	188	174	154	54.2	40.5	23.8	13.9
(WY)	(1954)	(1954)	(1966)	(1966)	(2002)	(1988)	(1986)	(1964)	(1999)	(1999)	(1988)	(1955)

03179000 BLUESTONE RIVER NEAR PIPESTEM, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1950 - 2003	
ANNUAL TOTAL	174,880		282,268			
ANNUAL MEAN	479		773		470	
HIGHEST ANNUAL MEAN					773	2003
LOWEST ANNUAL MEAN					178	1988
HIGHEST DAILY MEAN	9,570	May 3	10,200	Feb 23	15,900	Apr 5, 1977
LOWEST DAILY MEAN	19	(a)	36	Oct 10	7.0	Sep 22, 1955
ANNUAL SEVEN-DAY MINIMUM	20	Sep 9	40	Oct 5	8.5	Sep 18, 1955
MAXIMUM PEAK FLOW			14,100	Feb 22	19,300	Apr 5, 1977
MAXIMUM PEAK STAGE			13.79	Feb 22	15.82	Apr 5, 1977
INSTANTANEOUS LOW FLOW			35	Oct 10	7.0	(b)
ANNUAL RUNOFF (CFSM)	1.21		1.96		1.19	
ANNUAL RUNOFF (INCHES)	16.47		26.58		16.16	
10 PERCENT EXCEEDS	1,070		1,650		1,110	
50 PERCENT EXCEEDS	205		487		201	
90 PERCENT EXCEEDS	39		134		37	

a Sept. 12, 13.
b Sept. 21-23, 30, 1955.
e Estimated.



03180500 GREENBRIER RIVER AT DURBIN, WV

LOCATION.--Lat 38°32'37", long 79°50'00", NAD27, Pocahontas County, Hydrologic Unit 05050003, on left bank at Durbin, 500 ft downstream from confluence of East and West Forks, and at mile 153.4.

DRAINAGE AREA.--133 mi^2.

PERIOD OF RECORD.--March 1943 to current year.

REVISED RECORDS.--WDR WV-82-1: Drainage area. WDR WV-97-1: 1944-46(M), 1951(M), 1953(M), 1955(P), 1956(M), 1958(M), WDR WV-02-1: 1999(M).

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 2,699.71 ft above NGVD of 1929.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect, faulty gage-height record, and no gage-height record), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 9	2300	3,400	5.29	Sep 19	0900	4,640	6.02
May 11	0300	*6,080	*6.75				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	131	642	277	e900	e115	302	229	250	1,030	90	61	126
2	106	447	253	e1,900	e105	404	618	304	1,200	100	64	238
3	85	336	211	e1,300	e140	435	722	319	828	110	49	428
4	74	281	186	e950	e300	404	e570	875	1,710	82	42	1,270
5	72	304	240	e700	e270	486	433	1,050	1,420	77	e64	981
6	59	1,080	224	e480	e230	990	324	1,010	847	61	e59	481
7	48	863	e213	e350	e210	1,090	1,140	766	804	54	e52	289
8	42	598	e180	e290	e180	818	1,420	561	1,140	243	e64	214
9	39	439	e150	262	e160	943	e1,290	727	1,320	215	e130	168
10	61	350	e130	252	e150	996	e1,200	2,990	995	162	e260	139
11	149	302	e250	213	e130	729	e1,100	4,120	631	137	e540	112
12	186	643	345	e170	e135	557	e900	1,510	448	107	e340	94
13	207	1,070	391	e155	e140	1,160	e700	961	362	114	e260	91
14	252	747	676	e145	e135	2,060	e520	707	407	239	e290	88
15	229	514	544	e130	e130	1,520	e360	548	333	462	e206	94
16	862	401	441	e120	e140	1,400	e290	438	358	300	e120	114
17	1,230	551	e310	e112	e160	1,690	e230	341	447	215	e400	73
18	701	572	e230	e102	e175	1,710	e200	521	609	163	e190	103
19	436	524	e700	e96	e185	1,460	e220	1,150	569	185	e152	3,210
20	321	471	e2,000	e92	e200	1,520	e215	882	791	145	120	1,270
21	255	492	e1,300	e88	1,310	1,710	e218	673	854	117	99	588
22	206	660	e800	e84	1,890	1,130	222	544	656	103	84	354
23	169	626	e540	e80	2,030	756	211	458	449	97	73	345
24	146	491	e400	e76	1,410	530	187	403	328	90	61	262
25	132	403	e350	e73	776	400	177	332	259	70	52	221
26	260	365	e280	e69	536	333	185	302	210	58	46	190
27	253	418	e230	e67	403	276	251	262	176	52	66	165
28	272	379	e210	e64	323	234	227	275	151	53	66	181
29	909	346	e190	e100	---	218	210	291	127	98	77	151
30	1,970	320	e170	e135	---	227	196	316	105	72	59	129
31	1,030	---	e360	e125	---	198	---	325	---	57	72	---
TOTAL	10,892	15,635	12,781	9,680	12,068	26,686	14,765	24,211	19,564	4,128	4,218	12,169
MEAN	351	521	412	312	431	861	492	781	652	133	136	406
MAX	1,970	1,080	2,000	1,900	2,030	2,060	1,420	4,120	1,710	462	540	3,210
MIN	39	281	130	64	105	198	177	250	105	52	42	73
CFSM	2.64	3.92	3.10	2.35	3.24	6.47	3.70	5.87	4.90	1.00	1.02	3.05
IN.	3.05	4.37	3.57	2.71	3.38	7.46	4.13	6.77	5.47	1.15	1.18	3.40

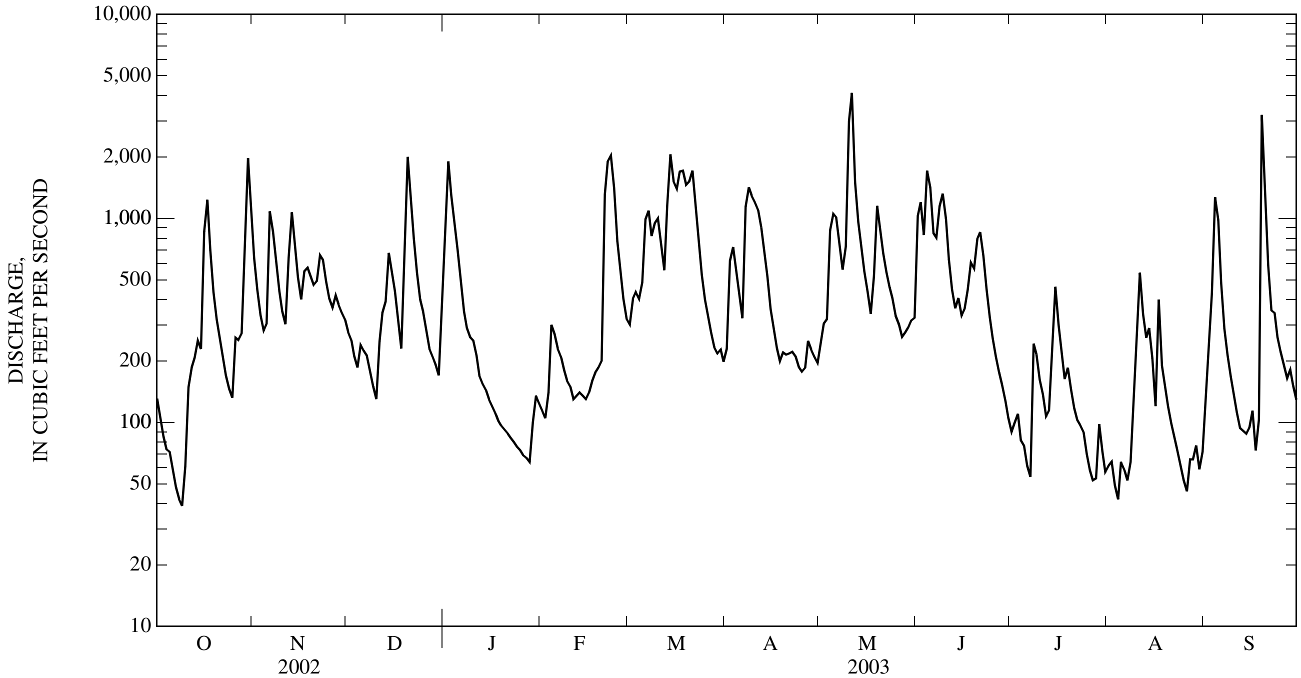
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	104	217	320	369	431	570	425	329	163	100	88.5	71.7
MAX	665	1,336	796	1,023	1,033	1,255	1,041	1,153	652	541	515	427
(WY)	(1977)	(1986)	(1973)	(1996)	(1994)	(1963)	(1958)	(1996)	(2003)	(1996)	(1996)	(1996)
MIN	2.06	10.1	46.6	51.7	120	234	142	77.9	21.9	10.9	6.01	1.82
(WY)	(1954)	(1954)	(1961)	(1981)	(1993)	(1957)	(1955)	(1976)	(1991)	(1988)	(1999)	(1953)

03180500 GREENBRIER RIVER AT DURBIN, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1943 - 2003	
ANNUAL TOTAL	114,645.1		166,797			
ANNUAL MEAN	314		457		265	
HIGHEST ANNUAL MEAN					472	1996
LOWEST ANNUAL MEAN					164	1999
HIGHEST DAILY MEAN	(e)2,700	Apr 22	4,120	May 11	13,200	Nov 4, 1985
LOWEST DAILY MEAN	6.2	(a)	39	Oct 9	0.50	(b)
ANNUAL SEVEN-DAY MINIMUM	7.0	Sep 9	56	Aug 1	0.51	Sep 28, 1953
MAXIMUM PEAK FLOW			6,080	May 11	(c)37,100	Nov 4, 1985
MAXIMUM PEAK STAGE			6.75	May 11	(d)15.82	Nov 4, 1985
INSTANTANEOUS LOW FLOW			37	(f)	0.00	(g)
ANNUAL RUNOFF (CFSM)	2.36		3.44		1.99	
ANNUAL RUNOFF (INCHES)	32.07		46.65		27.07	
10 PERCENT EXCEEDS	720		1,110		617	
50 PERCENT EXCEEDS	190		272		139	
90 PERCENT EXCEEDS	28		75		16	

a Sept. 13, 14.
b Sept. 29 to Oct. 4, 1953, Oct. 2, 3, 1968, and Sept. 11, 1995.
c From rating curve extended above 5,000 ft^3/s on basis of slope-area measurement of peak flow.
d From floodmark.
e Estimated.
f Oct. 9, 10.
g Oct. 2, 3, 1968.



03182050 MARLIN RUN AT MARLINTON, WV
(Detention Reservoir)

LOCATION.--Lat 38° 13' 12", long 80° 04' 52", NAD27, Pocahontas County, Hydrologic Unit 05050003.

DAM NAME.--Marlin Run 1.

SURFACE AREA.--2 acres.

DRAINAGE AREA.--1.25 mi^2.

PERIOD OF RECORD.--November 2002 to September 2003.

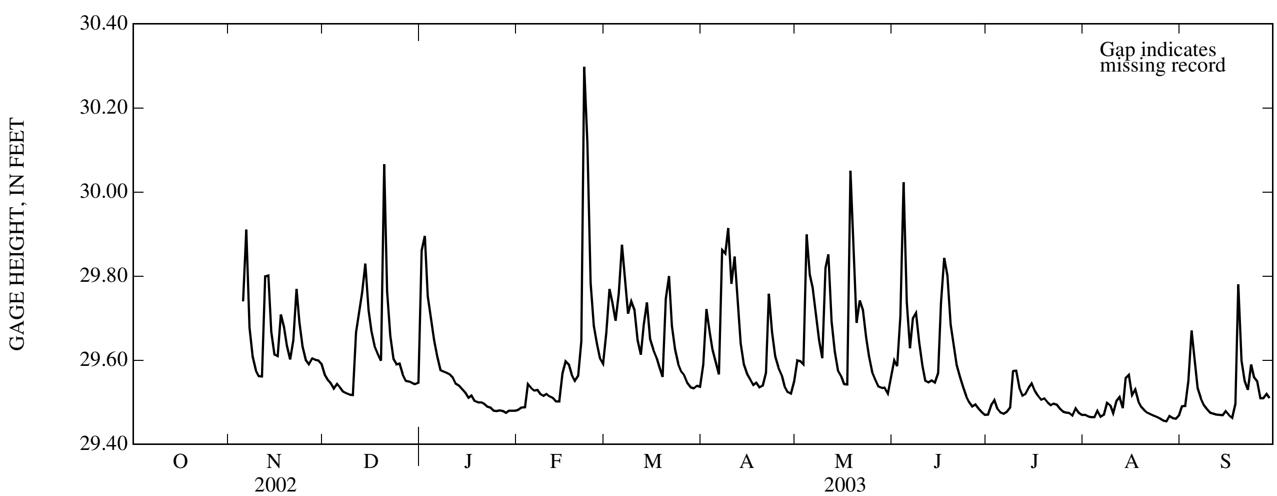
GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 2,190.0 ft above NGVD of 1929.

REMARKS.-- Normal Pool = 29.5 ft (Normal Storage = 15 acre-ft); Top of Riser = 31.3 ft; Emergency Spillway = 65.0 ft; Top of Dam = 71.6 ft.

EXTREMES FOR NOVEMBER 2002 TO SEPTEMBER 2003.--Maximum gage height, 31.19 ft, Feb. 22; minimum gage height, 29.45 ft, Aug. 25-30.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	29.57	29.86	29.48	29.66	29.59	29.60	29.60	29.47	29.47	29.49
2	---	---	29.55	29.90	29.49	29.77	29.72	29.60	29.59	29.49	29.47	29.49
3	---	---	29.55	29.75	29.49	29.74	29.67	29.59	29.70	29.50	29.47	29.55
4	---	---	29.53	29.70	29.54	29.69	29.62	29.90	30.02	29.48	29.46	29.67
5	---	29.74	29.54	29.65	29.53	29.76	29.60	29.80	29.74	29.48	29.48	29.59
6	---	29.91	29.53	29.61	29.53	29.87	29.57	29.77	29.63	29.47	29.47	29.53
7	---	29.68	29.53	29.58	29.53	29.79	29.86	29.71	29.70	29.48	29.47	29.51
8	---	29.61	29.52	29.57	29.52	29.71	29.85	29.65	29.71	29.49	29.50	29.49
9	---	29.58	29.52	29.57	29.52	29.74	29.91	29.61	29.64	29.57	29.49	29.48
10	---	29.56	29.52	29.57	29.52	29.72	29.78	29.82	29.59	29.58	29.47	29.48
11	---	29.56	29.67	29.56	29.51	29.65	29.85	29.85	29.55	29.54	29.50	29.47
12	---	29.80	29.71	29.54	29.51	29.61	29.73	29.69	29.55	29.52	29.51	29.47
13	---	29.80	29.76	29.54	29.50	29.68	29.64	29.62	29.55	29.52	29.49	29.47
14	---	29.67	29.83	29.53	29.50	29.74	29.59	29.58	29.55	29.53	29.56	29.47
15	---	29.61	29.72	29.52	29.57	29.65	29.57	29.56	29.57	29.55	29.57	29.48
16	---	29.61	29.67	29.51	29.60	29.63	29.55	29.54	29.74	29.53	29.52	29.47
17	---	29.71	29.63	29.52	29.59	29.61	29.54	29.54	29.84	29.51	29.53	29.46
18	---	29.68	29.62	29.50	29.57	29.58	29.55	30.05	29.80	29.51	29.50	29.50
19	---	29.63	29.60	29.50	29.55	29.56	29.54	29.87	29.69	29.51	29.49	29.78
20	---	29.60	30.07	29.50	29.56	29.75	29.54	29.69	29.63	29.50	29.48	29.60
21	---	29.65	29.76	29.50	29.65	29.80	29.57	29.74	29.59	29.49	29.47	29.55
22	---	29.77	29.66	29.49	30.30	29.68	29.76	29.72	29.56	29.50	29.47	29.53
23	---	29.69	29.60	29.49	30.11	29.63	29.67	29.65	29.54	29.49	29.47	29.59
24	---	29.63	29.59	29.48	29.78	29.59	29.61	29.61	29.51	29.49	29.46	29.56
25	---	29.60	29.59	29.48	29.68	29.57	29.58	29.57	29.50	29.48	29.46	29.55
26	---	29.59	29.57	29.48	29.64	29.56	29.57	29.55	29.49	29.48	29.46	29.51
27	---	29.60	29.55	29.48	29.61	29.55	29.54	29.54	29.49	29.48	29.46	29.51
28	---	29.60	29.55	29.48	29.59	29.54	29.52	29.53	29.48	29.47	29.47	29.52
29	---	29.60	29.55	29.48	---	29.53	29.52	29.54	29.48	29.49	29.46	29.51
30	---	29.59	29.54	29.48	---	29.54	29.55	29.52	29.47	29.47	29.46	---
31	---	---	29.55	29.48	---	29.54	---	29.56	---	29.47	29.47	---
MEAN	---	---	29.62	29.56	29.61	29.66	29.64	29.66	29.62	29.50	29.48	---
MAX	---	---	30.07	29.90	30.30	29.87	29.91	30.05	30.02	29.58	29.57	---
MIN	---	---	29.52	29.48	29.48	29.53	29.52	29.52	29.47	29.47	29.46	---



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03182500 GREENBRIER RIVER AT BUCKEYE, WV

LOCATION.--Lat 38°11'09", long 80°07'51", NAD27, Pocahontas County, Hydrologic Unit 05050003, on right bank at upstream side of highway bridge at Buckeye, 1,000 ft upstream from Swago Creek, 3.5 mi downstream from Knapp Creek, and at mile 105.1. Records include flow of Swago Creek.

DRAINAGE AREA.--540 mi^2, includes that of Swago Creek.

PERIOD OF RECORD.--September 1929 to current year.

REVISED RECORDS.--WSP 758: 1933. WSP 953: 1930-32, 1934-35(M), 1936, 1937(M), 1938-39, l940(M). WSP 1275: 1936.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 2,085.89 ft above NGVD of 1929. Prior to Feb. 27, 1939, nonrecording gage at same site and datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 20	1500	14,400	11.08	May 11	0400	13,500	10.79
Jan 1	2400	13,000	10.61	Jun 4	1000	12,400	10.39
Feb 22	1900	*18,500	*12.43	Sep 19	1200	15,800	11.55

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	302	1,900	917	3,350	340	1,180	637	915	1,890	249	104	206
2	238	1,310	724	8,440	335	2,170	1,990	999	2,610	248	104	437
3	194	967	657	4,170	348	2,580	2,410	975	2,200	342	97	1,120
4	159	800	533	2,900	562	2,030	1,840	1,980	9,420	347	94	3,240
5	141	906	607	2,060	1,120	2,210	1,420	2,830	5,170	256	104	3,560
6	124	6,310	620	1,580	1,030	4,960	1,100	3,080	2,720	227	100	1,610
7	113	3,350	469	1,220	910	5,110	3,140	2,360	2,480	441	112	972
8	95	2,030	e430	1,030	738	3,180	5,740	1,720	3,890	315	137	663
9	84	1,440	e410	991	629	3,340	5,880	1,310	4,800	569	296	481
10	81	1,120	402	999	605	3,790	5,000	6,860	3,110	693	877	375
11	96	1,010	815	895	530	2,570	5,000	10,400	1,950	549	1,340	311
12	258	2,250	2,070	693	470	1,870	3,980	4,330	1,470	426	1,650	260
13	338	4,910	1,920	623	508	2,660	2,770	2,560	1,980	335	1,030	231
14	346	2,760	3,910	e550	493	6,490	2,000	1,830	1,570	997	795	224
15	373	1,810	2,700	e500	496	4,280	1,500	1,420	1,300	1,010	1,040	241
16	1,360	1,350	1,930	459	488	3,380	1,190	1,220	2,320	877	579	327
17	3,250	1,900	1,540	e430	518	3,580	974	971	3,370	571	664	322
18	1,690	2,270	1,270	e400	634	3,570	845	4,700	3,700	404	642	249
19	1,040	1,780	1,070	e370	629	2,980	932	5,510	2,660	339	460	8,570
20	727	1,520	9,120	e355	684	3,610	897	3,100	2,020	304	351	4,890
21	560	1,420	6,260	e330	851	6,150	872	2,450	2,170	248	279	2,270
22	442	2,630	3,060	e315	9,200	3,700	1,070	2,410	1,740	206	231	1,420
23	359	2,440	2,030	e300	13,900	2,380	986	1,920	1,270	177	193	2,580
24	304	1,800	1,490	286	5,950	1,690	850	1,540	928	168	160	1,690
25	273	1,410	1,350	e275	3,060	1,290	743	1,200	692	152	135	1,130
26	671	1,180	1,110	e260	2,010	1,060	712	999	535	128	115	858
27	978	1,270	855	e250	1,530	916	861	855	443	106	100	696
28	818	1,260	791	e240	1,250	742	871	800	379	94	107	1,020
29	2,080	1,150	703	313	---	654	795	1,020	333	104	161	829
30	7,880	1,050	642	329	---	685	772	1,100	284	100	138	609
31	3,340	---	614	333	---	664	---	1,110	---	118	152	---
TOTAL	28,714	57,303	51,019	35,246	49,818	85,471	57,777	74,474	69,404	11,100	12,347	41,391
MEAN	926	1,910	1,646	1,137	1,779	2,757	1,926	2,402	2,313	358	398	1,380
MAX	7,880	6,310	9,120	8,440	13,900	6,490	5,880	10,400	9,420	1,010	1,650	8,570
MIN	81	800	402	240	335	654	637	800	284	94	94	206
CFSM	1.72	3.54	3.05	2.11	3.29	5.11	3.57	4.45	4.28	0.66	0.74	2.56
IN.	1.98	3.95	3.51	2.43	3.43	5.89	3.98	5.13	4.78	0.76	0.85	2.85

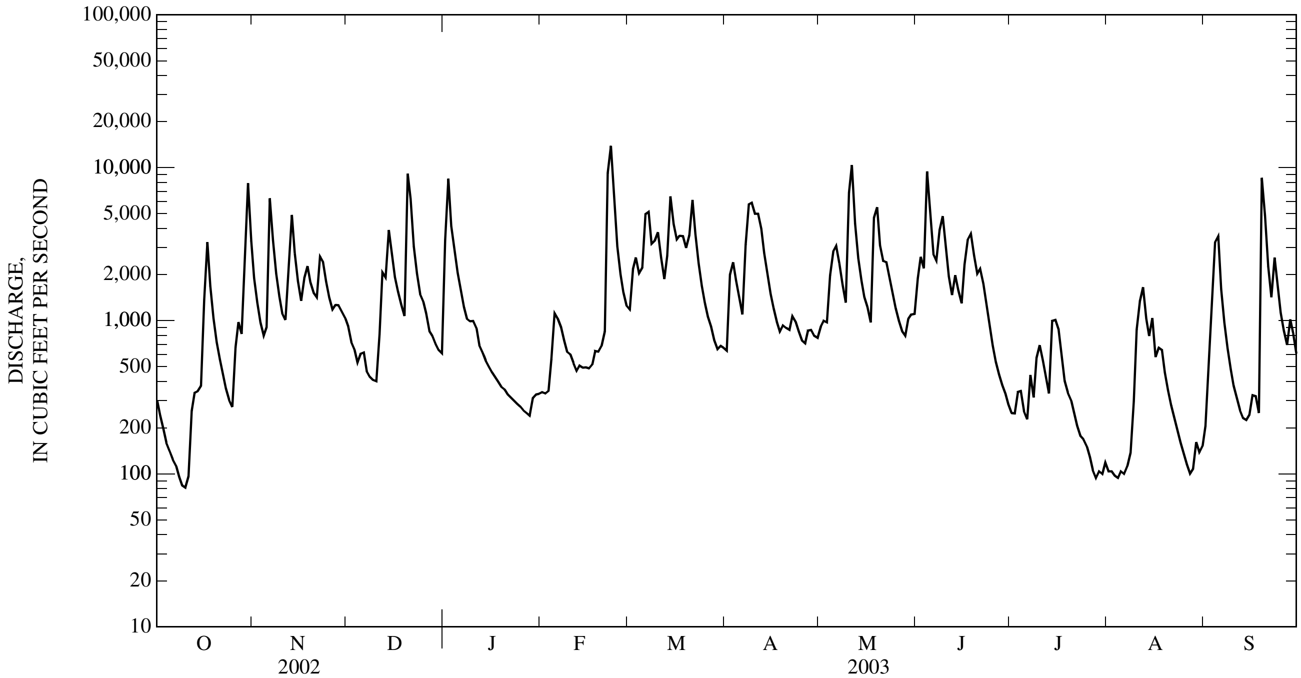
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	340	640	1,064	1,291	1,510	1,955	1,387	1,107	536	340	316	223
MAX	2,626	3,602	2,811	3,542	3,431	4,672	3,097	3,219	2,313	1,333	2,000	1,380
(WY)	(1977)	(1986)	(1973)	(1996)	(1994)	(1963)	(1958)	(1996)	(2003)	(1972)	(1942)	(2003)
MIN	11.8	20.7	115	101	273	764	508	224	67.9	27.8	21.5	13.5
(WY)	(1931)	(1931)	(1931)	(1981)	(1934)	(1988)	(1963)	(1930)	(1991)	(1930)	(1930)	(1930)

03182500 GREENBRIER RIVER AT BUCKEYE, WV--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1930 - 2003	
ANNUAL TOTAL	374,168		574,064			
ANNUAL MEAN	1,025		1,573		890	
HIGHEST ANNUAL MEAN					1,573	2003
LOWEST ANNUAL MEAN					492	1941
HIGHEST DAILY MEAN	13,800	Apr 22	13,900	Feb 23	44,400	Nov 5, 1985
LOWEST DAILY MEAN	23	(a)	81	Oct 10	5.2	Aug 13, 1930
ANNUAL SEVEN-DAY MINIMUM	24	Sep 9	102	Aug 1	7.3	Sep 28, 1930
MAXIMUM PEAK FLOW			18,500	Feb 22	(b)82,000	Nov 5, 1985
MAXIMUM PEAK STAGE			12.43	Feb 22	(c)23.20	Nov 5, 1985
INSTANTANEOUS LOW FLOW			81	(d)	3.8	Aug 13, 1930
ANNUAL RUNOFF (CFSM)	1.90		2.91		1.65	
ANNUAL RUNOFF (INCHES)	25.78		39.55		22.38	
10 PERCENT EXCEEDS	2,190		3,590		2,090	
50 PERCENT EXCEEDS	440		971		419	
90 PERCENT EXCEEDS	67		206		55	

a Sept. 13, 14.
b From rating curve extended above 33,000 ft^3/s on basis of slope-area measurement of peak flow.
c From floodmarks.
d Oct. 9, 10.
e Estimated.



03183500 GREENBRIER RIVER AT ALDERSON, WV

LOCATION.--Lat 37°43'27", long 80°38'30", NAD27, Monroe County, Hydrologic Unit 05050003, on left bank 400 ft upstream from highway bridge at Alderson, 0.5 mi upstream from Muddy Creek, and at mile 29.2.

DRAINAGE AREA.--1,364 mi^2.

PERIOD OF RECORD.--July 1895 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 536: 1907-9. WSP 803: 1918(M). WSP 953: 1930-41. WSP 1275:1897, 1905, 1910, 1914(M), 1915-16, 1917(M), 1919-20(M), 1924-25(M), 1927(M), 1929, 1949, WDR WV-82-1: Drainage area. WDR WV-97-1: 1930(M), 1932(M), 1935-37(M), 1939(P), 1943(P), 1946(M), 1955(P), 1963(M), 1967(M), 1974(M), 1977(M).

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,529.42 ft above NGVD of 1929. Prior to Oct. 15, 1929, nonrecording gage at bridge 400 ft downstream at same datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 19,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 21	0300	23,800	11.17	May 19	0330	26,800	12.03
Feb 23	0530	*46,100	*17.03	Jun 17	0100	27,100	12.11

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	894	4,660	2,110	1,920	613	3,460	1,610	1,650	3,610	854	327	396
2	638	2,940	1,760	11,700	614	5,080	3,940	2,160	4,470	1,420	318	510
3	481	2,070	1,460	9,670	651	7,080	5,640	2,110	4,300	5,250	330	759
4	388	1,600	1,290	7,530	747	6,150	4,720	2,140	8,470	3,130	368	2,030
5	331	1,390	1,160	5,750	1,460	5,470	3,700	3,600	12,200	2,170	392	7,100
6	283	6,280	1,030	4,420	2,050	9,000	3,000	5,090	6,520	1,550	600	4,720
7	237	8,920	954	3,480	1,940	11,100	3,610	5,170	4,580	1,320	553	2,730
8	209	4,840	809	2,790	1,630	7,910	11,500	4,000	7,180	1,900	642	1,840
9	184	3,200	753	2,560	1,280	6,280	14,500	3,270	7,850	1,710	1,440	1,320
10	173	2,350	799	2,550	1,210	7,030	13,500	5,130	7,280	2,060	1,540	981
11	167	2,740	1,380	2,710	1,150	6,010	15,100	14,900	4,870	2,460	1,790	779
12	166	4,510	5,030	2,260	1,050	4,450	11,700	10,100	3,690	2,120	3,320	636
13	179	10,900	5,930	1,670	851	3,660	7,530	5,680	3,560	1,590	3,410	531
14	284	7,590	8,780	1,550	758	7,030	5,360	4,020	3,930	1,560	2,480	477
15	391	4,670	7,950	1,450	1,490	8,020	4,040	3,050	3,290	3,340	3,370	483
16	873	3,280	5,490	1,180	5,380	5,760	3,200	2,880	7,030	2,890	2,830	647
17	4,880	3,860	4,440	1,080	3,720	5,320	2,630	2,510	17,700	1,980	1,940	637
18	4,080	5,900	3,710	900	2,580	5,410	2,300	11,500	12,100	1,370	1,770	667
19	2,270	4,680	3,150	759	2,100	4,970	2,450	21,700	9,460	1,080	1,600	4,030
20	1,470	3,630	8,800	e670	1,840	4,520	2,700	10,300	6,890	1,010	1,130	12,400
21	1,060	3,170	17,900	e610	2,320	9,750	2,500	6,820	5,910	807	894	5,830
22	835	4,440	8,320	e570	18,400	8,280	2,470	6,770	4,880	683	726	3,650
23	663	5,790	5,370	e530	41,000	5,620	2,630	5,650	3,700	584	589	7,020
24	521	4,430	4,140	e500	21,400	4,130	2,340	4,470	2,730	526	488	6,310
25	440	3,330	5,040	487	10,500	3,160	2,060	3,520	2,080	456	424	3,810
26	432	2,650	4,500	e465	6,970	2,560	1,860	3,010	1,650	406	375	2,660
27	1,200	2,520	3,390	e455	5,110	2,200	1,790	2,590	1,350	371	334	2,100
28	1,620	2,860	2,660	e450	3,890	1,870	1,860	2,370	1,160	333	303	3,750
29	2,080	2,650	2,320	562	---	1,610	1,780	2,500	1,040	315	277	3,080
30	10,900	2,390	2,060	588	---	1,560	1,670	3,630	898	324	337	2,270
31	8,880	---	1,870	607	---	1,590	---	3,370	---	354	370	---
TOTAL	47,209	124,240	124,355	72,423	142,704	166,040	143,690	165,660	164,378	45,923	35,267	84,153
MEAN	1,523	4,141	4,011	2,336	5,097	5,356	4,790	5,344	5,479	1,481	1,138	2,805
MAX	10,900	10,900	17,900	11,700	41,000	11,100	15,100	21,700	17,700	5,250	3,410	12,400
MIN	166	1,390	753	450	613	1,560	1,610	1,650	898	315	277	396
CFSM	1.12	3.04	2.94	1.71	3.74	3.93	3.51	3.92	4.02	1.09	0.83	2.06
IN.	1.29	3.39	3.39	1.98	3.89	4.53	3.92	4.52	4.48	1.25	0.96	2.30

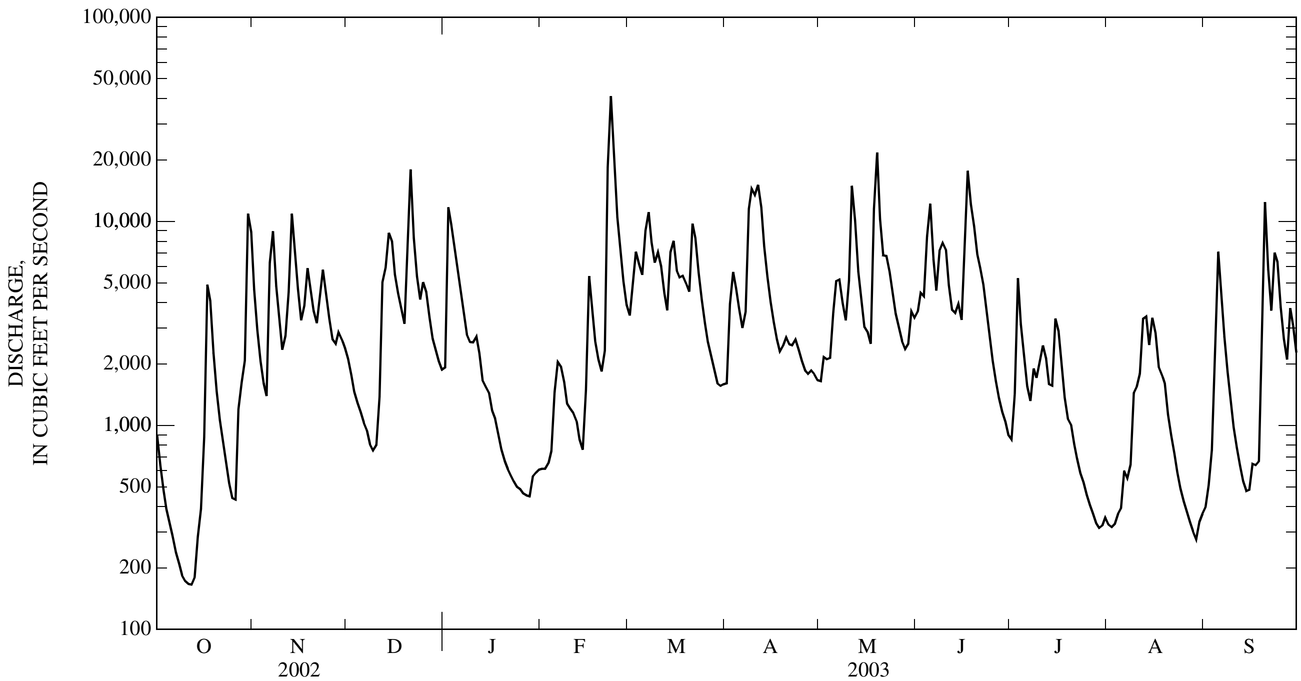
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1895 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	714	1,257	2,243	3,036	3,492	4,513	3,086	2,419	1,348	817	719	452
MAX	4,480	6,006	6,409	7,866	7,739	10,970	7,568	5,700	6,045	3,481	4,390	2,805
(WY)	(1977)	(1986)	(1974)	(1996)	(1897)	(1963)	(1987)	(1996)	(1907)	(1919)	(1898)	(2003)
MIN	35.6	68.9	172	242	411	1,332	802	489	203	68.9	43.2	33.8
(WY)	(1931)	(1931)	(1931)	(1981)	(1934)	(1915)	(1915)	(1941)	(1991)	(1930)	(1930)	(1930)

03183500 GREENBRIER RIVER AT ALDERSON, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1895 - 2003	
ANNUAL TOTAL	772,434		1,316,042			
ANNUAL MEAN	2,116		3,606		2,003	
HIGHEST ANNUAL MEAN					3,606	2003
LOWEST ANNUAL MEAN					983	1941
HIGHEST DAILY MEAN	23,400	Apr 29	41,000	Feb 23	63,100	Jan 20, 1996
LOWEST DAILY MEAN	56	Sep 14	166	Oct 12	26	Aug 11, 1930
ANNUAL SEVEN-DAY MINIMUM	65	Sep 10	188	Oct 7	28	Sep 29, 1930
MAXIMUM PEAK FLOW			46,100	Feb 23	(a)94,000	Jan 20, 1996
MAXIMUM PEAK STAGE			17.03	Feb 23	24.33	Jan 20, 1996
INSTANTANEOUS LOW FLOW			160	(b)	24	(c)
ANNUAL RUNOFF (CFSM)	1.55		2.64		1.47	
ANNUAL RUNOFF (INCHES)	21.07		35.89		19.95	
10 PERCENT EXCEEDS	5,120		7,930		4,830	
50 PERCENT EXCEEDS	894		2,480		944	
90 PERCENT EXCEEDS	158		461		144	

a From rating curve extended above 37,000 ft^3/s on basis of slope-area measurement of peak flow.
b Oct. 11, 13.
c Aug. 12, Oct. 1, 2, 1930.
e Estimated.



03184000 GREENBRIER RIVER AT HILLDALE, WV

LOCATION.--Lat 37°38'24", long 80°48'19", NAD27, Summers County, Hydrologic Unit 05050003, on left bank 100 ft downstream from State Highway 3 bridge at Hilldale, 0.1 mi upstream from Howard Creek, 0.9 mi upstream from Powley Creek, 5.0 mi southeast of Hinton, and at mile 5.5. Records include flow of Howard Creek.

DRAINAGE AREA.--1,619 mi^2, includes that of Howard Creek.

PERIOD OF RECORD.--June 1936 to current year.

REVISED RECORDS.--WSP 1435: 1955. WDR WV-82-1: Drainage area. WDR WV-97-1: 1937(P), 1938(M), 1939(P), 1940-42(M), 1953(M), 1955(M), 1960(M), 1962-64(M), 1967(P), 1969-70(M), 1972(P), 1974(M), 1977-78(P), 1984(M).

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,388.66 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records good except those for period of estimated discharges (ice effect), which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936, reached a stage of 21.85 ft from data furnished by U.S. Army Corps of Engineers, discharge, 60,800 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 24,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 21	0700	25,200	13.37	May 19	0700	30,500	14.92
Feb 23	0900	*53,400	*20.48	Jun 17	0600	28,500	14.34

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	968	6,520	2,730	2,290	e670	4,940	1,790	1,800	4,150	983	357	566
2	677	4,170	2,280	10,400	677	6,450	3,960	2,090	4,850	1,750	338	702
3	518	2,950	1,850	12,600	678	8,690	6,510	2,370	5,140	6,260	361	703
4	424	2,330	1,550	9,510	801	8,000	5,810	2,170	6,810	4,510	413	1,860
5	358	1,980	1,450	7,400	1,400	6,820	4,540	3,190	14,800	2,820	488	7,830
6	312	5,170	1,320	5,680	2,260	9,590	3,670	5,350	8,200	2,100	626	6,330
7	276	11,800	1,180	4,460	2,360	13,100	4,720	5,950	5,630	2,610	734	3,590
8	246	6,610	1,030	3,580	1,970	10,000	13,100	4,690	7,680	2,860	960	2,420
9	225	4,410	909	3,190	1,560	7,500	17,900	3,630	8,970	2,230	1,590	1,710
10	211	3,250	889	3,100	1,320	7,860	17,300	4,860	8,980	2,410	1,790	1,240
11	210	3,400	2,540	3,030	1,330	7,430	19,200	14,700	6,130	2,730	1,590	955
12	206	6,200	6,210	2,660	1,220	5,540	15,500	13,000	4,550	2,540	3,010	779
13	205	12,600	7,710	2,070	1,060	4,420	9,880	7,060	4,120	1,880	4,240	666
14	215	10,200	10,800	1,830	845	6,410	6,960	4,780	4,910	1,420	3,010	591
15	372	6,380	10,400	1,690	2,070	9,690	5,240	3,640	4,180	2,730	3,160	556
16	1,120	4,520	7,230	1,480	8,260	6,950	4,130	3,400	5,070	3,410	3,620	632
17	4,700	4,930	5,630	1,240	5,830	6,040	3,400	3,010	21,900	2,330	2,450	706
18	5,620	7,320	4,720	1,010	3,750	6,110	3,190	10,400	15,800	1,540	1,970	676
19	3,180	6,280	3,970	874	2,930	5,780	3,840	26,900	13,300	1,150	1,880	2,900
20	2,020	4,820	6,290	e780	2,500	5,140	3,800	14,000	9,600	1,000	1,420	12,800
21	1,410	4,180	21,200	e720	3,220	9,630	3,420	9,150	7,690	871	1,070	7,260
22	1,100	5,170	10,900	e660	19,500	10,300	3,170	8,590	6,390	728	862	4,460
23	899	7,080	6,810	e620	49,300	7,000	3,220	7,340	4,840	640	724	7,050
24	732	5,770	5,360	e580	28,300	5,090	2,950	5,780	3,620	559	612	7,700
25	617	4,360	6,690	e540	14,100	3,870	2,550	4,550	2,760	510	531	4,740
26	567	3,450	6,170	e520	9,240	3,090	2,260	3,880	2,160	445	470	3,230
27	854	3,280	4,600	e510	6,830	2,630	2,050	3,340	1,740	405	424	2,440
28	2,090	3,620	3,560	e500	5,380	2,230	2,010	3,050	1,440	368	385	3,840
29	2,740	3,490	2,960	e580	---	1,880	2,000	2,870	1,270	345	361	3,560
30	10,500	3,110	2,610	e630	---	1,730	1,840	4,190	1,080	333	339	2,710
31	12,200	---	2,310	e660	---	1,770	---	4,180	---	346	503	---
TOTAL	55,772	159,350	153,858	85,394	179,361	195,680	179,910	193,910	197,760	54,813	40,288	95,202
MEAN	1,799	5,312	4,963	2,755	6,406	6,312	5,997	6,255	6,592	1,768	1,300	3,173
MAX	12,200	12,600	21,200	12,600	49,300	13,100	19,200	26,900	21,900	6,260	4,240	12,800
MIN	205	1,980	889	500	670	1,730	1,790	1,800	1,080	333	338	556
CFSM	1.11	3.28	3.07	1.70	3.96	3.90	3.70	3.86	4.07	1.09	0.80	1.96
IN.	1.28	3.66	3.54	1.96	4.12	4.50	4.13	4.46	4.54	1.26	0.93	2.19

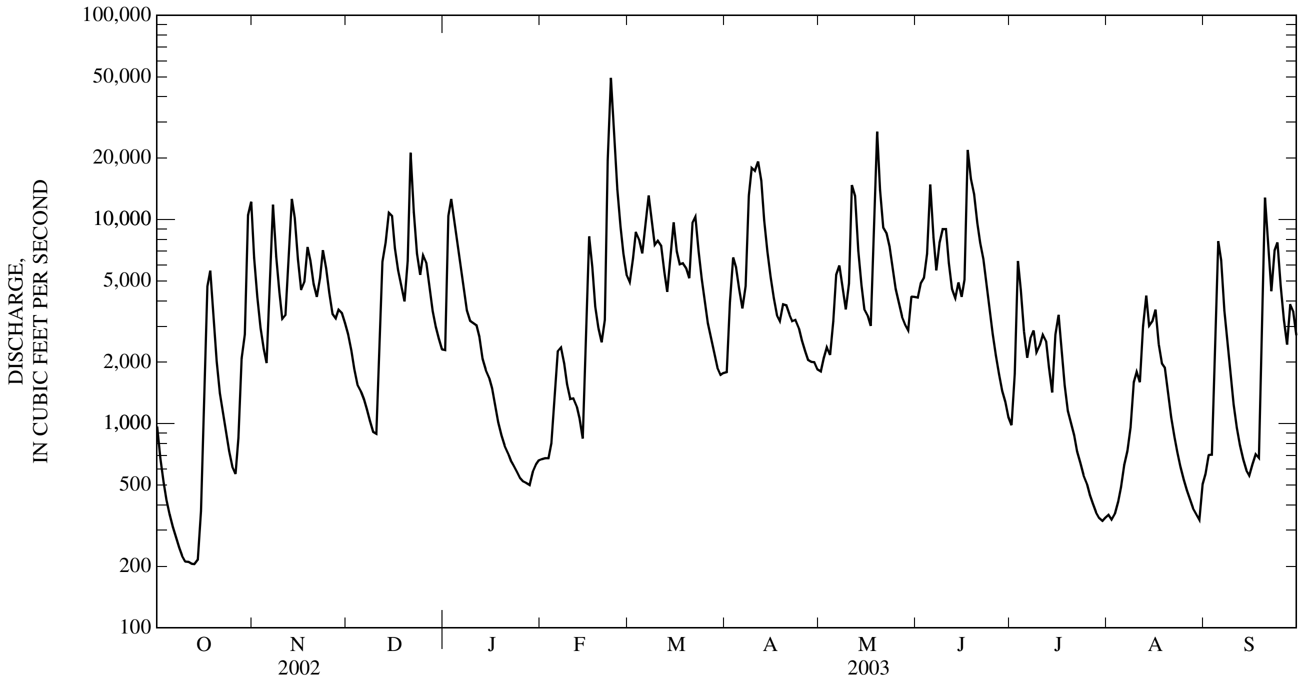
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	793	1,387	2,633	3,387	4,116	5,154	3,623	2,892	1,474	788	755	507
MAX	5,112	6,109	7,866	9,208	9,096	12,910	9,535	6,673	6,592	3,372	3,800	3,173
(WY)	(1977)	(1986)	(1974)	(1996)	(1994)	(1963)	(1987)	(1989)	(2003)	(1972)	(1942)	(2003)
MIN	46.4	76.8	260	302	731	1,436	901	586	219	84.4	72.1	59.6
(WY)	(1954)	(1954)	(1961)	(1981)	(2002)	(1988)	(1986)	(1941)	(1999)	(1999)	(1987)	(1946)

03184000 GREENBRIER RIVER AT HILLDALE, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1936 - 2003	
ANNUAL TOTAL	888,388		1,591,298			
ANNUAL MEAN	2,434		4,360		2,286	
HIGHEST ANNUAL MEAN					4,360	2003
LOWEST ANNUAL MEAN					1,189	1941
HIGHEST DAILY MEAN	24,800	Apr 23	49,300	Feb 23	79,400	Jan 20, 1996
LOWEST DAILY MEAN	54	(a)	205	Oct 13	39	Sep 19, 1946
ANNUAL SEVEN-DAY MINIMUM	57	Sep 11	217	Oct 8	44	Oct 17, 1953
MAXIMUM PEAK FLOW			53,400	Feb 23	93,000	Jan 20, 1996
MAXIMUM PEAK STAGE			20.48	Feb 23	26.88	Jan 20, 1996
INSTANTANEOUS LOW FLOW			201	Oct 14	39	(b)
ANNUAL RUNOFF (CFSM)	1.50		2.69		1.41	
ANNUAL RUNOFF (INCHES)	20.41		36.56		19.18	
10 PERCENT EXCEEDS	6,360		9,610		5,580	
50 PERCENT EXCEEDS	908		3,090		1,060	
90 PERCENT EXCEEDS	141		550		150	

a Sept. 13, 14.
b Sept. 18-20, 1946, Sept. 16, 1964.
e Estimated.



03184500 NEW RIVER AT HINTON, WV

LOCATION.--Lat 37°40'13", long 80°53'34", NAD27, Summers County, Hydrologic Unit 05050004, on right bank at Hinton, 0.2 mi upstream from Madam Creek, 1.5 mi downstream from Greenbrier River, at New River mile 62.0 and Kanawha River mile 160.0.

DRAINAGE AREA.--6,256 mi^2.

PERIOD OF RECORD.--June 1936 to September 2003 (discontinued).

REVISED RECORDS.--WDR WV-82-1: Drainage area. WDR WV-85-1: 1984(m): WDR WV-99-1: 1998 (m).

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,355.18 ft above NGVD of 1929. Prior to June 5, 1949, water-stage recorder at site 400 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since May 1939 by Claytor Lake and since August 1949 by Bluestone Lake.

PEAK DISCHARGES FOR CURRENT YEAR.--Maximum discharge, 65,500 ft^3/s, Feb. 23, 24, gage height, 9.00 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,620	12,100	5,750	10,000	5,110	38,000	8,190	8,420	12,100	7,850	6,670	6,550
2	3,140	9,180	5,050	18,000	4,660	39,000	12,700	10,000	12,000	15,000	6,620	7,900
3	2,870	5,850	4,720	24,900	3,830	37,100	17,500	10,100	11,900	32,900	7,010	6,850
4	2,130	4,250	4,700	23,700	5,270	26,000	15,900	9,210	12,900	37,100	8,120	7,180
5	1,760	4,420	5,220	19,300	9,430	18,700	14,500	10,100	22,100	29,600	9,160	14,700
6	1,720	8,030	6,290	14,600	10,600	20,800	10,700	13,600	15,100	16,100	8,690	13,200
7	1,560	15,900	7,080	12,900	9,960	23,900	13,800	13,800	12,000	16,200	8,350	8,290
8	1,450	11,300	5,620	11,200	8,380	18,800	25,200	12,500	19,000	15,400	13,600	6,660
9	1,410	8,520	3,980	10,600	5,670	13,500	39,000	11,200	26,800	13,900	18,800	5,920
10	1,310	6,790	3,840	10,100	4,440	14,500	40,900	11,800	26,200	12,200	19,800	5,230
11	1,460	6,400	10,300	9,800	5,380	15,200	49,000	21,300	17,900	11,400	16,800	4,610
12	1,600	19,600	16,800	7,240	6,290	12,200	50,500	19,700	15,800	11,600	15,900	3,840
13	1,600	31,000	18,500	5,620	6,230	10,600	43,000	13,000	20,400	9,860	14,900	4,210
14	1,850	24,400	27,500	6,600	5,380	12,300	35,900	10,000	18,200	8,480	12,600	4,090
15	2,280	14,600	27,400	7,000	9,350	15,700	24,700	8,400	19,500	9,610	12,100	3,810
16	5,060	12,000	19,500	6,520	31,200	11,100	16,000	8,850	24,500	10,300	13,800	4,350
17	9,880	14,000	14,900	5,710	32,800	9,580	13,000	10,400	45,800	8,150	13,700	4,650
18	9,660	21,700	13,700	4,650	26,600	14,000	13,300	21,500	40,000	7,160	11,900	5,060
19	7,490	17,800	10,800	4,090	17,800	15,200	22,500	46,700	37,800	6,980	10,100	9,430
20	4,760	12,100	11,600	3,650	14,200	13,600	23,100	26,500	37,500	6,810	7,570	19,600
21	3,470	10,500	31,200	3,740	16,700	22,500	20,800	19,900	34,000	5,950	6,820	11,600
22	3,260	13,200	23,700	3,960	40,400	24,900	16,500	18,900	23,400	5,540	6,370	7,790
23	2,860	15,700	16,200	3,940	63,400	17,700	14,700	15,700	16,400	6,650	6,060	11,900
24	2,340	11,500	13,200	5,040	60,800	12,900	13,400	13,600	13,100	7,220	5,640	15,100
25	2,170	8,390	19,600	5,020	50,800	11,900	12,300	12,100	11,000	6,130	5,280	11,600
26	2,650	8,810	22,300	3,850	44,000	11,700	11,400	11,000	9,840	5,210	4,890	8,350
27	2,780	10,100	17,300	2,980	40,500	9,790	9,900	10,800	8,720	4,600	4,520	6,340
28	3,820	10,100	12,800	4,000	38,500	9,440	9,360	10,400	7,920	4,430	4,310	10,400
29	6,610	8,220	9,080	4,050	---	8,830	9,570	9,870	7,570	4,500	4,510	10,600
30	15,900	6,890	8,490	3,810	---	7,060	8,630	11,200	7,430	7,860	4,240	8,420
31	18,300	---	8,500	4,600	---	6,510	---	10,700	---	9,150	4,560	---
TOTAL	130,770	363,350	405,620	261,170	577,680	523,010	615,950	441,250	586,880	353,840	293,390	248,230
MEAN	4,218	12,110	13,080	8,425	20,630	16,870	20,530	14,230	19,560	11,410	9,464	8,274
MAX	18,300	31,000	31,200	24,900	63,400	39,000	50,500	46,700	45,800	37,100	19,800	19,600
MIN	1,310	4,250	3,840	2,980	3,830	6,510	8,190	8,400	7,430	4,430	4,240	3,810

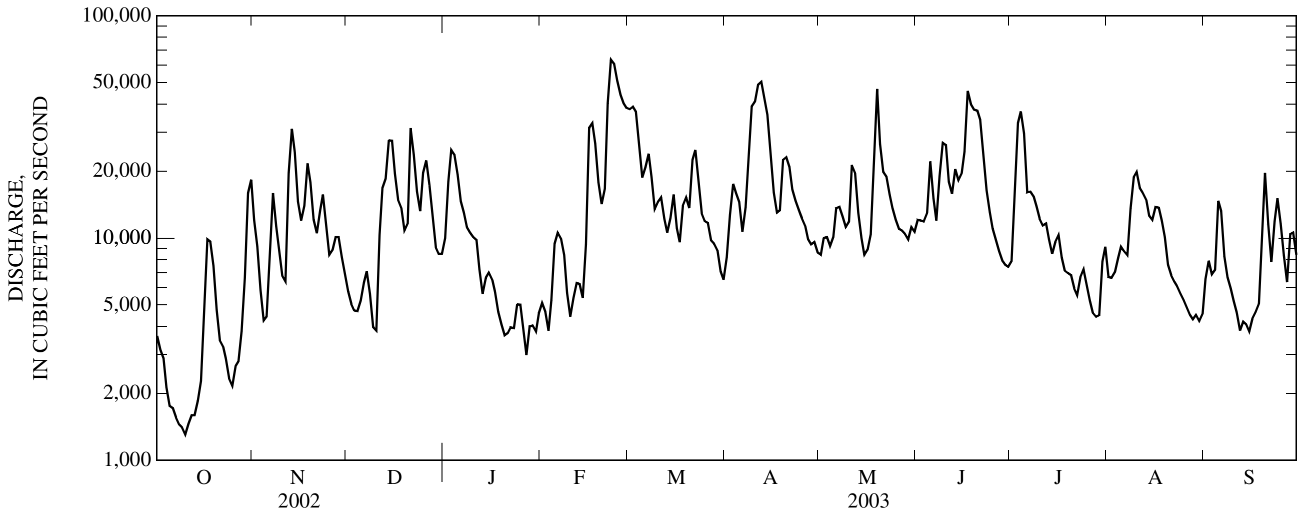
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY) [REGULATED, UNADJUSTED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3,888	5,243	7,768	9,927	12,870	15,190	12,280	9,740	6,407	4,268	4,012	3,323
MAX	14,720	16,780	19,380	24,310	30,020	32,430	35,060	18,470	19,560	11,410	19,800	13,460
(WY)	(1977)	(1978)	(1949)	(1996)	(1957)	(1955)	(1987)	(1958)	(2003)	(2003)	(1940)	(1989)
MIN	1,371	1,445	1,736	1,850	3,115	4,005	3,717	3,074	1,960	1,489	1,321	1,450
(WY)	(1942)	(2002)	(1940)	(1956)	(2002)	(1988)	(1986)	(1941)	(1988)	(1988)	(2002)	(1953)

03184500 NEW RIVER AT HINTON, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939 - 2003	
ANNUAL TOTAL	2,275,928		4,801,140			
ANNUAL MEAN	6,235		13,150		7,885	
HIGHEST ANNUAL MEAN					13,150	2003
LOWEST ANNUAL MEAN					3,988	1988
HIGHEST DAILY MEAN	36,300	May 3	63,400	Feb 23	170,000	Aug 15, 1940
LOWEST DAILY MEAN	878	Sep 13	1,310	Oct 10	620	Nov 3, 1980
ANNUAL SEVEN-DAY MINIMUM	897	Sep 9	1,480	Oct 7	828	Jul 8, 1988
MAXIMUM PEAK FLOW			65,500	Feb 23	(a)246,000	Aug 15, 1940
MAXIMUM PEAK STAGE			9.00	Feb 23	18.97	Aug 15, 1940
INSTANTANEOUS LOW FLOW			1,230	Oct 11	238	Aug 21, 1962
10 PERCENT EXCEEDS	15,700		25,500		16,800	
50 PERCENT EXCEEDS	3,380		10,400		5,000	
90 PERCENT EXCEEDS	1,230		4,030		1,840	

a From rating curve extended above 80,000 ft^3/s on basis of slope-area measurement at station at Bluestone Dam, and gaged inflow from Greenbrier River.



STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 1938, BY WATER YEAR (WY) [UNREGULATED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	11,260	5,164	7,666	17,720	11,710	10,180	7,563	7,767	6,657	5,842	5,238	3,606
MAX	17,110	7,554	7,958	26,230	14,240	12,070	7,996	8,741	9,633	11,730	7,740	5,551
(WY)	(1938)	(1938)	(1937)	(1937)	(1937)	(1938)	(1937)	(1938)	(1938)	(1938)	(1938)	(1937)
MIN	5,415	2,773	7,374	9,209	9,181	8,285	7,129	6,792	3,681	2,820	2,946	2,225
(WY)	(1937)	(1937)	(1938)	(1938)	(1938)	(1937)	(1938)	(1937)	(1937)	(1937)	(1936)	(1936)

SUMMARY STATISTICS	WATER YEARS 1936 - 1938	
ANNUAL MEAN	8,642	
HIGHEST ANNUAL MEAN	9,236	1938
LOWEST ANNUAL MEAN	8,047	1937
HIGHEST DAILY MEAN	79,500	Jan 21, 1937
LOWEST DAILY MEAN	1,300	Sep 23, 1936
ANNUAL SEVEN-DAY MINIMUM	1,580	Sep 21, 1936
10 PERCENT EXCEEDS	15,900	
50 PERCENT EXCEEDS	5,570	
90 PERCENT EXCEEDS	2,370	

03185000 PINEY CREEK AT RALEIGH, WV

LOCATION (REVISED).--Lat 37°45'38", long 81°09'45", NAD27, Raleigh County, Hydrologic Unit 05050004, on left bank at Raleigh, 0.6 mi downstream from Whitestick Creek, 0.4 mi upstream from Beaver Creek, 1.5 mi southeast of Beckley, and at mile 11.9.

DRAINAGE AREA.--52.7 mi^2, revised.

PERIOD OF RECORD.--August 1951 to September 1982, December 2002 to September 2003.

REVISED RECORDS.--WSP 1435: 1955(M). WDR WV-97-1: Drainage area, 1961(m), 1963(m), 1967(m), 1970(m) 1972(m), 1977(m), 1980(m).

GAGE.--Water-stage recorder. Datum of gage is unknown. Prior to Dec. 4, 2002, gage located 500 ft upstream.

REMARKS.--Records good except those for periods of estimated daily discharges (no gage-height record, ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	0500	1,130	4.86	Apr 11	0400	1,200	5.00
Feb 22	1600	*2,500	*8.34	May 21	2300	751	4.07
Feb 25	0900	715	3.99	Jun 18	1130	1,330	5.30
Apr 7	2230	751	4.07	Sep 4	1330	2,060	7.12
Apr 9	0630	868	4.32				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	e55	98	46	269	92	116	136	89	52	16
2	---	---	e47	140	48	366	137	145	99	86	40	17
3	---	---	e42	267	60	360	142	117	75	82	43	20
4	---	---	44	265	187	285	123	104	126	63	47	925
5	---	---	79	177	236	252	121	126	98	50	58	350
6	---	---	81	141	133	268	110	289	77	60	47	120
7	---	---	63	110	105	234	496	230	107	160	69	80
8	---	---	57	99	85	188	679	175	111	104	107	59
9	---	---	51	104	75	165	744	165	114	88	81	45
10	---	---	47	115	69	145	575	205	88	103	59	38
11	---	---	151	106	62	120	1,060	425	90	131	57	39
12	---	---	230	87	58	109	572	287	100	125	156	37
13	---	---	200	74	50	100	339	195	78	124	83	26
14	---	---	308	66	49	101	226	152	70	98	71	24
15	---	---	236	59	450	97	173	243	111	84	55	27
16	---	---	163	e53	917	85	141	315	500	75	91	31
17	---	---	121	e49	391	76	125	276	623	67	164	25
18	---	---	101	45	205	73	222	425	1,130	60	103	29
19	---	---	90	e42	128	74	356	492	797	98	72	320
20	---	---	189	e39	118	72	270	360	535	64	54	166
21	---	---	204	e37	170	70	214	563	373	39	40	98
22	---	---	152	36	1,650	67	219	577	231	35	34	85
23	---	---	112	34	1,940	65	171	349	150	43	29	115
24	---	---	130	e32	853	64	146	239	109	41	24	85
25	---	---	208	e31	563	58	130	156	89	33	21	67
26	---	---	190	e30	379	71	127	126	76	28	18	57
27	---	---	148	e29	289	98	118	97	67	26	16	50
28	---	---	117	e28	255	94	103	84	61	26	15	48
29	---	---	99	e32	---	97	99	89	54	30	14	42
30	---	---	86	e36	---	97	103	84	48	26	14	36
31	---	---	78	42	---	88	---	98	---	25	13	---
TOTAL	---	---	3,879	2,503	9,571	4,308	8,133	7,304	6,323	2,163	1,747	3,077
MEAN	---	---	125	80.7	342	139	271	236	211	69.8	56.4	103
MAX	---	---	308	267	1,940	366	1,060	577	1,130	160	164	925
MIN	---	---	42	28	46	58	92	84	48	25	13	16
CFSM	---	---	2.37	1.53	6.49	2.64	5.14	4.47	4.00	1.32	1.07	1.95
IN.	---	---	2.74	1.77	6.76	3.04	5.74	5.16	4.46	1.53	1.23	2.17

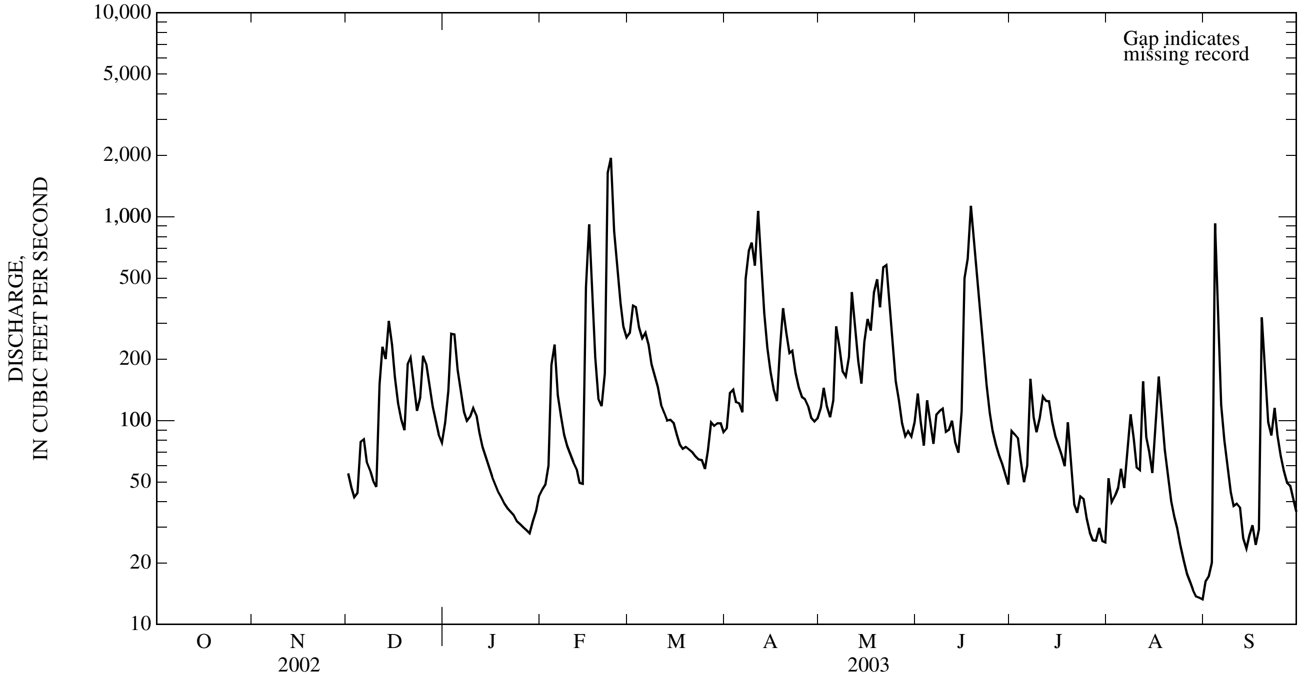
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	18.2	32.4	70.8	97.5	122	140	104	83.2	45.2	27.9	24.6	16.4
MAX	108	95.9	156	231	342	352	271	236	211	95.4	85.8	103
(WY)	(1977)	(1963)	(1958)	(1957)	(2003)	(1963)	(2003)	(2003)	(2003)	(1962)	(1980)	(2003)
MIN	1.20	1.12	0.87	3.48	31.7	47.6	26.6	15.7	5.94	2.82	2.29	1.39
(WY)	(1964)	(1966)	(1966)	(1966)	(1978)	(1969)	(1963)	(1964)	(1964)	(1966)	(1964)	(1965)

03185000 PINEY CREEK AT RALEIGH, WV--Continued

SUMMARY STATISTICS	WATER YEARS 1951 - 2003	
ANNUAL MEAN	62.6	
HIGHEST ANNUAL MEAN	87.2	1958
LOWEST ANNUAL MEAN	30.1	1966
HIGHEST DAILY MEAN	2,210	Mar 12, 1963
LOWEST DAILY MEAN	0.20	(a)
ANNUAL SEVEN-DAY MINIMUM	0.20	Sep 5, 1964
MAXIMUM PEAK FLOW	2,870	Mar 12, 1963
MAXIMUM PEAK STAGE	8.34	Feb 22, 2003
INSTANTANEOUS LOW FLOW	0.20	(a)
ANNUAL RUNOFF (CFSM)	1.19	
ANNUAL RUNOFF (INCHES)	16.13	
10 PERCENT EXCEEDS	143	
50 PERCENT EXCEEDS	31	
90 PERCENT EXCEEDS	4.0	

a Sept. 5-18, 21-23, 1964.
e Estimated.



03185400 NEW RIVER AT THURMOND, WV

LOCATION.--Lat 37°57'18", long 81°04'36", NAD27, Fayette County, Hydrologic Unit 05050004, on right bank at Thurmond, at Chessie System pump house, 0.1 mi upstream from Dunloup Creek, 0.3 mi upstream from railroad/highway bridge, at New River mile 25.8 and Kanawha River mile 122.4.

DRAINAGE AREA.--6,687 mi^2, excluding that of Dunloup Creek.

PERIOD OF RECORD.--February 1981 to current year.

REVISED RECORDS.--WDR WV-97-1: 1981-92(M).

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,030.71 ft above NGVD of 1929.

REMARKS.--Records good except those for periods of estimated discharges (doubtful gage-height record) which are fair. Flow regulated by Claytor Lake and Bluestone Lake.

PEAK DISCHARGES FOR CURRENT YEAR.--Maximum discharge, 96,600 ft^3/s, Feb. 23, gage height, 20.05 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,820	15,500	7,150	10,500	e5,050	40,600	8,400	8,830	12,400	7,730	7,680	6,070
2	3,480	11,600	5,860	16,800	e5,000	41,700	12,200	9,840	13,000	12,100	6,670	7,920
3	3,370	8,170	5,440	29,700	e4,200	41,400	19,200	11,000	12,300	29,700	7,400	7,910
4	2,910	5,470	5,170	27,300	e5,700	31,900	18,600	9,800	12,000	36,900	8,000	11,600
5	1,930	4,980	5,630	23,100	9,570	22,500	16,400	9,820	22,100	32,700	9,700	15,200
6	1,810	7,820	6,460	17,200	12,200	22,200	13,400	14,200	17,200	18,700	9,410	17,300
7	1,770	18,400	7,650	14,000	11,000	27,200	15,200	15,400	13,500	16,600	8,490	10,100
8	1,550	14,300	7,180	13,000	10,100	22,400	27,000	13,700	17,100	18,000	12,500	7,560
9	1,470	10,700	5,070	11,500	7,330	16,600	42,300	12,500	26,800	15,700	19,200	6,720
10	1,450	8,130	4,070	11,800	5,160	14,600	45,100	12,100	29,000	14,700	21,400	5,940
11	1,360	7,310	8,420	e10,500	5,250	17,200	54,600	20,200	20,900	12,700	18,900	5,300
12	1,660	18,600	20,400	e8,000	6,590	14,200	55,200	23,900	15,800	12,700	17,300	4,640
13	1,680	35,600	21,300	6,530	6,760	11,600	46,600	15,500	20,900	11,400	16,700	4,130
14	1,670	30,000	29,700	6,590	6,210	11,900	39,400	11,300	20,100	9,450	14,000	4,890
15	2,110	18,400	32,500	7,730	8,970	17,300	29,800	9,570	18,900	9,690	12,100	4,230
16	4,420	13,300	23,900	7,250	34,900	13,300	18,600	9,380	25,200	10,900	13,400	4,630
17	10,600	15,900	17,800	6,560	37,300	10,100	14,800	11,200	44,900	9,270	17,600	4,990
18	11,600	24,300	15,800	e5,820	31,600	12,600	13,000	20,000	45,500	7,620	13,200	5,240
19	8,980	21,600	13,400	4,700	21,900	17,300	24,200	50,900	41,800	7,620	11,600	10,400
20	6,760	16,100	12,500	4,170	16,400	14,000	25,800	32,900	40,200	7,270	8,600	21,100
21	4,090	11,100	32,900	4,080	18,100	20,500	23,700	25,400	37,600	6,890	7,250	15,900
22	3,800	14,400	28,400	4,120	51,200	28,100	19,500	23,600	27,700	5,820	6,950	9,150
23	3,470	17,500	19,100	4,080	83,800	20,300	16,300	20,000	19,300	6,440	6,400	10,600
24	2,920	15,500	15,000	4,520	70,300	15,100	15,100	16,000	15,100	7,510	6,160	16,900
25	2,340	9,730	20,200	5,940	57,000	12,000	13,200	14,000	11,900	6,980	5,580	13,800
26	2,510	9,300	26,300	4,940	48,200	12,900	12,700	12,200	10,600	5,740	5,350	9,950
27	3,220	11,500	20,400	e3,900	43,700	11,000	11,000	11,700	9,360	5,120	4,920	7,550
28	3,670	12,000	15,900	e3,600	40,900	9,610	9,980	11,300	8,420	4,790	4,600	9,210
29	6,050	10,400	11,100	e4,250	---	9,930	10,100	10,700	7,920	4,830	4,600	11,100
30	15,300	8,130	9,270	e4,050	---	8,520	9,450	11,400	7,800	6,060	4,760	10,100
31	23,800	---	9,370	e4,300	---	6,730	---	12,000	---	10,200	4,500	---
TOTAL	146,570	425,740	463,340	290,530	664,390	575,290	680,830	490,340	625,300	371,830	314,920	280,130
MEAN	4,728	14,190	14,950	9,372	23,730	18,560	22,690	15,820	20,840	11,990	10,160	9,338
MAX	23,800	35,600	32,900	29,700	83,800	41,700	55,200	50,900	45,500	36,900	21,400	21,100
MIN	1,360	4,980	4,070	3,600	4,200	6,730	8,400	8,830	7,800	4,790	4,500	4,130

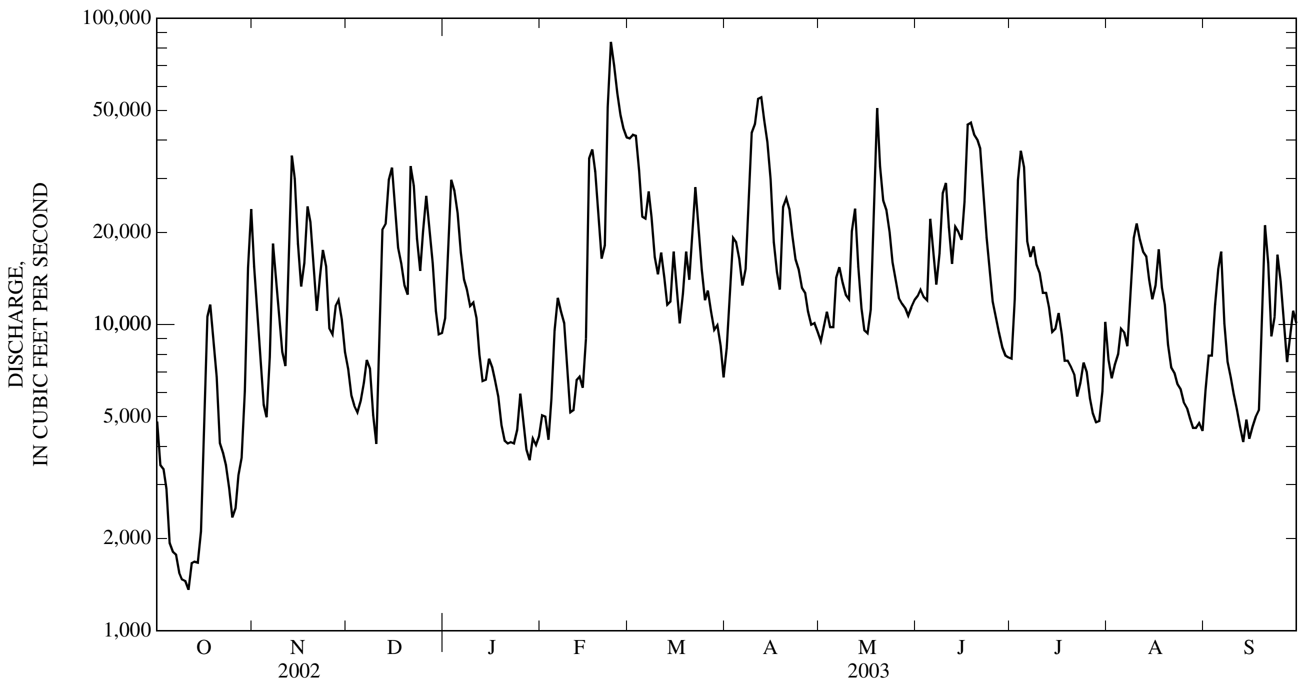
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3,661	5,722	8,312	11,160	14,890	16,180	13,750	11,880	7,397	4,551	4,046	3,401
MAX	16,510	15,260	18,020	27,470	28,590	34,950	40,500	19,650	20,840	11,990	10,160	14,310
(WY)	(1990)	(1986)	(1997)	(1996)	(1994)	(1993)	(1987)	(1989)	(2003)	(2003)	(2003)	(1989)
MIN	1,388	1,499	2,366	3,517	3,631	4,154	3,958	5,033	2,010	1,532	1,393	1,626
(WY)	(1992)	(2002)	(2002)	(2000)	(2002)	(1988)	(1986)	(2000)	(1988)	(1988)	(1988)	(1998)

03185400 NEW RIVER AT THURMOND, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1981 - 2003	
ANNUAL TOTAL	2,685,009		5,329,210			
ANNUAL MEAN	7,356		14,600		8,756	
HIGHEST ANNUAL MEAN					14,600	2003
LOWEST ANNUAL MEAN					4,336	1988
HIGHEST DAILY MEAN	43,100	May 3	83,800	Feb 23	92,500	Jan 20, 1996
LOWEST DAILY MEAN	918	Sep 12	1,360	Oct 11	808	Jul 11, 1988
ANNUAL SEVEN-DAY MINIMUM	943	Sep 10	1,550	Oct 8	852	Jul 6, 1988
MAXIMUM PEAK FLOW			96,600	Feb 23	(a)100,000	Jan 20, 1996
MAXIMUM PEAK STAGE			20.05	Feb 23	20.35	Jan 20, 1996
INSTANTANEOUS LOW FLOW			1,320	Oct 11	589	Oct 20, 1994
10 PERCENT EXCEEDS	18,400		29,700		19,100	
50 PERCENT EXCEEDS	3,750		11,600		5,260	
90 PERCENT EXCEEDS	1,320		4,470		1,790	

a From rating curve extended above 59,000 ft^3/s.
e Estimated.



03186500 WILLIAMS RIVER AT DYER, WV

LOCATION.--Lat 38°22'44", long 80°29'03", NAD27, Webster County, Hydrologic Unit 05050005, on left bank at Dyer, 0.2 mi downstream from Craig Run, 7.0 mi southwest of Webster Springs, and at mile 2.3.

DRAINAGE AREA.--128 mi^2.

PERIOD OF RECORD.--September 1929 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 1275: 1930.

GAGE.--Water-stage recorder. Datum of gage is 2,193.46 ft above NGVD of 1929, adjustment of 1912. Prior to June 11, 1930, nonrecording gage at same site and datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 20	0900	5,210	8.02	Jun 4	0430	4,820	7.72
May 10	1200	*9,310	*10.82	Sep 4	1430	6,120	8.65

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	694	325	958	183	325	217	283	1,170	58	46	259
2	74	507	262	1,420	162	480	764	335	798	57	56	484
3	62	376	231	872	165	558	850	278	828	89	45	1,200
4	51	330	181	625	800	453	589	258	3,030	133	43	3,460
5	45	352	218	476	756	539	464	275	1,210	102	59	1,560
6	38	1,720	199	389	480	1,180	362	364	711	68	76	718
7	34	1,210	156	300	380	1,040	1,190	301	1,310	54	51	437
8	29	757	e145	274	278	721	1,310	258	1,250	125	159	292
9	26	550	140	250	238	848	1,220	227	967	251	603	204
10	27	438	129	255	e200	788	880	3,700	622	257	553	158
11	43	484	396	208	e170	565	1,040	1,870	480	210	511	125
12	97	1,410	585	158	e155	457	832	888	496	167	384	98
13	110	1,390	456	e150	143	1,200	602	610	532	128	240	82
14	282	800	718	e135	e130	2,040	447	430	736	299	222	88
15	176	554	517	e125	311	1,200	351	355	506	438	152	182
16	769	452	416	e115	527	1,280	287	344	775	231	136	316
17	1,370	867	334	e110	393	1,450	241	265	964	155	591	157
18	615	720	319	e105	319	1,440	217	1,150	839	120	375	126
19	388	637	314	e96	267	1,240	345	1,250	592	299	236	2,770
20	304	730	2,850	e92	281	1,350	280	725	674	207	167	1,250
21	278	622	1,260	e88	343	1,230	241	657	594	142	125	651
22	228	754	765	e82	2,410	855	260	549	444	113	100	421
23	188	577	577	e78	3,580	625	279	423	319	101	84	749
24	158	460	451	e75	1,380	459	236	349	233	94	67	435
25	139	431	444	e72	802	392	210	273	176	74	53	299
26	320	465	350	e69	574	377	206	249	138	58	43	236
27	405	848	286	e66	445	306	239	227	117	47	36	186
28	312	637	250	e64	364	247	197	376	108	42	31	168
29	716	482	223	137	---	253	194	674	89	63	60	149
30	2,170	396	199	239	---	261	197	653	72	67	107	125
31	1,060	---	203	220	---	213	---	576	---	49	348	---
TOTAL	10,603	20,650	13,899	8,303	16,236	24,372	14,747	19,172	20,780	4,298	5,759	17,385
MEAN	342	688	448	268	580	786	492	618	693	139	186	580
MAX	2,170	1,720	2,850	1,420	3,580	2,040	1,310	3,700	3,030	438	603	3,460
MIN	26	330	129	64	130	213	194	227	72	42	31	82
CFSM	2.67	5.38	3.50	2.09	4.53	6.14	3.84	4.83	5.41	1.08	1.45	4.53
IN.	3.08	6.00	4.04	2.41	4.72	7.08	4.29	5.57	6.04	1.25	1.67	5.05

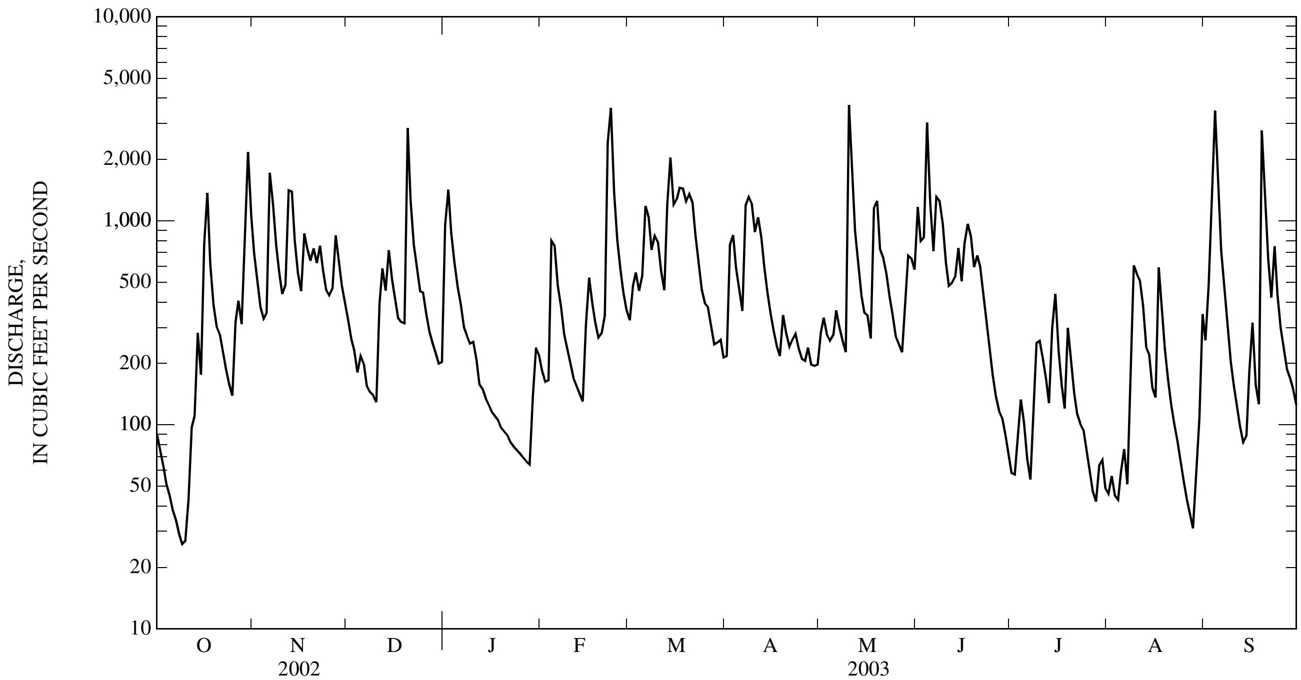
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	163	297	412	455	517	657	491	369	211	189	168	97.2
MAX	852	1,085	934	985	1,005	1,518	1,421	845	769	803	710	580
(WY)	(1930)	(1986)	(1979)	(1996)	(1939)	(1963)	(1958)	(1996)	(1940)	(1954)	(1989)	(2003)
MIN	1.07	8.87	94.9	75.7	118	326	160	66.1	19.5	5.85	6.97	2.34
(WY)	(1954)	(1954)	(1940)	(1940)	(1978)	(1976)	(1995)	(1964)	(1965)	(1930)	(1944)	(1953)

03186500 WILLIAMS RIVER AT DYER, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1929 - 2003	
ANNUAL TOTAL	134,228.9		176,204			
ANNUAL MEAN	368		483		335	
HIGHEST ANNUAL MEAN					483	2003
LOWEST ANNUAL MEAN					187	1941
HIGHEST DAILY MEAN	(e)3,700	May 7	3,700	May 10	10,000	Jul 4, 1932
LOWEST DAILY MEAN	2.7	Sep 14	26	Oct 9	0.50	(a)
ANNUAL SEVEN-DAY MINIMUM	3.4	Sep 9	35	Oct 5	0.54	Oct 11, 1953
MAXIMUM PEAK FLOW			9,310	May 10	(b)22,000	Jul 4, 1932
MAXIMUM PEAK STAGE			10.82	May 10	(c)18.45	Jul 4, 1932
INSTANTANEOUS LOW FLOW			25	(d)	0.49	(f)
ANNUAL RUNOFF (CFSM)	2.87		3.77		2.62	
ANNUAL RUNOFF (INCHES)	39.01		51.21		35.54	
10 PERCENT EXCEEDS	764		1,180		766	
50 PERCENT EXCEEDS	218		312		182	
90 PERCENT EXCEEDS	22		73		20	

a Oct. 13-16, 21, 1953.
b From rating curve extended above 7,000 ft^3/s on basis of slope-area measurements at gage heights 12.33 ft and 18.45 ft.
c From floodmarks.
d Oct. 9, 10.
e Estimated.
f Sept. 12, 13, 1995.



03187500 CRANBERRY RIVER NEAR RICHWOOD, WV

LOCATION.--Lat 38°17'43", long 80°31'36", NAD27, Nicholas County, Hydrologic Unit 05050005, Monongahela National Forest, on left bank 30 ft downstream from U.S. Forest Service highway bridge, 0.6 mi upstream from Barrenshe Run, 5.0 mi north of Richwood, and at mile 5.6.

DRAINAGE AREA.--80.4 mi^2.

PERIOD OF RECORD.--October 1944 to December 1951, June 1964 to September 1982, March 1984 to current year.

REVISED RECORDS.--WDR WV-82-1: Drainage area. WDR WV-97-1: 1946(M), 1948(M), 1954(M), 1967(P), 1970(M), 1972-79(M), 1980-81(P), 1986(P), 1989(P), 1991-92(M), 1994(P).

GAGE.--Water-stage recorder with satellite telemeter. Elevation of gage is approximately 2,100 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor. Gage-height data for water years 1972-79 provided by U.S. Forest Service.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 19, 1954, reached a stage of 12.22 ft, discharge, 12,200 ft^3/s, from floodmarks, present site and datum.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep 4	1400	*4,120	*7.64	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	371	215	372	178	210	143	190	767	32	45	165
2	46	282	180	851	161	278	404	195	490	35	63	278
3	37	224	157	576	168	311	520	168	478	93	54	648
4	30	230	124	397	465	266	354	161	1,930	255	58	2,260
5	25	266	157	304	439	315	285	164	819	175	132	1,020
6	21	947	139	255	322	609	232	212	460	104	109	467
7	19	605	106	208	264	586	652	188	759	82	72	302
8	16	394	e98	192	196	418	797	164	820	301	106	211
9	15	306	97	172	e160	487	708	145	538	446	177	154
10	16	260	89	170	e140	450	514	964	364	441	184	119
11	22	302	209	140	e122	349	616	909	303	346	178	94
12	51	809	340	e122	e112	287	519	499	353	273	213	72
13	74	851	274	e107	e100	572	370	347	354	214	149	57
14	132	484	427	e97	130	1,230	278	256	435	298	150	56
15	93	342	318	e92	244	729	232	222	390	520	137	158
16	645	286	262	e85	377	754	207	217	715	285	158	222
17	679	494	222	e78	282	863	179	171	885	202	239	118
18	340	417	225	e74	229	923	163	752	648	141	193	95
19	235	388	221	e70	198	798	256	925	446	254	141	1,630
20	209	459	1,750	e66	197	874	212	498	487	190	105	818
21	194	398	860	e63	231	898	188	422	406	135	80	423
22	168	473	475	e60	1,480	550	211	357	333	106	64	287
23	138	365	366	e57	2,140	405	192	272	255	101	53	534
24	116	294	291	e55	946	294	160	228	178	85	42	322
25	103	272	292	e53	521	253	140	188	134	66	33	225
26	258	296	235	e50	361	245	135	179	97	51	26	181
27	251	518	207	e48	279	211	143	155	83	40	21	145
28	257	387	178	e46	234	168	120	204	77	36	18	137
29	630	298	159	101	---	171	114	368	56	69	91	123
30	1,030	253	144	235	---	178	115	452	42	68	68	101
31	548	---	145	229	---	146	---	412	---	47	111	---
TOTAL	6,454	12,271	8,962	5,425	10,676	14,828	9,159	10,584	14,102	5,491	3,270	11,422
MEAN	208	409	289	175	381	478	305	341	470	177	105	381
MAX	1,030	947	1,750	851	2,140	1,230	797	964	1,930	520	239	2,260
MIN	15	224	89	46	100	146	114	145	42	32	18	56
CFSM	2.59	5.09	3.60	2.18	4.74	5.95	3.80	4.25	5.85	2.20	1.31	4.74
IN.	2.99	5.68	4.15	2.51	4.94	6.86	4.24	4.90	6.52	2.54	1.51	5.28

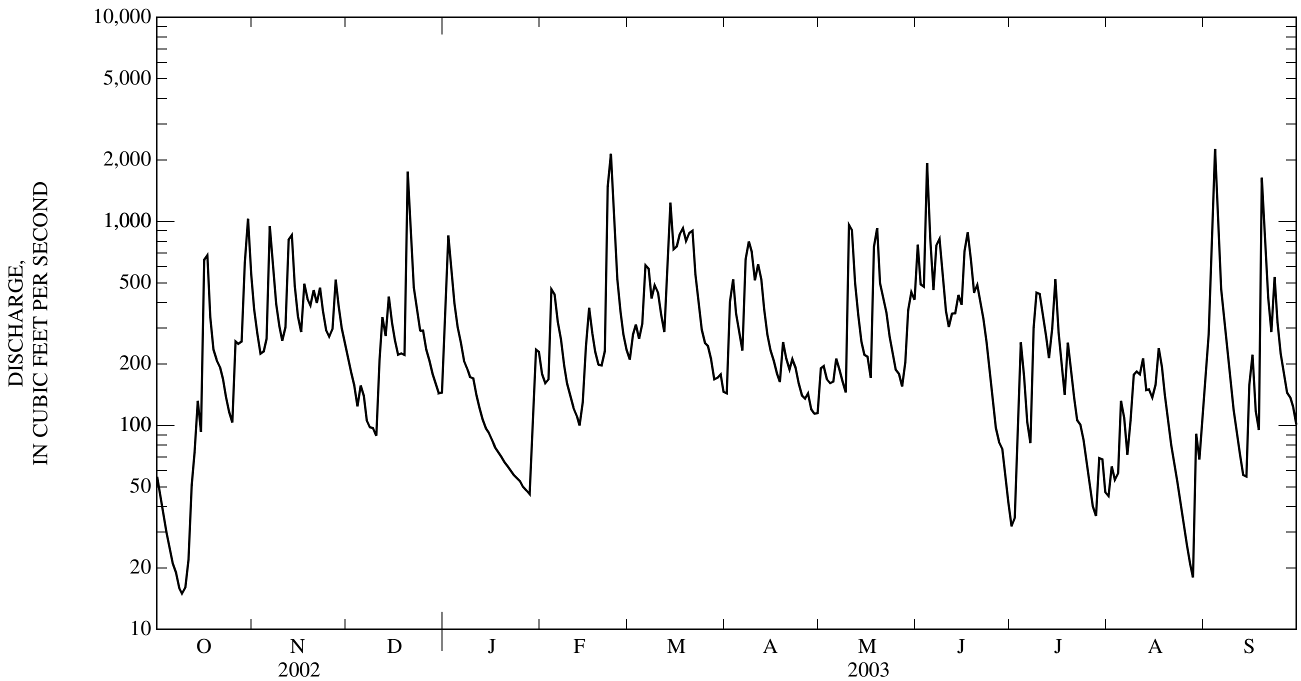
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	118	217	304	313	343	433	312	273	155	127	109	90.1
MAX	613	746	632	636	642	954	570	567	470	389	562	381
(WY)	(1977)	(1986)	(1979)	(1974)	(1982)	(1984)	(1987)	(1996)	(2003)	(2001)	(1989)	(2003)
MIN	6.65	12.7	63.0	40.3	68.2	232	114	86.1	12.7	7.64	8.56	2.50
(WY)	(1999)	(2002)	(1966)	(1977)	(1978)	(2001)	(1995)	(1991)	(1966)	(1993)	(1946)	(1946)

03187500 CRANBERRY RIVER NEAR RICHWOOD, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1945 - 2003	
ANNUAL TOTAL	82,331.4		112,644			
ANNUAL MEAN	226		309		232	
HIGHEST ANNUAL MEAN					318	1979
LOWEST ANNUAL MEAN					126	1999
HIGHEST DAILY MEAN	2,560	May 7	2,260	Sep 4	6,770	Mar 21, 1984
LOWEST DAILY MEAN	1.1	Sep 14	15	Oct 9	0.16	Aug 21, 1987
ANNUAL SEVEN-DAY MINIMUM	1.5	Sep 9	19	Oct 5	0.28	Aug 15, 1987
MAXIMUM PEAK FLOW			4,120	Sep 4	(a)11,200	Aug 21, 1989
MAXIMUM PEAK STAGE			7.64	Sep 4	(b)11.93	Aug 21, 1989
INSTANTANEOUS LOW FLOW			14	(c)	0.14	Aug 22, 1987
ANNUAL RUNOFF (CFSM)	2.81		3.84		2.88	
ANNUAL RUNOFF (INCHES)	38.09		52.12		39.19	
10 PERCENT EXCEEDS	474		663		526	
50 PERCENT EXCEEDS	141		221		134	
90 PERCENT EXCEEDS	11		58		17	

a From rating curve extended above 9,000 ft^3/s on basis of slope-area measurement at gage height 11.00 ft.
b From floodmarks.
c Oct. 9, 10.
e Estimated.



03189100 GAULEY RIVER NEAR CRAIGSVILLE, WV

LOCATION.--Lat 38°17'27", long 80°38'28", NAD27, Nicholas County, Hydrologic Unit 05050005, on right bank at downstream side of highway bridge on State Highway 20, 200 ft downstream from Cherry River, 1.8 mi downstream from Cranberry River, 2.7 mi south of Craigsville, and at mile 61.5.

DRAINAGE AREA.--529 mi^2.

PERIOD OF RECORD.--October 1964 to September 1982, October 1982 to September 1983 (gage heights, discharge measurements, and annual maximum discharge only), October 1985 to current year.

REVISED RECORDS.--WDR WV-82-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,870.00 ft above NGVD of 1929.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of 1932 and 1954 were about 105,000 ft^3/s and 67,500 ft^3/s, respectively.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 12,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 20	1300	12,300	16.09	Sep 4	1500	*19,900	*18.05
Feb 23	0800	17,300	17.43	Sep 19	1230	12,900	16.26
May 10	1600	14,500	16.70				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	388	2,530	1,520	1,590	952	1,510	802	1,320	4,070	257	226	1,190
2	308	1,970	1,250	4,050	893	1,950	2,210	1,520	3,030	245	251	1,390
3	257	1,550	1,120	3,020	894	2,320	2,940	1,370	2,520	393	226	3,150
4	211	1,490	888	2,570	2,840	2,000	2,240	1,190	8,520	652	232	10,800
5	184	1,600	1,080	2,070	3,310	2,050	1,830	1,110	4,460	583	536	6,130
6	157	4,450	1,100	1,770	2,220	3,440	1,510	1,280	2,740	372	473	2,800
7	137	3,820	856	1,440	1,780	3,530	2,840	1,180	3,380	309	391	1,820
8	117	2,700	812	1,270	1,370	2,630	4,150	1,040	4,350	672	815	1,290
9	105	2,140	711	1,180	1,090	2,640	3,730	898	3,150	1,670	1,680	901
10	108	1,780	625	1,220	e900	2,580	3,120	6,770	2,280	1,970	2,110	658
11	132	1,900	1,150	1,120	e760	2,060	3,670	5,500	1,850	1,550	1,650	514
12	237	3,910	2,390	778	e660	1,720	3,150	2,940	1,990	1,280	2,060	401
13	362	5,270	1,990	e700	586	2,490	2,430	2,110	1,820	972	1,260	323
14	777	3,090	2,620	e640	e520	5,970	1,910	1,600	2,490	988	1,050	291
15	612	2,270	2,300	e580	1,480	3,810	1,550	1,330	2,090	1,410	817	527
16	3,110	1,890	1,920	544	3,160	3,590	1,300	1,350	5,450	1,030	767	1,090
17	4,210	2,960	1,630	e520	2,530	3,940	1,110	1,090	4,960	673	1,630	626
18	2,330	2,910	1,550	e490	1,950	3,860	1,020	3,150	3,400	492	1,530	451
19	1,610	2,470	1,510	e460	1,550	3,380	1,350	4,780	2,490	1,010	1,010	8,290
20	1,320	2,760	7,550	e430	1,550	3,240	1,240	2,860	2,990	924	705	5,130
21	1,230	2,440	4,630	e410	1,900	3,510	1,070	2,600	2,870	595	520	2,700
22	1,050	2,650	2,910	e390	9,510	2,510	1,200	2,380	2,170	461	409	1,830
23	830	2,300	2,290	e370	14,300	1,980	1,200	1,890	1,610	440	343	2,490
24	677	1,940	1,860	e360	5,560	1,560	1,050	1,590	1,180	371	283	1,810
25	581	1,830	1,900	e340	3,290	1,330	912	1,280	857	307	223	1,310
26	975	1,880	1,690	e330	2,440	1,230	921	1,080	637	245	182	1,050
27	1,340	3,070	1,430	e320	1,960	1,100	1,130	959	531	196	153	815
28	1,270	2,630	1,250	e300	1,690	889	956	1,060	480	170	130	728
29	2,690	2,100	1,110	445	---	810	879	2,320	390	349	214	635
30	5,980	1,780	978	800	---	932	935	2,710	314	330	251	525
31	3,480	---	977	1,000	---	844	---	2,610	---	253	1,010	---
TOTAL	36,775	76,080	55,597	31,507	71,645	75,405	54,355	64,867	79,069	21,169	23,137	61,665
MEAN	1,186	2,536	1,793	1,016	2,559	2,432	1,812	2,092	2,636	683	746	2,056
MAX	5,980	5,270	7,550	4,050	14,300	5,970	4,150	6,770	8,520	1,970	2,110	10,800
MIN	105	1,490	625	300	520	810	802	898	314	170	130	291
CFSM	2.24	4.79	3.39	1.92	4.84	4.60	3.43	3.96	4.98	1.29	1.41	3.89
IN.	2.59	5.35	3.91	2.22	5.04	5.30	3.82	4.56	5.56	1.49	1.63	4.34

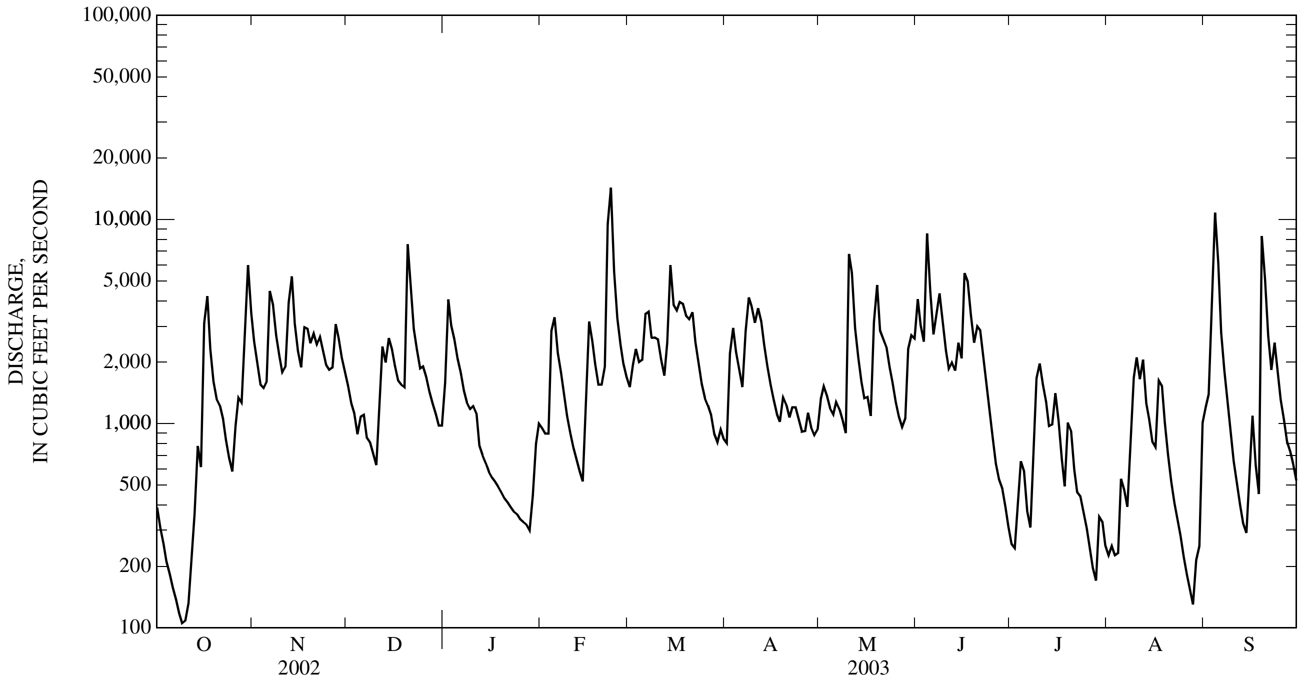
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	728	1,315	1,851	1,890	2,106	2,624	1,987	1,688	956	774	678	513
MAX	3,531	4,464	3,561	3,722	3,928	4,968	3,525	3,575	2,730	2,270	2,819	2,056
(WY)	(1977)	(1986)	(1979)	(1996)	(1994)	(1967)	(1987)	(1996)	(1974)	(2001)	(1989)	(2003)
MIN	49.1	78.7	341	464	551	1,433	676	463	100	58.3	67.9	54.3
(WY)	(1993)	(2002)	(1966)	(1977)	(1978)	(1976)	(1995)	(1991)	(1991)	(1999)	(1988)	(1995)

03189100 GAULEY RIVER NEAR CRAIGSVILLE, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1965 - 2003	
ANNUAL TOTAL	542,578		651,271			
ANNUAL MEAN	1,487		1,784		1,423	
HIGHEST ANNUAL MEAN					1,944	1996
LOWEST ANNUAL MEAN					854	1999
HIGHEST DAILY MEAN	14,100	Apr 22	14,300	Feb 23	29,800	Oct 9, 1976
LOWEST DAILY MEAN	16	Sep 14	105	Oct 9	8.2	Sep 12, 1995
ANNUAL SEVEN-DAY MINIMUM	21	Sep 9	134	Oct 5	9.0	Sep 10, 1995
MAXIMUM PEAK FLOW			19,900	Sep 4	(a)61,800	Nov 4, 1985
MAXIMUM PEAK STAGE			18.05	Sep 4	25.72	Nov 4, 1985
INSTANTANEOUS LOW FLOW			99	(b)	7.6	Aug 22, 1987
ANNUAL RUNOFF (CFSM)	2.81		3.37		2.69	
ANNUAL RUNOFF (INCHES)	38.15		45.80		36.55	
10 PERCENT EXCEEDS	2,960		3,460		3,250	
50 PERCENT EXCEEDS	977		1,340		822	
90 PERCENT EXCEEDS	104		330		110	

a From rating curve extended above 35,000 ft^3/s.
b Oct. 9, 10.
e Estimated.



03189600 GAULEY RIVER BELOW SUMMERSVILLE DAM, WV

LOCATION.--Lat 38°12'54", long 80°53'18", NAD27, Nicholas County, Hydrologic Unit 05050005, on right bank 0.4 mi downstream from Summersville Dam, 5.0 mi southwest of Summersville, and at mile 35.3.

DRAINAGE AREA.--806 mi^2.

PERIOD OF RECORD.--March 1966 to September 1982, October 1986 to September 2003 (discontinued). October 1982 to September 1986 (gage heights, discharge measurements, and annual maximum discharge only).

REVISED RECORDS.--WDR WV-67: 1966. WDR WV-82-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,350.00 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--No estimated daily discharges. Records good above 400 ft^3/s and fair below.

PEAK DISCHARGES FOR CURRENT YEAR.--Maximum discharge, 15,800 ft^3/s, June 4, gage height, 18.66 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	510	5,770	3,740	1,930	1,610	5,540	594	1,570	6,590	382	319	2,580
2	362	4,110	2,190	4,810	1,410	5,890	208	3,170	4,510	460	290	2,190
3	502	3,510	1,370	4,840	1,270	6,500	202	2,540	4,130	396	296	4,150
4	1,290	3,810	1,340	4,480	3,490	5,930	206	1,610	11,100	1,010	325	11,200
5	1,520	4,230	1,510	3,740	6,080	4,380	209	1,760	8,410	583	743	15,400
6	1,520	5,700	1,950	2,700	4,700	4,960	210	1,920	5,000	471	728	5,180
7	1,200	6,620	1,520	2,140	2,860	5,050	213	1,720	4,220	467	730	3,810
8	408	6,610	1,280	1,890	2,130	3,700	225	1,320	6,940	1,010	1,360	3,260
9	409	5,300	1,070	1,680	1,310	3,580	237	1,110	4,780	2,730	3,520	3,070
10	407	4,200	909	1,850	1,520	3,350	240	6,630	3,590	3,810	4,600	3,080
11	527	4,190	1,580	1,880	1,330	2,570	254	8,540	2,660	1,750	1,930	2,620
12	1,530	5,100	3,640	1,280	1,130	1,970	260	4,050	3,420	2,070	3,240	2,110
13	1,460	5,400	3,480	982	811	2,740	260	3,030	2,430	1,470	1,510	2,200
14	372	6,530	3,590	1,170	753	5,400	260	1,880	3,600	1,100	1,530	2,190
15	274	7,540	3,900	1,090	2,280	6,440	246	1,880	3,060	1,410	968	1,720
16	411	7,460	3,350	504	6,350	5,380	217	1,520	8,130	1,590	1,100	1,220
17	306	7,390	2,670	556	6,110	5,140	221	1,490	10,800	788	2,520	2,120
18	306	7,350	2,220	733	4,520	5,110	221	3,750	5,970	660	1,860	2,120
19	651	6,800	2,350	733	4,020	4,000	221	8,410	3,630	1,430	1,420	2,820
20	1,970	5,820	5,940	733	2,840	3,700	221	5,130	5,910	1,420	728	3,220
21	755	5,770	8,320	682	3,530	4,490	219	3,940	5,320	787	727	3,500
22	679	5,720	5,650	539	8,230	3,570	217	3,660	3,830	787	681	3,680
23	674	4,720	3,630	422	629	2,220	217	2,790	2,490	749	439	5,250
24	667	3,930	2,820	446	4,010	1,960	217	2,400	1,420	512	260	5,460
25	669	3,920	2,750	408	10,800	1,450	220	1,710	923	420	231	4,570
26	671	3,900	2,450	443	10,000	1,390	221	1,390	1,100	423	232	3,900
27	669	6,220	1,990	510	8,100	1,240	221	1,390	920	417	234	3,770
28	672	7,060	1,980	432	6,220	861	1,210	1,390	658	377	236	3,750
29	683	4,560	1,880	400	---	682	1,930	3,420	653	384	236	3,370
30	4,280	3,770	1,310	1,040	---	693	1,330	4,220	474	699	649	2,040
31	7,840	---	1,400	1,150	---	1,780	---	4,280	---	632	1,640	---
TOTAL	34,194	163,010	83,779	46,193	108,043	111,666	10,927	93,620	126,668	31,194	35,282	115,550
MEAN	1,103	5,434	2,703	1,490	3,859	3,602	364	3,020	4,222	1,006	1,138	3,852
MAX	7,840	7,540	8,320	4,840	10,800	6,500	1,930	8,540	11,100	3,810	4,600	15,400
MIN	274	3,510	909	400	629	682	202	1,110	474	377	231	1,220

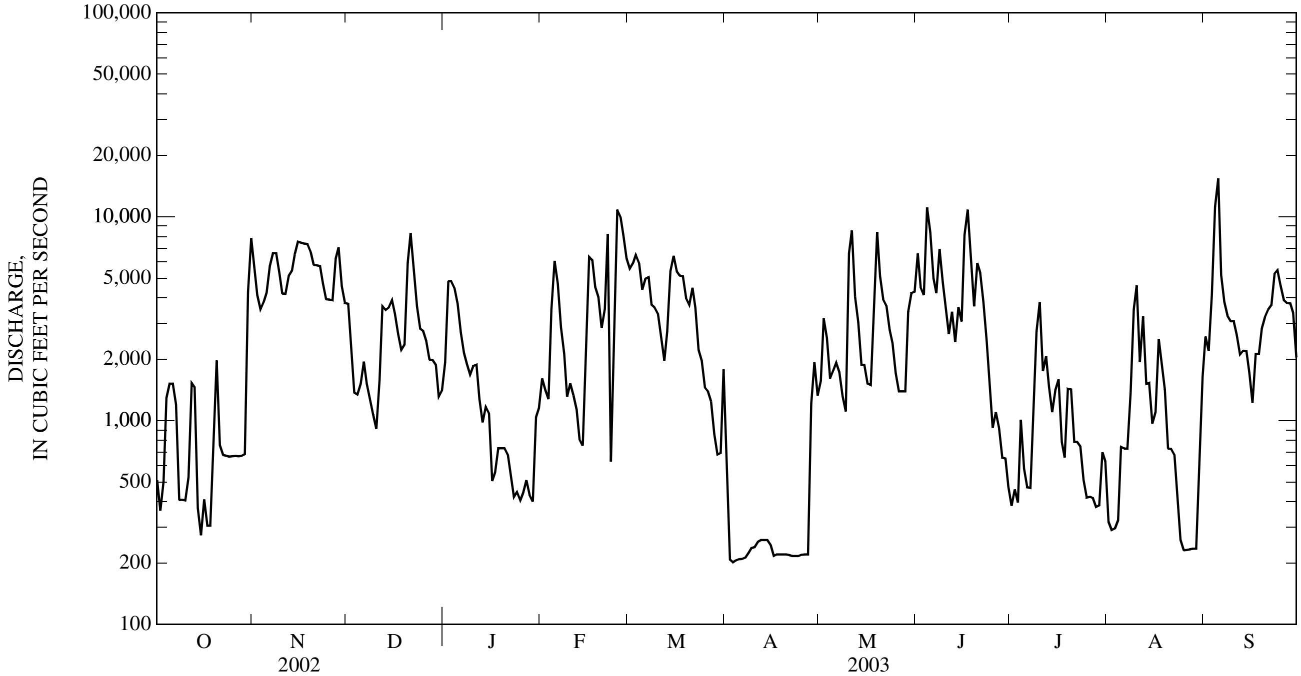
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,766	2,552	2,540	2,764	2,852	3,182	1,339	2,282	1,464	1,071	1,124	1,323
MAX	5,705	5,434	4,995	5,825	6,258	5,802	5,468	5,074	4,222	3,052	3,882	3,852
(WY)	(1977)	(2003)	(1973)	(1974)	(1994)	(1993)	(1966)	(1996)	(2003)	(1979)	(1989)	(2003)
MIN	484	159	361	596	729	1,073	52.2	141	122	124	19.0	490
(WY)	(1989)	(1979)	(2002)	(1977)	(1967)	(2000)	(1971)	(1991)	(1991)	(1999)	(1966)	(1967)

03189600 GAULEY RIVER BELOW SUMMERSVILLE DAM, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1966 - 2003	
ANNUAL TOTAL	730,097		960,126			
ANNUAL MEAN	2,000		2,630		2,018	
HIGHEST ANNUAL MEAN					2,741	1972
LOWEST ANNUAL MEAN					1,159	1999
HIGHEST DAILY MEAN	14,500	Apr 23	15,400	Sep 5	18,000	Aug 24, 1989
LOWEST DAILY MEAN	(e)45	Sep 25	202	Apr 3	2.4	(a)
ANNUAL SEVEN-DAY MINIMUM	218	Mar 12	210	Apr 2	2.5	Feb 10, 1967
MAXIMUM PEAK FLOW			15,800	Jun 4	18,200	Aug 24, 1989
MAXIMUM PEAK STAGE			18.66	Jun 4	19.39	Aug 24, 1989
INSTANTANEOUS LOW FLOW			199	(b)	1.9	(c)
10 PERCENT EXCEEDS	4,920		5,920		4,730	
50 PERCENT EXCEEDS	1,100		1,880		1,250	
90 PERCENT EXCEEDS	273		306		208	

a Feb. 10, 13-16, 1967.
b Apr. 2, 3.
c Feb. 16, 17, 1967.
e Estimated.



03190400 MEADOW RIVER NEAR MOUNT LOOKOUT, WV

LOCATION.--Lat 38°11'23", long 80°56'49", NAD27, Nicholas County, Hydrologic Unit 05050005, on right bank 1,000 ft upstream from mouth, and 2.5 mi northwest of Mount Lookout.

DRAINAGE AREA.--365 mi^2.

PERIOD OF RECORD.--September 1966 to September 1983, October 1985 to current year.

REVISED RECORDS.--WDR WV-99-1: 1998 (m).

GAGE.--Water-stage recorder with satellite telemeter. Elevation of gage is approximately 1,200 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 23	1000	*9,730	*10.69	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	146	1,460	940	684	431	1,140	401	617	1,920	185	126	233
2	106	1,070	747	1,550	484	1,340	1,080	591	1,530	186	124	291
3	82	794	626	2,180	606	1,700	1,360	544	1,190	270	125	352
4	67	654	522	2,260	1,720	1,600	1,150	480	2,260	456	115	1,930
5	59	627	529	1,810	2,430	1,520	962	422	2,270	384	160	2,400
6	49	1,460	555	1,460	1,630	2,340	786	462	1,620	341	458	1,410
7	43	1,980	446	1,130	1,260	2,500	1,070	491	1,490	614	303	1,080
8	40	1,540	419	935	936	1,970	2,440	465	2,200	1,270	1,050	752
9	36	1,170	403	850	627	1,650	2,700	432	2,060	985	1,330	482
10	36	918	356	944	e520	1,520	2,760	761	1,660	1,170	1,320	297
11	36	906	734	937	e430	1,250	3,700	1,260	1,260	1,330	748	226
12	40	1,700	1,820	722	e380	1,010	3,510	1,150	1,150	1,230	579	186
13	59	3,110	1,680	575	e330	909	2,390	960	858	857	433	156
14	97	2,240	2,040	e480	e290	1,480	1,640	755	786	593	386	138
15	92	1,650	1,990	e410	1,320	1,580	1,210	636	763	492	303	141
16	680	1,280	1,620	365	3,900	1,320	910	637	1,820	414	945	297
17	1,800	1,840	1,360	e310	2,370	1,190	700	561	3,570	325	2,160	277
18	1,040	1,990	1,200	e280	1,710	1,070	663	1,810	3,890	266	1,570	210
19	683	1,600	1,070	e260	1,390	894	1,070	4,480	3,230	769	929	2,290
20	499	1,460	2,420	e240	1,340	744	1,180	3,400	4,100	881	600	2,740
21	358	1,320	3,450	e220	1,540	890	1,110	3,290	3,140	500	416	1,590
22	279	1,410	2,320	e200	5,360	927	1,130	2,980	2,030	352	313	1,090
23	233	1,360	1,670	e190	9,190	798	1,070	2,030	1,360	298	256	1,220
24	192	1,190	1,270	182	6,600	668	871	1,470	920	279	207	1,070
25	167	1,080	1,350	e170	4,010	557	722	1,070	620	214	170	781
26	173	975	1,280	e160	2,360	486	662	801	445	173	146	609
27	370	1,580	1,110	e155	1,670	441	657	625	353	143	125	465
28	417	1,650	964	e150	1,350	380	571	527	303	123	109	427
29	1,050	1,340	816	170	---	342	524	622	256	129	121	353
30	2,510	1,140	693	223	---	352	539	886	214	143	247	289
31	1,970	---	642	373	---	382	---	999	---	135	204	---
TOTAL	13,409	42,494	37,042	20,575	56,184	34,950	39,538	36,214	49,268	15,507	16,078	23,782
MEAN	433	1,416	1,195	664	2,007	1,127	1,318	1,168	1,642	500	519	793
MAX	2,510	3,110	3,450	2,260	9,190	2,500	3,700	4,480	4,100	1,330	2,160	2,740
MIN	36	627	356	150	290	342	401	422	214	123	109	138
CFSM	1.19	3.88	3.27	1.82	5.50	3.09	3.61	3.20	4.50	1.37	1.42	2.17
IN.	1.37	4.33	3.78	2.10	5.73	3.56	4.03	3.69	5.02	1.58	1.64	2.42

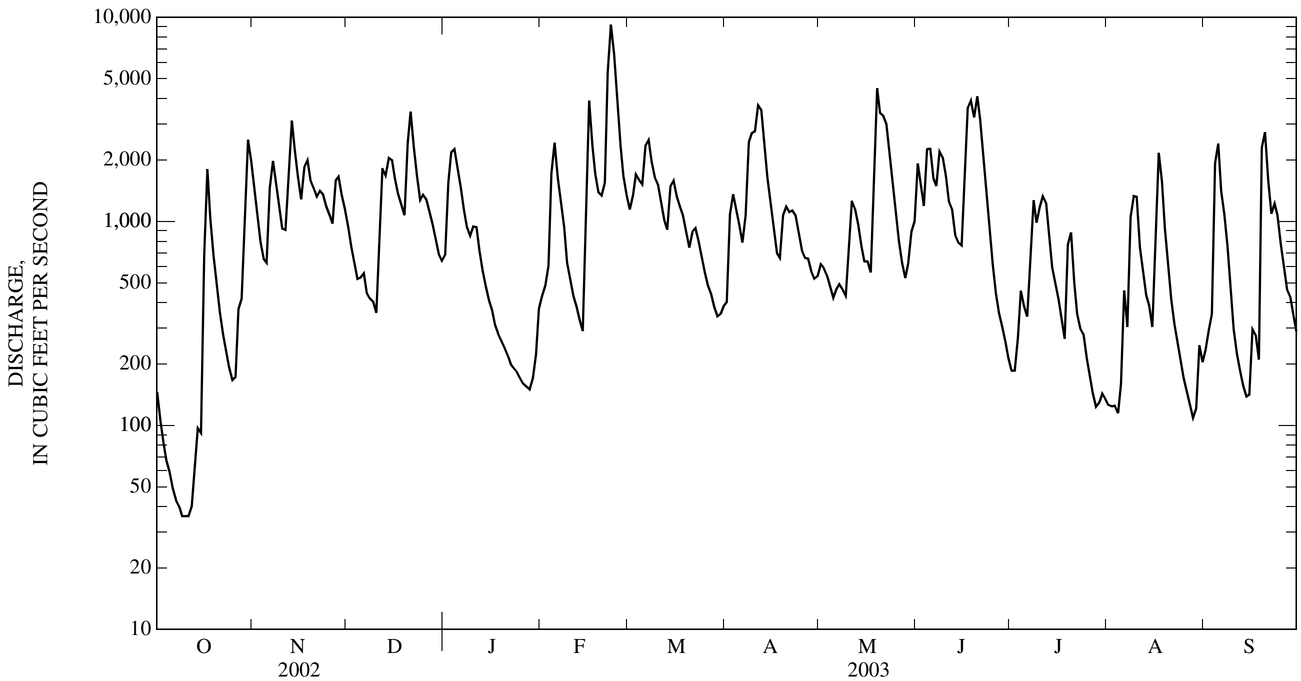
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	288	582	906	1,041	1,237	1,429	1,091	947	501	336	297	182
MAX	1,574	1,529	1,710	2,246	2,366	2,583	2,687	1,944	1,642	1,241	1,074	793
(WY)	(1977)	(1986)	(1973)	(1996)	(1998)	(1993)	(1987)	(1996)	(2003)	(2001)	(1969)	(2003)
MIN	8.18	25.4	158	140	355	599	368	271	53.7	32.2	12.9	13.1
(WY)	(1992)	(2002)	(2002)	(1977)	(2002)	(1988)	(1995)	(1976)	(1999)	(1991)	(1987)	(1983)

03190400 MEADOW RIVER NEAR MOUNT LOOKOUT, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1966 - 2003	
ANNUAL TOTAL	254,481.4		385,041			
ANNUAL MEAN	697		1,055		731	
HIGHEST ANNUAL MEAN					1,055	2003
LOWEST ANNUAL MEAN					410	1988
HIGHEST DAILY MEAN	4,880	Jan 25	9,190	Feb 23	14,200	Feb 26, 1972
LOWEST DAILY MEAN	5.1	Sep 14	36	(a)	4.1	(b)
ANNUAL SEVEN-DAY MINIMUM	6.7	Sep 10	40	Oct 6	5.7	Oct 8, 1991
MAXIMUM PEAK FLOW			9,730	Feb 23	20,600	Jul 29, 2001
MAXIMUM PEAK STAGE			10.69	Feb 23	13.92	Jul 29, 2001
INSTANTANEOUS LOW FLOW			35	(c)	3.0	Aug 22, 1987
ANNUAL RUNOFF (CFSM)	1.91		2.89		2.00	
ANNUAL RUNOFF (INCHES)	25.94		39.24		27.23	
10 PERCENT EXCEEDS	1,730		2,250		1,820	
50 PERCENT EXCEEDS	368		794		400	
90 PERCENT EXCEEDS	35		169		43	

a Oct. 9-11.
b Aug. 21, 22, 1987.
c Oct. 9, 10.
e Estimated.



03191500 PETERS CREEK NEAR LOCKWOOD, WV

LOCATION.--Lat 38°15'45", long 81°01'24", NAD27, Nicholas County, Hydrologic Unit 05050005, on left bank, at private bridge off of State Route 39, 0.9 mi downstream from Tate Run, 1.5 mi upstream from Line Creek and Lockwood, and at mile 5.2.

DRAINAGE AREA.--40.2 mi^2.

PERIOD OF RECORD.--October 1945 to September 1971, October 1979 to September 1982, October 1996 to September 1998. February to September 2003.

REVISED RECORDS.--WDR WV-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,064.77 ft above NGVD of 1929. Prior to February 2003 at site 0.1 mi downstream at present datum. Prior to September 30, 1971, at site 0.6 mi downstream at datum 1,059.52 ft above sea level. Prior to November 2, 1945, nonrecording gage and November 2, 1945, to Aug. 2, 1955, water-stage recorder near present site at datum 1,072.19 ft above sea level.

REMARKS.--Records poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 16	1230	(a)*8,340	*18.35	Sep 4	1030	2,090	10.88
Aug 9	1800	1,500	9.83				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	126	50	101	147	32	35	144
2	---	---	---	---	---	126	64	88	102	34	28	185
3	---	---	---	---	---	114	65	75	152	30	24	232
4	---	---	---	---	---	101	60	61	419	28	24	1,110
5	---	---	---	---	---	96	59	65	218	24	33	303
6	---	---	---	---	---	86	49	77	125	39	23	130
7	---	---	---	---	---	73	143	69	176	81	150	81
8	---	---	---	---	---	66	167	63	168	99	176	57
9	---	---	---	---	---	61	163	55	113	73	284	44
10	---	---	---	---	---	54	150	61	80	73	244	37
11	---	---	---	---	---	50	312	62	68	69	101	31
12	---	---	---	---	---	49	200	51	63	47	59	28
13	---	---	---	---	---	83	135	45	54	37	42	26
14	---	---	---	---	---	129	104	40	51	29	38	26
15	---	---	---	---	---	114	87	60	92	25	29	32
16	---	---	---	---	---	95	76	54	2,220	23	61	27
17	---	---	---	---	---	81	67	49	499	21	84	22
18	---	---	---	---	---	70	101	229	265	20	52	24
19	---	---	---	---	---	59	119	232	224	97	38	300
20	---	---	---	---	---	54	110	125	397	44	30	167
21	---	---	---	---	---	51	104	100	289	31	25	89
22	---	---	---	---	---	46	91	76	182	27	23	64
23	---	---	---	---	---	43	77	78	119	29	23	63
24	---	---	---	---	---	40	66	212	84	24	20	45
25	---	---	---	---	171	38	62	124	63	20	17	38
26	---	---	---	---	135	40	69	85	51	18	16	35
27	---	---	---	---	121	38	66	67	50	17	16	31
28	---	---	---	---	127	35	56	57	43	51	15	30
29	---	---	---	---	---	36	63	124	36	135	14	28
30	---	---	---	---	---	43	70	160	31	41	26	24
31	---	---	---	---	---	44	---	151	---	36	73	---
TOTAL	---	---	---	---	---	2,141	3,005	2,896	6,581	1,354	1,823	3,453
MEAN	---	---	---	---	---	69.1	100	93.4	219	43.7	58.8	115
MAX	---	---	---	---	---	129	312	232	2,220	135	284	1,110
MIN	---	---	---	---	---	35	49	40	31	17	14	22
CFSM	---	---	---	---	---	1.72	2.49	2.32	5.46	1.09	1.46	2.86
IN.	---	---	---	---	---	1.98	2.78	2.68	6.09	1.25	1.69	3.20

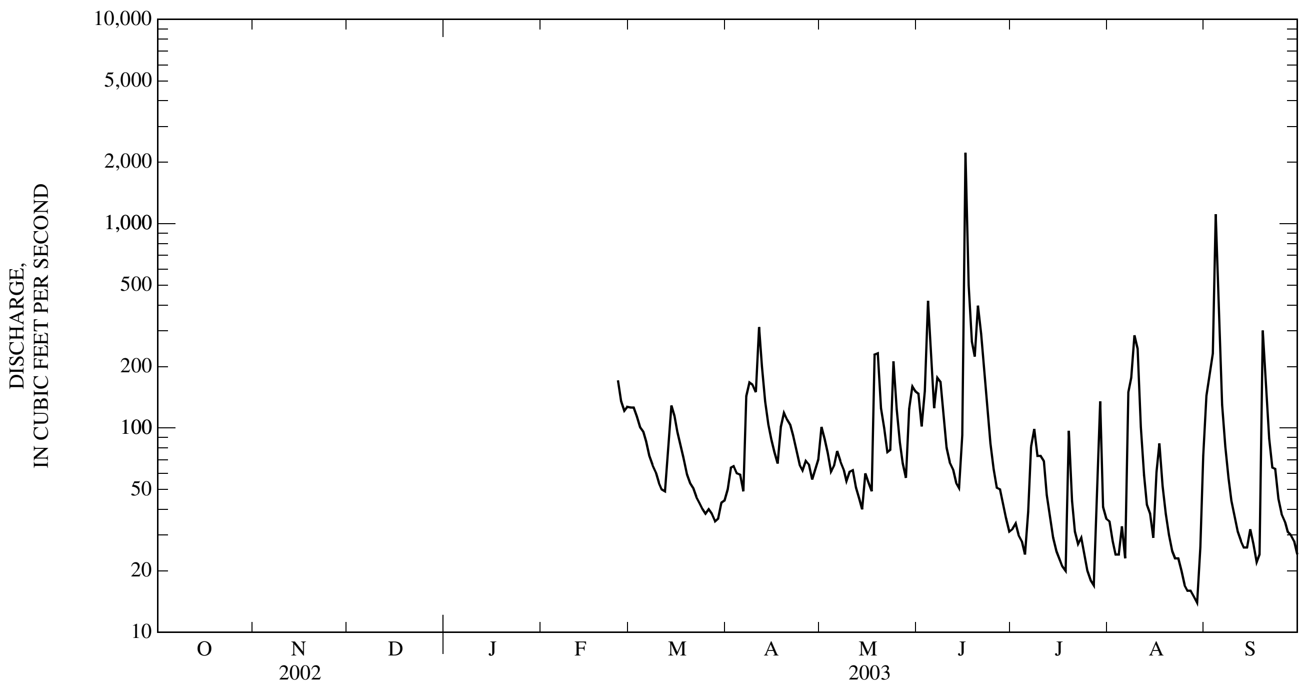
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	17.1	42.2	77.0	95.6	115	134	94.1	72.2	45.5	33.2	31.4	16.2
MAX	105	131	168	191	204	297	180	171	219	134	172	115
(WY)	(1980)	(1963)	(1951)	(1950)	(1955)	(1963)	(1965)	(1967)	(2003)	(1958)	(1958)	(2003)
MIN	0.12	0.52	4.60	22.0	30.8	52.6	23.5	13.3	2.32	1.85	0.24	0.29
(WY)	(1954)	(1954)	(1966)	(1966)	(1954)	(1966)	(1963)	(1964)	(1966)	(1957)	(1957)	(1946)

03191500 PETERS CREEK NEAR LOCKWOOD, WV--Continued

SUMMARY STATISTICS	WATER YEARS 1946 - 2003	
ANNUAL MEAN	63.5	
HIGHEST ANNUAL MEAN	108	1950
LOWEST ANNUAL MEAN	29.3	1966
HIGHEST DAILY MEAN	3,000	Aug 2, 1958
LOWEST DAILY MEAN	0.00	(b)
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 3, 1957
MAXIMUM PEAK FLOW	(a)8,340	Jun 16, 2003
MAXIMUM PEAK STAGE	18.35	Jun 16, 2003
INSTANTANEOUS LOW FLOW	0.00	(b)
ANNUAL RUNOFF (CFSM)	1.58	
ANNUAL RUNOFF (INCHES)	21.48	
10 PERCENT EXCEEDS	150	
50 PERCENT EXCEEDS	27	
90 PERCENT EXCEEDS	3.2	

a From rating curve extended above 7,800 ft^3/s on basis of step-backwater analysis.
b Sept. 6-9, 1957.



03192000 GAULEY RIVER ABOVE BELVA, WV

LOCATION.--Lat 38°14'00", long 81°10'52", NAD27, Nicholas County, Hydrologic Unit 05050005, on right bank 0.5 mi upstream from Belva, 1.0 mi upstream from Twentymile Creek, and at mile 6.3.

DRAINAGE AREA.--1,317 mi^2.

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

REVISED RECORDS.--WSP 873: 1938. WSP 1275: 1929-30. WDR WV-82-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 669.00 ft above NGVD of 1929, adjustment of 1912.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since May 1965 by Summersville Lake.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1918 reached a stage of about 30 ft, discharge of about 112,000 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Maximum discharge, 26,500 ft^3/s, Feb. 22, gage height, 13.10 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

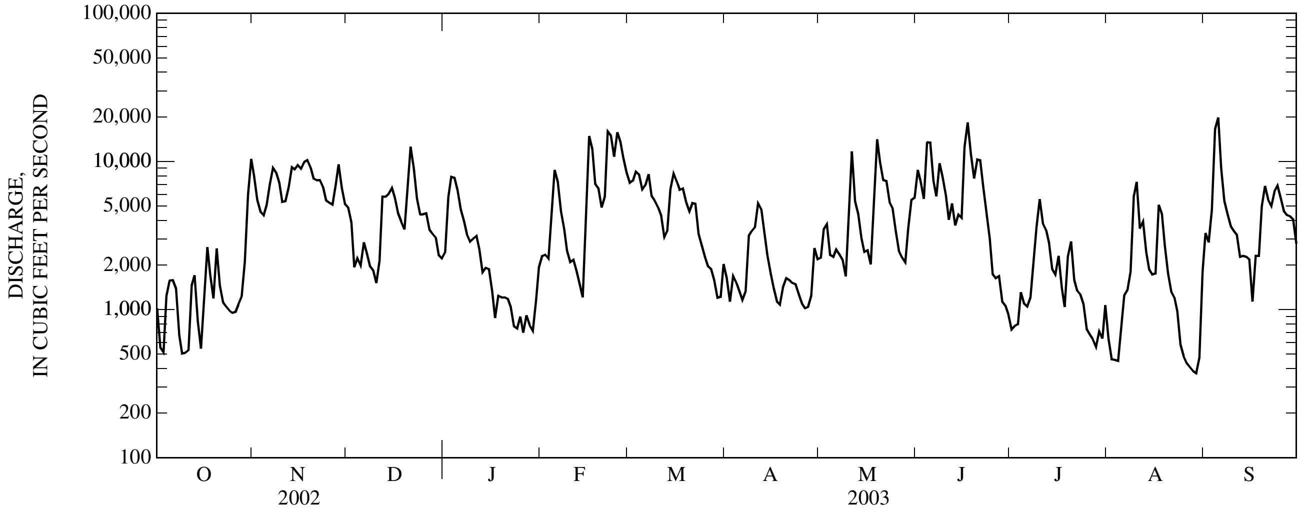
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,020	7,970	4,890	2,430	2,290	7,170	1,630	2,240	8,750	735	636	3,290
2	555	5,470	3,890	5,760	2,340	7,410	1,130	3,460	7,320	774	463	2,840
3	515	4,590	1,930	7,860	2,200	8,540	1,690	3,750	5,590	793	458	4,710
4	1,240	4,340	2,230	7,770	4,450	8,140	1,540	2,340	13,500	1,310	450	16,500
5	1,570	5,060	2,000	6,350	8,760	6,450	1,340	2,270	13,400	1,100	729	19,800
6	1,580	6,990	2,840	4,710	7,290	6,920	1,160	2,540	7,370	1,050	1,240	9,040
7	1,390	9,070	2,410	3,940	4,610	8,210	1,330	2,360	5,810	1,200	1,350	5,410
8	675	8,420	1,970	3,240	3,500	5,870	3,140	2,170	9,690	2,260	1,810	4,410
9	505	7,140	1,840	2,890	2,480	5,450	3,380	1,680	7,770	3,610	5,810	3,660
10	511	5,340	1,510	3,010	2,090	4,940	3,590	4,730	5,870	5,560	7,270	3,420
11	530	5,400	2,140	3,140	2,160	4,310	5,240	11,700	4,050	3,830	3,520	3,200
12	1,460	6,700	5,800	2,550	1,810	3,080	4,760	5,360	5,200	3,450	3,930	2,270
13	1,700	9,150	5,800	1,780	1,490	3,380	3,310	4,400	3,690	2,820	2,430	2,310
14	837	8,820	6,050	1,910	1,210	6,510	2,330	3,030	4,370	1,880	1,870	2,270
15	544	9,440	6,570	1,870	3,490	8,310	1,770	2,450	4,170	1,730	1,730	2,180
16	1,220	8,930	5,680	1,330	14,800	7,330	1,390	2,510	12,500	2,310	1,750	1,130
17	2,640	9,920	4,460	876	12,100	6,410	1,130	2,020	18,400	1,410	5,090	2,310
18	1,710	10,200	3,920	1,240	7,050	6,560	1,080	5,190	11,200	1,040	4,400	2,300
19	1,190	9,180	3,490	1,210	6,580	5,320	1,420	14,100	7,690	2,280	2,700	4,990
20	2,580	7,660	6,960	1,210	4,880	4,600	1,630	9,910	10,300	2,880	1,760	6,820
21	1,450	7,450	12,600	1,180	5,780	5,240	1,580	7,480	10,200	1,580	1,330	5,520
22	1,120	7,490	9,010	1,040	16,000	5,180	1,510	7,390	6,630	1,340	1,210	5,020
23	1,050	6,780	5,620	770	15,000	3,240	1,480	5,320	4,550	1,260	976	6,310
24	991	5,440	4,390	745	10,800	2,710	1,270	4,850	3,000	1,080	577	6,870
25	951	5,260	4,400	894	15,700	2,260	1,100	3,410	1,740	739	483	5,680
26	964	5,120	4,460	699	13,500	1,970	1,020	2,500	1,630	677	434	4,630
27	1,080	6,950	3,460	912	10,500	1,880	1,040	2,250	1,680	633	406	4,330
28	1,220	9,550	3,240	786	8,390	1,570	1,240	2,090	1,130	560	385	4,250
29	2,110	6,650	3,040	720	---	1,200	2,600	3,520	1,060	716	371	4,070
30	5,960	5,150	2,330	1,150	---	1,220	2,180	5,480	929	637	474	2,790
31	10,400	---	2,220	1,930	---	2,030	---	5,680	---	1,070	1,810	---
TOTAL	51,268	215,630	131,150	75,902	191,250	153,410	59,010	138,180	199,189	52,314	57,852	152,330
MEAN	1,654	7,188	4,231	2,448	6,830	4,949	1,967	4,457	6,640	1,688	1,866	5,078
MAX	10,400	10,200	12,600	7,860	16,000	8,540	5,240	14,100	18,400	5,560	7,270	19,800
MIN	505	4,340	1,510	699	1,210	1,200	1,020	1,680	929	560	371	1,130

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2003, BY WATER YEAR (WY) [REGULATED, UNADJUSTED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,949	3,188	3,634	3,873	4,405	4,960	2,753	3,346	1,966	1,488	1,453	1,440
MAX	7,547	8,434	7,270	8,493	9,534	9,591	7,050	7,802	6,640	4,779	5,053	5,078
(WY)	(1977)	(1986)	(1973)	(1974)	(1994)	(1993)	(1987)	(1996)	(2003)	(2001)	(1989)	(2003)
MIN	124	70.8	85.6	276	1,471	2,187	611	538	236	187	36.8	72.5
(WY)	(1966)	(1966)	(1966)	(1966)	(2002)	(2000)	(1986)	(1991)	(1991)	(1999)	(1965)	(1965)

03192000 GAULEY RIVER ABOVE BELVA, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1965 - 2003	
ANNUAL TOTAL	1,067,121		1,477,485			
ANNUAL MEAN	2,924		4,048		2,866	
HIGHEST ANNUAL MEAN					4,048	2003
LOWEST ANNUAL MEAN					1,452	1966
HIGHEST DAILY MEAN	23,000	May 8	19,800	Sep 5	32,000	Jul 29, 2001
LOWEST DAILY MEAN	191	Sep 26	371	Aug 29	11	Sep 10, 1965
ANNUAL SEVEN-DAY MINIMUM	334	Jun 20	447	Aug 24	17	Sep 4, 1965
MAXIMUM PEAK FLOW			26,500	Feb 22	47,200	Jul 29, 2001
MAXIMUM PEAK STAGE			13.10	Feb 22	19.09	Jul 29, 2001
INSTANTANEOUS LOW FLOW			367	Aug 29	9.6	Sep 11, 1965
10 PERCENT EXCEEDS	6,850		8,620		6,810	
50 PERCENT EXCEEDS	1,510		2,890		1,670	
90 PERCENT EXCEEDS	513		905		377	



STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1964, BY WATER YEAR (WY) [UNREGULATED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	819	1,785	3,027	4,022	4,542	5,790	3,963	2,903	1,552	1,524	1,264	532
MAX	4,859	5,609	6,421	7,870	8,926	11,660	8,691	5,737	6,164	6,141	4,871	2,824
(WY)	(1938)	(1930)	(1943)	(1937)	(1939)	(1963)	(1958)	(1929)	(1940)	(1932)	(1958)	(1950)
MIN	5.90	23.1	410	437	1,084	3,000	1,166	547	156	22.4	26.7	13.3
(WY)	(1954)	(1931)	(1940)	(1940)	(1934)	(1937)	(1942)	(1964)	(1936)	(1930)	(1930)	(1930)

SUMMARY STATISTICS	WATER YEARS 1929 - 1964	
ANNUAL MEAN	2,631	
HIGHEST ANNUAL MEAN	3,803	1950
LOWEST ANNUAL MEAN	1,606	1941
HIGHEST DAILY MEAN	60,900	Jul 5, 1932
LOWEST DAILY MEAN	3.2	Oct 21, 1953
ANNUAL SEVEN-DAY MINIMUM	3.6	Oct 20, 1953
INSTANTANEOUS PEAK FLOW	(*)105,000	Jul 5, 1932
INSTANTANEOUS PEAK STAGE	28.60	Jul 5, 1932
INSTANTANEOUS LOW FLOW	3.2	Oct 21, 1953
10 PERCENT EXCEEDS	6,280	
50 PERCENT EXCEEDS	1,390	
90 PERCENT EXCEEDS	129	

* From rating curve extended above 65,000 ft^3/s on basis of velocity-area studies and inflow and storage adjustment to record for Kanawha River at Kanawha Falls.

03193000 KANAWHA RIVER AT KANAWHA FALLS, WV

LOCATION.--Lat 38°08'17", long 81°12'52", NAD27, Fayette County, Hydrologic Unit 05050006, on right bank 150 ft downstream from bridge, 0.8 mi downstream from village of Kanawha Falls, 2.0 mi downstream from Gauley Bridge, 2.0 mi downstream from confluence of New River and Gauley River, and at mile 94.3.

DRAINAGE AREA.--8,371 mi^2.

PERIOD OF RECORD.--March 1877 to current year. October 1916 to September 1918 and October 1927 to October 1928, published as "at Lock 2, Montgomery".

REVISED RECORDS.--WSP 923: 1878, 1886, 1897, 1899, 190l-3. WSP 1305: 1902(M), 1940.WSP 1335: 1931. WDR WV-82-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 621.20 ft above NGVD of 1929. Prior to Oct. 27, 1928, nonrecording gages at several sites within 9.0 mi of present site at various datums. Oct. 27, 1928, to Sept. 30, 1964, water-stage recorder at present site at datum 2.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1939 by Claytor Lake, since 1949 by Bluestone Lake, and since 1965 by Summersville Lake.

PEAK DISCHARGES FOR CURRENT YEAR.--Maximum discharge, 123,000 ft^3/s, Feb. 23, gage height, 19.77 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6,690	25,400	13,000	12,600	8,240	51,300	10,200	12,500	21,900	8,970	9,440	9,320
2	4,270	18,500	10,500	20,300	8,590	52,200	12,000	13,300	23,800	11,700	7,320	10,900
3	3,960	14,500	7,770	39,500	7,610	54,400	20,300	16,300	19,700	24,500	7,610	13,000
4	4,120	10,300	7,720	37,400	10,400	45,100	21,100	14,100	27,000	38,400	7,870	24,800
5	3,830	10,300	7,860	32,200	19,200	32,200	18,300	13,000	37,100	36,900	9,550	37,800
6	3,540	14,600	9,790	23,600	21,700	30,300	16,500	15,800	29,400	24,800	10,500	31,600
7	3,310	27,500	10,500	19,600	17,200	37,600	14,300	19,300	23,100	17,900	10,300	19,000
8	2,570	25,000	10,100	18,000	15,200	31,300	28,900	18,000	26,900	21,400	12,000	14,100
9	1,990	20,000	7,560	15,100	11,100	24,700	45,100	16,200	36,300	20,400	22,800	11,600
10	1,980	14,800	6,050	16,000	7,920	20,200	53,200	17,200	38,100	22,200	29,700	10,300
11	1,990	13,100	8,550	14,800	7,780	22,800	63,300	31,300	29,000	18,900	25,200	9,370
12	2,870	22,800	27,400	13,900	8,820	19,100	66,000	33,200	23,800	17,400	21,800	7,800
13	3,580	46,300	28,100	9,040	8,720	16,200	56,300	24,200	24,900	16,100	20,600	6,680
14	2,890	42,100	35,600	8,710	8,140	19,000	47,100	17,700	26,900	12,400	17,300	7,440
15	2,610	30,800	41,700	10,100	12,200	26,300	37,700	14,100	24,400	11,000	14,600	7,040
16	5,160	23,900	32,500	9,130	53,000	23,700	24,100	13,900	37,200	13,400	15,000	6,320
17	13,200	27,100	23,700	7,860	55,000	18,300	18,600	14,000	64,300	11,900	24,000	7,210
18	14,100	34,700	20,700	7,340	42,600	19,000	16,000	21,100	62,800	9,070	21,100	7,680
19	11,100	33,700	18,700	6,310	32,100	24,200	24,000	64,800	55,300	9,780	16,500	12,800
20	10,200	26,800	19,700	5,890	23,700	20,000	30,000	51,600	56,400	10,600	12,600	26,000
21	6,240	20,200	43,600	5,570	24,800	24,000	28,500	38,900	54,300	9,200	9,550	26,300
22	5,200	23,100	41,500	5,410	65,500	34,800	24,900	36,200	40,900	7,580	8,900	17,500
23	4,800	25,300	26,700	5,150	106,000	25,700	20,500	30,400	28,600	7,530	8,090	16,400
24	4,190	22,900	20,600	5,000	85,400	19,700	19,100	25,100	21,200	8,580	7,380	23,400
25	3,520	16,200	23,200	7,130	77,500	15,000	16,700	21,600	15,900	8,200	6,600	22,300
26	3,550	14,900	32,400	6,050	66,700	15,500	15,900	17,900	13,600	6,970	6,280	17,500
27	4,330	18,800	25,500	4,680	58,700	13,900	14,500	16,200	12,100	6,170	5,800	13,800
28	4,830	23,600	20,900	3,980	53,200	11,600	12,800	15,400	10,400	5,570	5,380	12,700
29	8,040	19,200	15,800	5,880	---	11,600	13,900	15,100	9,410	5,690	5,200	16,100
30	19,900	14,400	12,100	5,680	---	10,200	13,700	17,800	8,980	5,750	5,480	14,800
31	36,100	---	12,200	6,820	---	8,810	---	19,300	---	9,690	5,910	---
TOTAL	204,660	680,800	622,000	388,730	917,020	778,710	803,500	695,500	903,690	438,650	390,360	461,560
MEAN	6,602	22,690	20,060	12,540	32,750	25,120	26,780	22,440	30,120	14,150	12,590	15,390
MAX	36,100	46,300	43,600	39,500	106,000	54,400	66,000	64,800	64,300	38,400	29,700	37,800
MIN	1,980	10,300	6,050	3,980	7,610	8,810	10,200	12,500	8,980	5,570	5,200	6,320

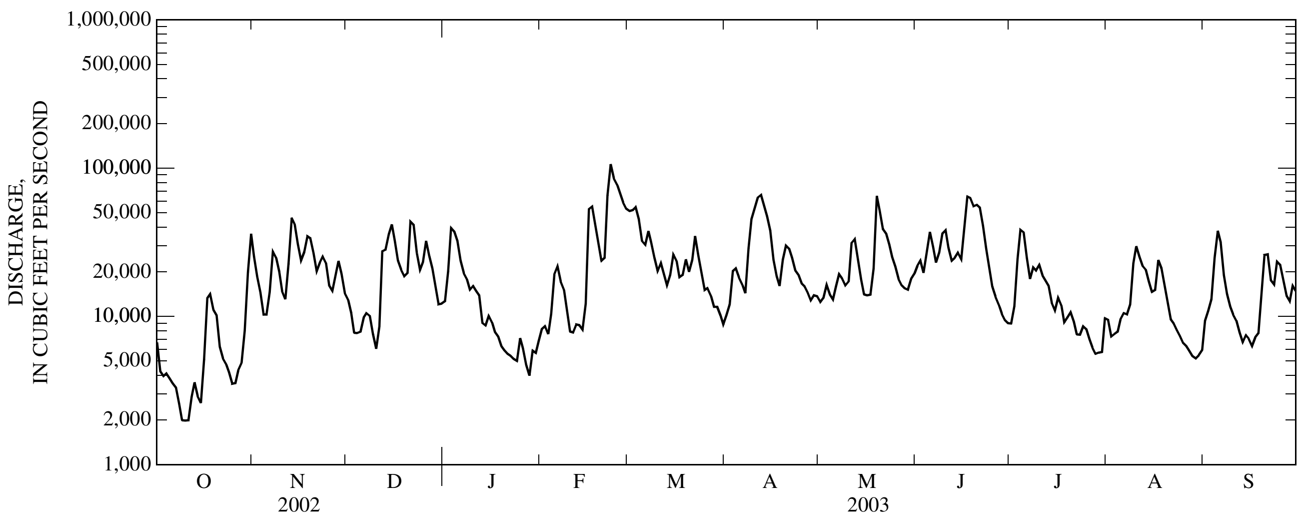
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY) [REGULATED, UNADJUSTED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5,757	8,625	12,690	15,950	20,130	23,540	17,880	14,650	9,225	6,403	5,917	4,786
MAX	24,980	24,760	29,690	38,490	42,410	50,300	50,240	29,510	30,120	16,040	23,350	17,540
(WY)	(1977)	(1986)	(1973)	(1996)	(1957)	(1955)	(1987)	(1996)	(2003)	(2001)	(1940)	(1989)
MIN	1,452	1,669	2,174	2,412	5,457	7,583	5,065	4,051	2,450	2,167	1,945	1,510
(WY)	(1954)	(1954)	(1966)	(1940)	(2002)	(1988)	(1986)	(1941)	(1999)	(1966)	(1944)	(1953)

03193000 KANAWHA RIVER AT KANAWHA FALLS, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939 - 2003	
ANNUAL TOTAL	3,997,050		7,285,180			
ANNUAL MEAN	10,950		19,960		12,090	
HIGHEST ANNUAL MEAN					19,960	2003
LOWEST ANNUAL MEAN					6,792	1988
HIGHEST DAILY MEAN	58,500	Apr 23	106,000	Feb 23	163,000	Aug 15, 1940
LOWEST DAILY MEAN	1,780	(a)	1,980	Oct 10	970	Sep 30, 1953
ANNUAL SEVEN-DAY MINIMUM	1,880	Jan 1	2,550	Oct 8	1,230	Sep 23, 1963
MAXIMUM PEAK FLOW			123,000	Feb 23	248,000	Aug 15, 1940
MAXIMUM PEAK STAGE			19.77	Feb 23	(b)29.60	Aug 15, 1940
INSTANTANEOUS LOW FLOW			1,910	Oct 11	(c)	(c)
10 PERCENT EXCEEDS	26,900		38,200		26,800	
50 PERCENT EXCEEDS	5,880		16,200		7,520	
90 PERCENT EXCEEDS	2,020		5,850		2,570	

a Jan. 3, Sept. 11, 12.
b 31.60 ft gage height at current datum.
c Not determined.



STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1877 - 1938, BY WATER YEAR (WY) [UNREGULATED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6,529	8,513	12,670	19,170	21,700	24,400	19,440	14,670	10,260	7,556	6,486	5,279
MAX	23,470	23,460	34,030	38,890	52,880	52,620	46,930	38,140	35,870	20,210	22,440	21,070
(WY)	(1938)	(1878)	(1902)	(1882)	(1884)	(1899)	(1901)	(1901)	(1901)	(1916)	(1901)	(1888)
MIN	1,133	1,514	2,691	5,600	3,181	10,160	8,151	4,797	2,546	1,290	1,394	1,308
(WY)	(1931)	(1923)	(1931)	(1931)	(1934)	(1925)	(1915)	(1930)	(1930)	(1930)	(1925)	(1930)

SUMMARY STATISTICS	WATER YEARS 1877 - 1938	
ANNUAL MEAN	13,020	
HIGHEST ANNUAL MEAN	21,210	1901
LOWEST ANNUAL MEAN	7,591	1904
HIGHEST DAILY MEAN	266,000	May 23, 1901
LOWEST DAILY MEAN	690	Oct 29, 1921
ANNUAL SEVEN-DAY MINIMUM	984	Oct 7, 1930
INSTANTANEOUS PEAK FLOW	(*)320,000	Sep 14, 1878
INSTANTANEOUS PEAK STAGE	(#)37.80	Sep 14, 1878
INSTANTANEOUS LOW FLOW	640	Aug 15, 1930
10 PERCENT EXCEEDS	27,900	
50 PERCENT EXCEEDS	8,330	
90 PERCENT EXCEEDS	2,550	

* From gage-height relationship and rating curve extended above 150,000 ft^3/s.
\# Site then in use, 39.80 ft gage height at current datum.

03194700 ELK RIVER BELOW WEBSTER SPRINGS, WV

LOCATION.--Lat 38°35'50", long 80°29'26", NAD27, Webster County, Hydrologic Unit 05050007, on right bank 200 ft upstream from bridge on County Highway 7, 6.5 mi upstream from town of Centralia, 8.9 mi southwest of Salisburg Station, 8.9 mi northwest of Webster Springs, and at mile 125.2.

DRAINAGE AREA.--266 mi^2.

PERIOD OF RECORD.--October 1929 to September 1959 (estimated annual maximum discharge only), October 1959 to September 1983, October 1985 to current year.

REVISED RECORDS.--WDR WV-82-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Elevation of gage is approximately 1,020.1 ft above NGVD of 1929, from barometric leveling.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect, doubtful gage-height record), which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1861, probably in September, reached a stage of 26.34 ft and flood of July 26, 1896, reached a stage of 25.87 ft, present datum, at site 0.2 mi upstream, from levels to floodmarks pointed out by a local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 23	1030	9,240	9.63	Sep 19	1000	8,510	9.37
May 10	1700	*12,600	*10.80				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	275	1,370	702	945	553	682	384	414	2,760	139	118	1,830
2	210	997	568	2,930	506	1,010	1,470	1,200	2,140	149	116	1,920
3	170	735	493	1,810	500	1,400	1,800	1,030	1,420	150	114	2,760
4	142	594	405	1,580	e1,680	1,180	1,250	771	3,380	179	97	4,320
5	121	549	422	1,170	e2,260	1,170	928	677	2,210	206	114	3,040
6	106	2,030	444	916	e1,320	2,580	699	776	1,380	159	117	1,490
7	90	2,140	371	709	952	2,520	1,280	706	1,530	141	111	878
8	77	1,460	346	585	679	1,690	2,320	591	2,160	177	153	562
9	68	1,070	318	533	502	1,730	2,220	548	1,500	752	366	391
10	70	824	287	619	e410	1,720	1,970	7,130	1,050	1,240	519	294
11	102	770	369	582	e340	1,270	2,110	5,030	731	772	870	233
12	180	1,420	1,260	432	e300	960	1,830	2,220	633	520	1,550	188
13	250	2,780	1,060	376	e260	1,910	1,340	1,460	552	372	755	157
14	401	1,660	1,400	e340	e240	4,400	971	1,010	1,030	283	470	145
15	363	1,130	1,310	e310	538	2,560	730	782	774	317	328	160
16	1,160	833	1,060	e290	1,470	2,160	581	803	727	317	362	267
17	2,420	1,420	855	e270	1,210	2,170	481	632	1,240	234	3,060	263
18	1,350	1,630	717	e250	922	1,980	415	756	1,280	183	1,730	192
19	867	1,300	668	e240	673	1,620	410	1,430	998	272	933	4,620
20	722	1,480	3,170	e230	628	1,380	419	985	1,180	249	550	2,930
21	733	1,250	2,710	e220	826	1,660	375	1,010	1,340	182	363	1,440
22	584	1,220	1,660	e210	4,670	1,150	373	1,170	996	148	273	841
23	455	1,080	1,230	e200	7,810	844	414	918	703	131	219	942
24	365	863	899	192	3,310	645	399	742	506	131	177	737
25	307	837	855	e185	1,900	523	363	573	382	123	144	509
26	315	895	789	e180	1,330	465	354	458	299	99	120	413
27	558	1,510	635	e175	987	444	394	405	247	83	101	338
28	467	1,390	544	e170	800	367	375	406	215	82	120	312
29	840	1,040	476	214	---	331	349	1,030	186	181	112	286
30	3,510	832	427	423	---	374	349	1,240	160	188	121	247
31	1,980	---	414	571	---	382	---	1,030	---	143	305	---
TOTAL	19,258	37,109	26,864	17,857	37,576	43,277	27,353	37,933	33,709	8,302	14,488	32,705
MEAN	621	1,237	867	576	1,342	1,396	912	1,224	1,124	268	467	1,090
MAX	3,510	2,780	3,170	2,930	7,810	4,400	2,320	7,130	3,380	1,240	3,060	4,620
MIN	68	549	287	170	240	331	349	405	160	82	97	145
CFSM	2.34	4.65	3.26	2.17	5.05	5.25	3.43	4.60	4.22	1.01	1.76	4.10
IN.	2.69	5.19	3.76	2.50	5.25	6.05	3.83	5.30	4.71	1.16	2.03	4.57

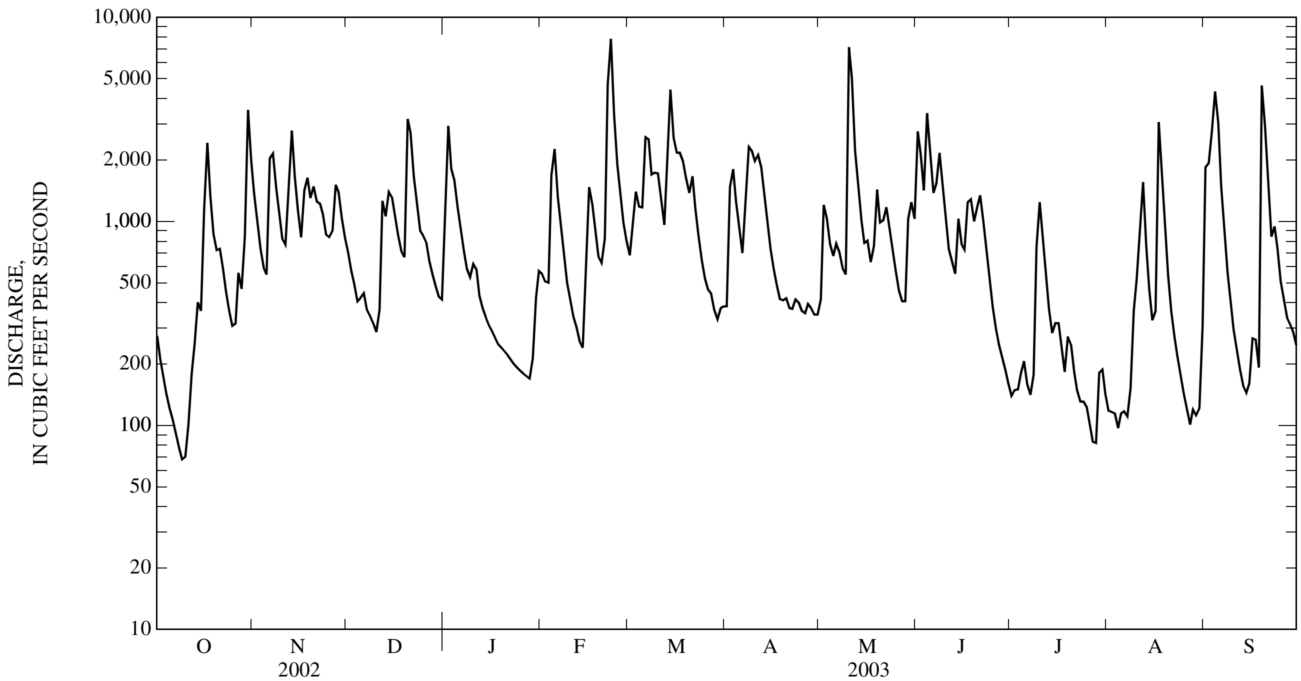
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	328	662	879	894	1,040	1,333	1,039	797	479	365	311	232
MAX	1,376	2,293	1,940	1,866	2,124	2,820	1,784	2,077	1,435	958	1,171	1,090
(WY)	(1977)	(1986)	(1973)	(1996)	(1994)	(1963)	(2002)	(1996)	(1974)	(1996)	(1989)	(2003)
MIN	15.1	45.1	199	202	227	731	312	137	48.9	31.6	23.3	16.4
(WY)	(1964)	(2002)	(1966)	(1977)	(1978)	(2000)	(1963)	(1964)	(1965)	(1999)	(1993)	(1999)

03194700 ELK RIVER BELOW WEBSTER SPRINGS, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1960 - 2003	
ANNUAL TOTAL	270,812		336,431			
ANNUAL MEAN	742		922		693	
HIGHEST ANNUAL MEAN					997	1996
LOWEST ANNUAL MEAN					415	1999
HIGHEST DAILY MEAN	8,760	Apr 22	7,810	Feb 23	15,200	Apr 26, 1989
LOWEST DAILY MEAN	13	Sep 14	68	Oct 9	4.9	Sep 12, 1995
ANNUAL SEVEN-DAY MINIMUM	17	Sep 9	91	Oct 5	5.2	Sep 9, 1995
MAXIMUM PEAK FLOW			12,600	May 10	(a)38,000	Nov 4, 1985
MAXIMUM PEAK STAGE			10.80	May 10	(b)17.20	Nov 4, 1985
INSTANTANEOUS LOW FLOW			63	Oct 10	4.8	(c)
ANNUAL RUNOFF (CFSM)	2.79		3.47		2.61	
ANNUAL RUNOFF (INCHES)	37.87		47.05		35.41	
10 PERCENT EXCEEDS	1,490		1,980		1,630	
50 PERCENT EXCEEDS	422		633		385	
90 PERCENT EXCEEDS	73		158		59	

a From rating curve extended above 24,000 ft^3/s.
b From floodmarks.
c Sept. 11-13, 1995.
e Estimated.



03197000 ELK RIVER AT QUEEN SHOALS, WV

LOCATION.--Lat 38°28'15", long 81°17'03", NAD27, Kanawha County, Hydrologic Unit 05050007, on right bank 50 ft upstream from Queen Shoals Creek, 100 ft downstream from highway bridge at Queen Shoals, 4.0 mi upstream from Big Sandy Creek, and at mile 26.2. Records include flow of Queen Shoals Creek.

DRAINAGE AREA.--1,145 mi^2, includes that of Queen Shoals Creek.

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only October, November 1928, published in WSP 1305.

REVISED RECORDS.--WSP 783: Drainage area. WSP 1335: 1929-32, 1935(M), 1936, 1939, 1943(M).

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 604.09 ft above NGVD of 1929. Prior to June 19, 1932, nonrecording gage. June 19, 1932, to Sept. 30, 1946, water-stage recorder, at bridge 100 ft upstream at same datum.

REMARKS.--Records good except those above 10,000 ft^3/s, which are fair and those for periods of estimated daily discharges (ice effect), which are fair. Flow regulated since April 1959 by Sutton Lake.

PEAK DISCHARGES FOR CURRENT YEAR.--Maximum discharge, 35,400 ft^3/s, Feb. 17, gage height, 21.09 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	222	3,610	3,000	1,630	2,810	5,800	1,170	1,520	4,200	466	746	1,670
2	182	2,990	2,130	2,020	3,040	5,460	1,670	1,660	5,690	383	669	4,780
3	406	2,350	1,650	4,220	2,820	4,460	1,870	3,420	4,830	414	468	5,630
4	608	1,640	1,420	6,600	2,790	2,930	2,360	3,650	4,220	479	501	7,360
5	615	978	1,230	5,670	5,360	2,790	3,120	2,800	6,100	397	976	8,990
6	600	1,200	1,310	4,770	5,940	2,950	3,000	3,080	4,740	335	1,390	6,430
7	567	3,580	1,470	3,870	3,860	3,170	3,490	2,550	5,190	287	1,300	3,010
8	386	4,590	1,420	3,020	2,700	3,310	4,410	2,100	8,190	575	895	1,870
9	348	3,610	1,270	2,550	1,970	3,920	4,620	1,830	6,320	929	927	1,510
10	375	2,870	1,220	2,280	1,680	3,780	5,110	5,790	3,910	2,630	2,550	1,360
11	463	2,490	1,370	2,180	1,670	3,660	5,080	8,990	2,840	3,850	2,690	1,130
12	567	2,180	2,790	2,080	1,600	2,940	4,990	7,240	5,710	2,150	1,920	738
13	583	2,700	3,550	1,850	1,330	2,520	4,330	8,480	5,280	1,570	2,770	664
14	693	4,260	6,510	1,490	772	3,850	3,830	7,750	8,430	1,250	2,500	535
15	1,040	4,150	7,060	1,300	1,690	4,580	2,940	6,480	6,690	597	1,670	420
16	1,790	3,120	5,700	1,150	15,700	4,380	2,190	5,940	5,410	553	1,410	478
17	4,400	3,960	4,330	e1,020	27,000	4,140	1,730	3,800	6,000	641	1,770	1,100
18	4,510	5,420	3,130	e940	7,260	4,420	1,610	2,460	6,020	605	6,050	844
19	2,840	5,400	2,470	846	7,390	4,460	1,790	3,540	4,830	641	4,600	1,540
20	2,110	3,370	2,380	e770	7,700	4,260	1,440	4,150	7,040	755	2,070	6,730
21	1,700	1,780	3,520	e700	7,470	3,680	1,470	3,860	7,910	654	1,160	6,480
22	1,510	3,750	4,740	e650	11,300	3,230	1,850	2,840	5,850	661	1,220	4,170
23	1,270	4,260	4,180	e610	14,400	2,820	1,570	2,890	3,560	608	949	3,230
24	1,110	3,800	3,210	e570	12,000	2,070	1,470	3,100	2,480	525	736	2,300
25	1,060	3,050	2,800	e540	12,000	1,480	1,240	3,670	1,770	458	458	1,910
26	1,060	2,570	3,730	e520	9,180	1,370	1,150	2,320	1,140	386	353	1,580
27	958	2,470	3,180	493	6,490	1,210	1,180	1,780	982	350	279	1,230
28	803	3,300	2,900	513	5,680	1,160	1,040	1,540	819	305	265	1,180
29	1,230	3,340	2,490	674	---	1,010	937	1,810	605	277	291	1,250
30	2,390	3,480	2,010	1,270	---	648	917	3,250	514	443	345	1,380
31	3,980	---	1,750	2,110	---	768	---	4,200	---	579	542	---
TOTAL	40,376	96,268	89,920	58,906	183,602	97,226	73,574	118,490	137,270	24,753	44,470	81,499
MEAN	1,302	3,209	2,901	1,900	6,557	3,136	2,452	3,822	4,576	798	1,435	2,717
MAX	4,510	5,420	7,060	6,600	27,000	5,800	5,110	8,990	8,430	3,850	6,050	8,990
MIN	182	978	1,220	493	772	648	917	1,520	514	277	265	420

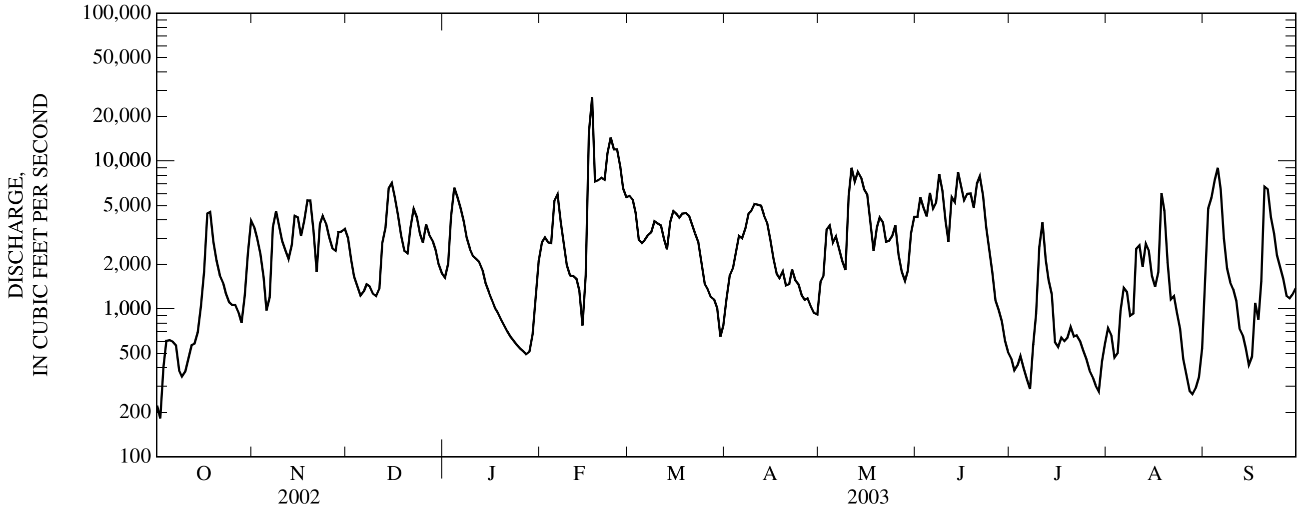
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2003, BY WATER YEAR (WY) [REGULATED, UNADJUSTED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	994	1,965	2,804	2,991	3,543	4,160	2,805	2,624	1,380	894	934	677
MAX	5,017	6,135	7,402	6,743	7,296	9,051	5,649	6,601	4,745	2,735	3,487	3,072
(WY)	(1977)	(1986)	(1973)	(1994)	(1994)	(1967)	(1987)	(1989)	(1981)	(1992)	(1972)	(1971)
MIN	142	352	244	594	955	1,633	562	409	132	120	83.7	111
(WY)	(1959)	(2002)	(1966)	(1977)	(2002)	(1987)	(1963)	(1964)	(1965)	(1964)	(1965)	(1959)

03197000 ELK RIVER AT QUEEN SHOALS, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1959 - 2003	
ANNUAL TOTAL	748,704		1,046,354			
ANNUAL MEAN	2,051		2,867		2,142	
HIGHEST ANNUAL MEAN					3,249	1994
LOWEST ANNUAL MEAN					1,063	1966
HIGHEST DAILY MEAN	13,600	Apr 29	27,000	Feb 17	35,300	Mar 15, 1967
LOWEST DAILY MEAN	141	Sep 24	182	Oct 2	9.0	Sep 27, 1959
ANNUAL SEVEN-DAY MINIMUM	197	Sep 21	362	Aug 25	12	Sep 24, 1959
MAXIMUM PEAK FLOW			35,400	Feb 17	(a)47,000	Mar 2, 1997
MAXIMUM PEAK STAGE			21.09	Feb 17	25.36	Mar 2, 1997
INSTANTANEOUS LOW FLOW			171	Oct 3	(b)	(b)
10 PERCENT EXCEEDS	4,650		5,940		5,580	
50 PERCENT EXCEEDS	1,160		2,180		1,120	
90 PERCENT EXCEEDS	286		538		225	

a From rating curve extended above 40,000 ft^3/s.
b Not determined.
e Estimated.



STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1958, BY WATER YEAR (WY) [UNREGULATED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	557	1,093	2,233	3,130	3,578	4,210	2,995	2,149	1,061	1,279	980	408
MAX	3,510	3,488	5,245	6,482	7,715	7,339	5,307	4,352	3,111	6,268	4,453	2,398
(WY)	(1938)	(1930)	(1943)	(1937)	(1939)	(1936)	(1958)	(1958)	(1940)	(1932)	(1958)	(1950)
MIN	3.46	7.50	204	402	759	2,154	799	384	113	17.1	13.1	7.21
(WY)	(1931)	(1931)	(1931)	(1940)	(1934)	(1937)	(1942)	(1930)	(1936)	(1930)	(1930)	(1930)

SUMMARY STATISTICS	WATER YEARS 1929 - 1958	
ANNUAL MEAN	1,967	
HIGHEST ANNUAL MEAN	2,821	1950
LOWEST ANNUAL MEAN	1,214	1941
HIGHEST DAILY MEAN	58,100	Jul 5, 1932
LOWEST DAILY MEAN	.30	(*)
ANNUAL SEVEN-DAY MINIMUM	.86	Oct 30, 1953
INSTANTANEOUS PEAK FLOW	(#)72,000	Jul 5, 1932
INSTANTANEOUS PEAK STAGE	29.20	Jul 5, 1932
INSTANTANEOUS LOW FLOW	.30	(&)
10 PERCENT EXCEEDS	4,650	
50 PERCENT EXCEEDS	955	
90 PERCENT EXCEEDS	90	

* Nov. 3, 4, 1953.
# From rating curve extended above 40,000 ft^3/s.
& Nov. 4, 5, 1953.

03198000 KANAWHA RIVER AT CHARLESTON, WV

LOCATION.--Lat 38°22'17", long 81°42'08", NAD27, Kanawha County, Hydrologic Unit 05050008, on left bank at old lock 6, 1.0 mi upstream from Davis Creek, 1.5 mi downstream from Twomile Creek, 2.0 mi downstream from Patrick Street Bridge at Charleston, 3.5 mi downstream from Elk River, and at mile 54.5.

DRAINAGE AREA.--10,448 mi^2.

PERIOD OF RECORD.--June 1939 to current year. Monthly discharge only September 1939 to February 1940, published in WSP 1305.

REVISED RECORDS.--WSP 1335: 1943.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 548.00 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Auxiliary water-stage recorder 2.3 mi upstream from base gage at datum 547.00 ft, U.S. Army Corps of Engineers datum. Prior to Oct. 1, 1955, auxiliary gages at different sites and datum.

REMARKS.--Records good above 30,000 ft^3/s, fair 10,000 to 30,000 ft^3/s, and poor less than 10,000 ft^3/s. The rating lacks sensitivity at flows less than 10,000 ft^3/s, and records for flows less than 10,000 ft^3/s are estimated based on stations 03193000 Kanawha River at Kanawha Falls, 03197000 Elk River at Queen Shoals, and 03200500 Coal River at Tornado. Flow regulated since 1939 by increasing number of reservoirs upstream from station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 29, 1861, reached a stage of about 54.3 ft.

PEAK DISCHARGES FOR CURRENT YEAR.--Maximum discharge, 144,000 ft^3/s, Feb. 23, gage height, 36.02 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e6,660	28,200	17,800	14,800	11,800	55,900	11,300	11,700	24,300	e9,930	e10,800	e11,600
2	e4,490	20,900	14,200	21,000	12,900	56,200	12,000	13,700	27,500	e12,000	e8,730	12,500
3	e4,610	17,000	e10,300	39,600	11,500	57,900	20,300	18,200	23,500	20,400	e8,750	16,400
4	e5,040	11,900	e9,910	43,600	13,900	49,000	22,600	16,900	31,700	33,300	e9,060	30,200
5	e4,760	11,000	e9,960	38,400	24,100	34,000	21,100	14,700	41,000	32,200	e12,000	44,600
6	e4,400	15,400	11,300	30,100	28,200	31,300	19,400	18,600	32,900	20,500	e13,100	36,500
7	e4,110	27,300	12,100	25,500	23,600	38,000	17,100	21,500	28,400	13,000	e13,400	19,600
8	e3,190	28,500	11,900	23,500	19,800	33,200	32,800	19,200	33,500	17,500	e14,400	13,000
9	e2,550	24,200	e10,100	19,300	15,100	28,600	46,300	17,300	41,200	17,900	21,800	10,300
10	e2,610	17,800	e8,280	20,300	10,700	23,800	57,200	18,800	38,600	20,700	27,800	e12,700
11	e2,780	18,300	10,000	18,300	10,300	26,000	64,600	41,800	30,800	20,700	23,900	e11,400
12	e3,800	22,200	28,500	17,400	11,900	23,000	70,700	35,800	27,600	16,500	18,700	e9,340
13	e4,630	42,800	32,200	12,600	10,800	19,300	59,300	30,200	27,600	14,400	19,300	e8,060
14	e4,060	43,500	42,000	10,500	9,180	22,900	47,800	23,200	32,700	e15,100	16,600	e8,410
15	e3,870	33,700	50,400	12,400	16,700	29,900	38,200	20,100	29,400	e12,100	14,400	e7,910
16	e7,460	26,700	39,900	10,600	76,100	28,700	24,600	19,400	48,100	e13,700	14,300	e7,400
17	15,500	31,000	29,300	10,000	99,700	22,800	18,100	17,200	69,500	e13,000	25,300	e8,960
18	17,200	36,900	25,100	e9,280	61,500	23,100	15,900	23,300	69,000	e10,300	22,900	e9,130
19	13,400	38,600	22,500	e8,140	41,300	28,000	23,900	61,600	58,500	e10,800	19,700	17,700
20	11,800	30,800	21,500	e7,520	33,400	24,000	28,400	57,400	59,700	e11,900	12,900	29,000
21	e8,470	22,600	40,400	e7,070	34,500	26,100	27,700	40,500	61,500	e10,500	e11,800	30,800
22	e6,970	25,600	47,100	e6,800	72,000	35,900	25,100	37,000	44,900	e8,850	e11,100	18,100
23	e6,360	28,700	31,300	e6,470	134,000	28,400	20,400	30,000	28,900	e8,640	e10,200	16,800
24	e5,590	26,700	24,900	e6,200	105,000	21,800	18,700	26,400	20,300	e9,370	e9,090	23,300
25	e4,830	20,700	25,100	e8,000	94,600	16,600	16,200	22,600	14,700	e8,910	e7,690	20,700
26	e4,790	18,200	34,800	e7,190	79,700	16,600	15,200	18,100	11,400	e7,630	e7,060	15,500
27	e5,550	20,700	29,400	e5,890	66,500	14,500	13,800	15,500	10,300	e6,800	e6,410	11,200
28	e5,970	26,700	25,500	e5,220	58,400	12,600	12,200	14,700	e12,200	e6,210	e5,990	e14,700
29	e10,100	23,700	20,400	e7,330	---	12,300	13,100	15,400	e10,700	e6,320	e5,860	14,400
30	19,600	19,500	15,500	e8,280	---	11,500	13,000	18,700	e10,100	e6,860	e6,210	12,600
31	34,900	---	14,700	e10,000	---	e10,700	---	22,300	---	e10,200	e7,110	---
TOTAL	240,050	759,800	726,350	471,290	1,187,180	862,600	827,000	761,800	1,000,500	426,220	416,360	502,810
MEAN	7,744	25,330	23,430	15,200	42,400	27,830	27,570	24,570	33,350	13,750	13,430	16,760
MAX	34,900	43,500	50,400	43,600	134,000	57,900	70,700	61,600	69,500	33,300	27,800	44,600
MIN	2,550	11,000	8,280	5,220	9,180	10,700	11,300	11,700	10,100	6,210	5,860	7,400

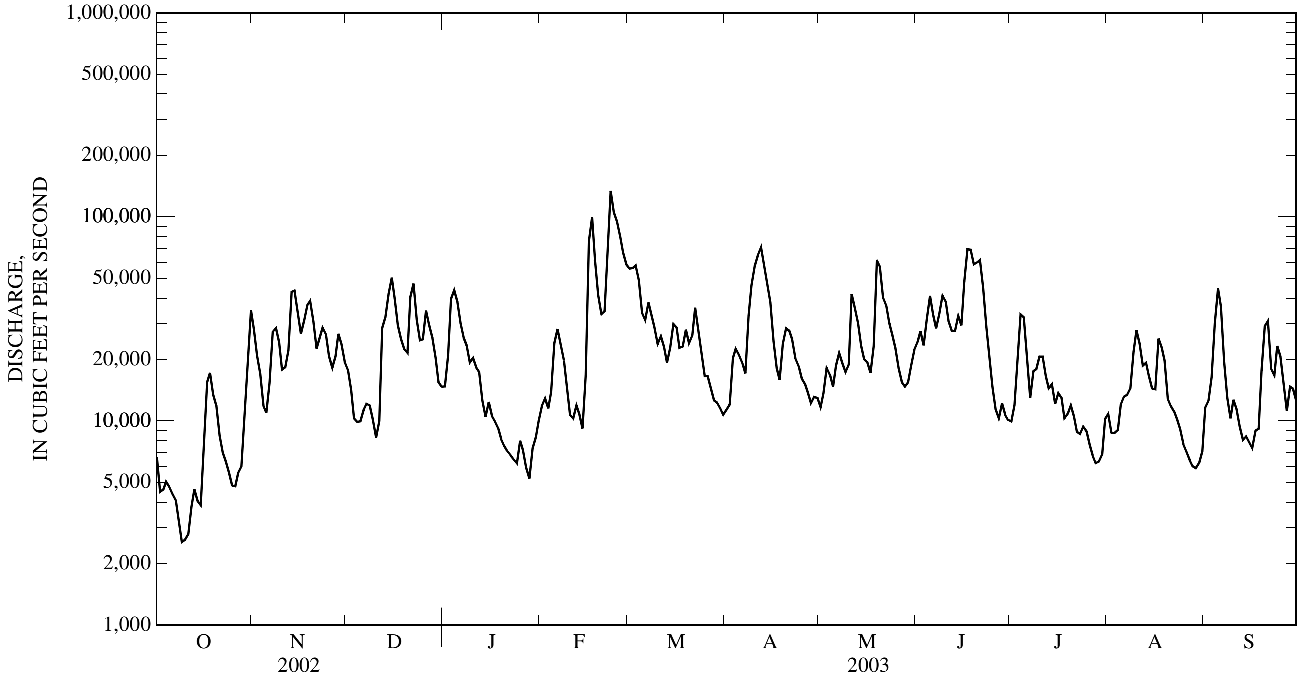
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6,828	10,910	16,550	20,700	25,410	30,030	22,350	18,260	10,870	7,698	6,910	5,519
MAX	30,780	32,440	40,920	46,440	52,020	62,900	59,000	38,550	33,350	19,030	19,030	18,360
(WY)	(1977)	(1986)	(1973)	(1996)	(1994)	(1963)	(1987)	(1989)	(2003)	(2001)	(1958)	(1989)
MIN	1,465	1,703	2,461	4,226	7,122	10,680	6,553	4,894	2,745	2,394	2,080	1,553
(WY)	(1954)	(1954)	(1966)	(1966)	(2002)	(1988)	(1986)	(1941)	(1999)	(1966)	(1944)	(1953)

03198000 KANAWHA RIVER AT CHARLESTON, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1941 - 2003	
ANNUAL TOTAL	4,906,670		8,181,960			
ANNUAL MEAN	13,440		22,420		15,120	
HIGHEST ANNUAL MEAN					22,420	2003
LOWEST ANNUAL MEAN					8,649	1988
HIGHEST DAILY MEAN	68,400	Apr 23	134,000	Feb 23	160,000	Mar 7, 1967
LOWEST DAILY MEAN	(e)2,250	(a)	(e)2,550	Oct 9	1,100	Jul 30, 1966
ANNUAL SEVEN-DAY MINIMUM	2,420	Jan 1	3,350	Oct 6	1,250	Sep 26, 1953
MAXIMUM PEAK FLOW			144,000	Feb 23	216,000	Aug 15, 1940
MAXIMUM PEAK STAGE			36.02	Feb 23	39.72	Mar 7, 1955
INSTANTANEOUS LOW FLOW			(b)	(b)	1,030	(c)
10 PERCENT EXCEEDS	32,000		41,900		33,600	
50 PERCENT EXCEEDS	7,470		18,100		9,430	
90 PERCENT EXCEEDS	2,600		7,070		3,100	

a Jan. 3, Sept. 12.
b Not determined.
c Minimum discharge less than 1,030 ft^3/s during Oct. 1-5, 1953.
e Estimated.



03198350 CLEAR FORK AT WHITESVILLE, WV

LOCATION.--Lat 37°57'58", long 81°31'28", NAD27, Raleigh County, Hydrologic Unit 05050004, at Leevale, on left bank, at Secondary Route 1-21 highway bridge, 0.7 mi southeast of Whitesville, and 0.6 mi upstream from mouth.

DRAINAGE AREA.--62.8 mi^2.

PERIOD OF RECORD.--October 1996 to current year.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 818.98 ft above NGVD of 1929. Prior to July 24, 2002, gage 250 ft upstream at same datum.

REMARKS.--Records good except those for August and September, and for period of estimated discharges (ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	0600	2,070	17.32	May 21	0800	1,840	16.64
Feb 22	1330	*2,590	*18.16	Jun 4	0130	1,600	16.08
Apr 11	0600	1,270	15.33	Sep 4	1130	1,540	15.95

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	68	79	88	79	225	52	69	132	85	31	109
2	9.3	55	68	91	80	230	59	64	114	94	26	75
3	8.7	45	61	196	90	207	62	61	164	80	28	78
4	8.1	45	54	274	207	177	62	56	962	63	29	724
5	7.6	46	87	202	238	162	65	58	378	54	37	215
6	7.1	147	114	171	168	149	58	102	230	49	31	81
7	6.6	161	98	148	135	130	152	88	387	61	37	68
8	6.3	102	86	140	104	116	255	78	444	53	144	63
9	6.0	73	77	136	88	106	335	76	262	73	222	38
10	6.5	57	70	132	86	95	323	72	176	155	116	31
11	11	107	170	118	79	87	923	75	153	324	87	36
12	19	180	257	99	72	82	401	64	139	175	89	26
13	17	204	202	88	66	85	239	55	125	134	86	22
14	16	124	228	e77	65	93	168	49	150	99	68	21
15	13	88	212	e69	535	87	135	98	231	82	58	20
16	142	82	179	e60	1,280	85	115	129	364	73	160	19
17	92	200	148	e53	568	82	101	105	460	64	190	17
18	47	198	126	e50	328	78	161	137	526	58	124	18
19	31	149	110	e46	240	72	263	203	379	53	104	336
20	25	131	186	e42	224	68	192	150	294	48	89	165
21	21	122	219	e38	352	66	157	1,060	252	44	66	93
22	18	129	167	e35	1,540	61	131	468	194	48	88	71
23	16	126	125	e33	1,130	56	110	279	148	32	89	90
24	15	113	117	e31	524	53	95	217	120	28	56	70
25	16	99	156	e29	352	50	87	152	102	27	50	57
26	19	93	178	e27	278	51	93	121	88	25	55	48
27	17	116	154	e30	229	48	88	103	83	24	62	43
28	45	117	131	e38	220	44	78	91	77	25	44	43
29	197	105	112	e44	---	45	78	102	72	53	42	36
30	224	93	96	e64	---	52	72	123	63	35	43	32
31	101	---	87	73	---	49	---	122	---	30	48	---
TOTAL	1,178.2	3,375	4,154	2,722	9,357	2,991	5,110	4,627	7,269	2,248	2,399	2,745
MEAN	38.0	112	134	87.8	334	96.5	170	149	242	72.5	77.4	91.5
MAX	224	204	257	274	1,540	230	923	1,060	962	324	222	724
MIN	6.0	45	54	27	65	44	52	49	63	24	26	17
CFSM	0.61	1.79	2.13	1.40	5.32	1.54	2.71	2.38	3.86	1.15	1.23	1.46
IN.	0.70	2.00	2.46	1.61	5.54	1.77	3.03	2.74	4.31	1.33	1.42	1.63

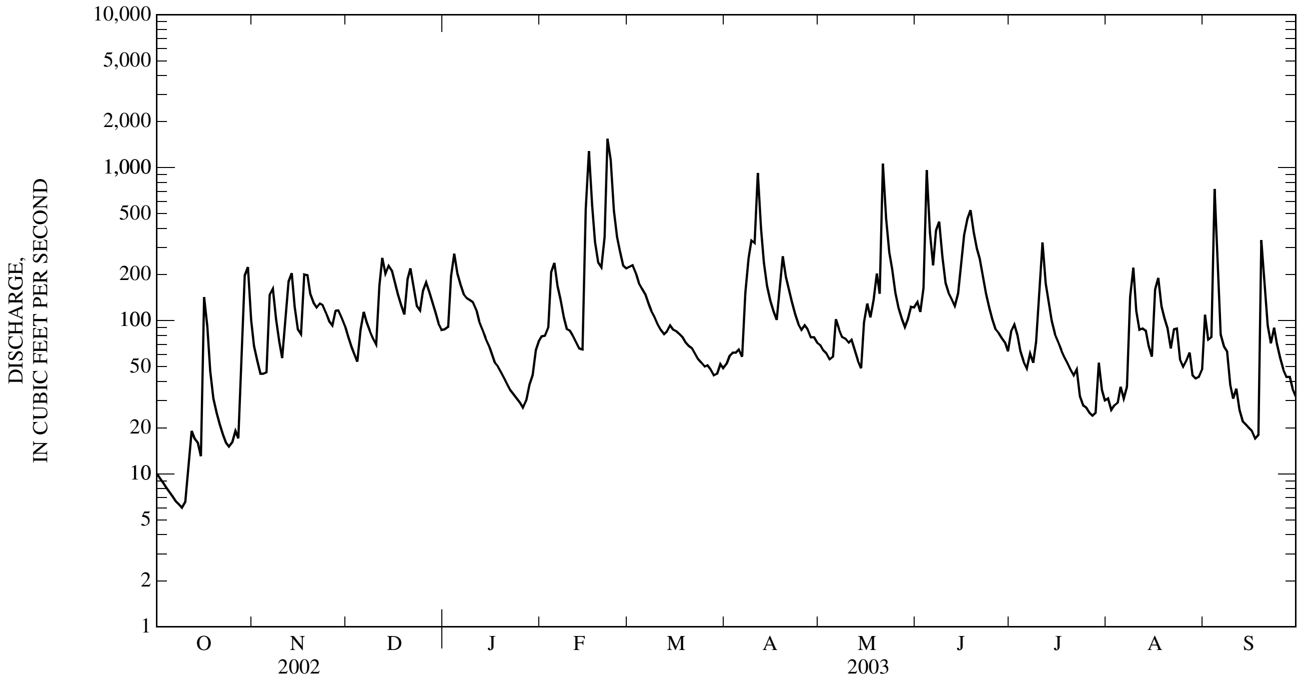
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	18.1	39.7	57.6	83.1	146	143	135	114	94.7	74.2	36.2	28.1
MAX	38.0	112	134	148	334	221	204	200	242	288	79.0	91.5
(WY)	(2003)	(2003)	(2003)	(1999)	(2003)	(1997)	(2002)	(2001)	(2003)	(2001)	(2001)	(2003)
MIN	7.30	8.10	18.1	27.2	36.1	76.2	55.0	30.1	8.53	6.88	7.76	4.42
(WY)	(1999)	(2002)	(2002)	(2000)	(2002)	(2000)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)

03198350 CLEAR FORK AT WHITESVILLE, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1997 - 2003	
ANNUAL TOTAL	30,018.1		48,175.2			
ANNUAL MEAN	82.2		132		80.4	
HIGHEST ANNUAL MEAN					132	2003
LOWEST ANNUAL MEAN					47.9	1999
HIGHEST DAILY MEAN	(e)769	Apr 1	1,540	Feb 22	2,760	Jul 8, 2001
LOWEST DAILY MEAN	3.4	(a)	6.0	Oct 9	2.5	(b)
ANNUAL SEVEN-DAY MINIMUM	3.8	Sep 8	6.9	Oct 4	2.8	Sep 21, 1999
MAXIMUM PEAK FLOW			2,590	Feb 22	(c)12,000	Jul 8, 2001
MAXIMUM PEAK STAGE			18.16	Feb 22	(d)28.47	Jul 8, 2001
INSTANTANEOUS LOW FLOW			5.8	Oct 9	2.1	Sep 27, 1999
ANNUAL RUNOFF (CFSM)	1.31		2.10		1.28	
ANNUAL RUNOFF (INCHES)	17.78		28.54		17.40	
10 PERCENT EXCEEDS	203		239		179	
50 PERCENT EXCEEDS	42		88		43	
90 PERCENT EXCEEDS	8.7		28		8.1	

a Sept. 12, 13.
b Sept. 26, 27, 1999.
c From rating curve extended above 3,300 ft^3/s on basis of slope-area measurement of peak flow.
d From floodmarks.
e Estimated.



03198500 BIG COAL RIVER AT ASHFORD, WV

LOCATION.--Lat 38°10'47", long 81°42'42", NAD27, Boone County, Hydrologic Unit 05050009, on left bank at downstream side of highway bridge at Ashford, 300 ft upstream from Lick Creek, 1.0 mi downstream from Brush Creek, 1.8 mi upstream from Bull Creek, and at mile 30.2 upstream from Kanawha River.

DRAINAGE AREA.--391 mi^2.

PERIOD OF RECORD.--June 1908 to September 1916, May 1930 to current year. Published as Coal River at Brushton, June 1908 to September 1916 and as Coal River at Ashford, May 1930 to September 1960.

REVISED RECORDS.--WSP 1305: 1913-14(M). WSP 1335: 1912, 1916(M). WDR WV-82-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 622.46 ft above NGVD of 1929. Prior to Aug. 9, 1916, nonrecording gage at site 1.0 mi upstream at different datum. May 7, 1930, to Feb. 10, 1939, nonrecording gage at present site and datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	1330	*14,900	*19.24	Sep 4	2330	6,340	11.05
Feb 23	0100	13,700	18.33				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	378	450	506	453	1,440	379	482	750	320	154	191
2	54	274	375	520	485	1,460	395	482	733	397	148	253
3	50	219	338	791	513	1,360	423	452	656	359	249	233
4	46	197	309	1,760	751	1,180	445	422	2,850	315	267	2,800
5	50	201	339	1,340	1,410	1,040	466	399	2,030	265	397	3,720
6	51	487	563	1,090	998	954	476	607	1,260	235	259	1,160
7	49	814	566	954	818	852	664	667	1,520	345	312	687
8	47	560	494	874	657	769	1,710	592	2,290	326	471	500
9	44	395	441	832	543	707	1,990	554	1,450	299	1,140	390
10	42	333	397	801	512	659	2,180	615	983	799	770	322
11	60	519	547	727	495	603	2,740	1,150	780	1,320	498	274
12	79	838	1,560	623	450	556	2,720	966	852	902	510	240
13	92	1,280	1,250	536	417	557	1,750	707	707	677	392	214
14	89	785	1,620	e460	388	649	1,270	569	644	513	348	200
15	78	549	1,690	e420	2,240	644	973	554	861	394	356	196
16	335	473	1,410	e360	11,100	611	817	885	1,140	334	410	181
17	630	884	1,070	e330	4,590	583	713	1,000	2,640	287	2,430	161
18	310	1,310	828	e300	2,220	569	702	1,100	2,560	248	1,360	157
19	187	932	691	e270	1,520	549	1,330	1,640	2,280	253	684	1,840
20	151	771	738	e250	1,360	523	1,210	1,320	1,690	299	452	1,370
21	121	671	1,200	e230	1,940	488	966	2,610	1,360	245	338	726
22	102	668	1,030	e215	7,390	460	878	2,610	1,050	211	351	524
23	91	681	803	e195	10,700	437	767	1,650	797	202	410	603
24	81	630	658	185	5,190	409	675	1,260	625	188	330	590
25	73	559	834	e175	2,300	364	605	966	517	176	263	453
26	75	499	1,120	e165	1,820	347	593	763	436	164	223	374
27	79	534	964	e155	1,530	347	623	642	391	157	202	325
28	87	611	802	212	1,450	334	551	566	355	152	186	312
29	473	579	680	245	---	329	530	538	327	167	169	289
30	1,080	525	591	364	---	339	517	679	298	173	172	237
31	590	---	536	421	---	371	---	744	---	148	186	---
TOTAL	5,360	18,156	24,894	16,306	64,240	20,490	30,058	28,191	34,832	10,870	14,437	19,522
MEAN	173	605	803	526	2,294	661	1,002	909	1,161	351	466	651
MAX	1,080	1,310	1,690	1,760	11,100	1,460	2,740	2,610	2,850	1,320	2,430	3,720
MIN	42	197	309	155	388	329	379	399	298	148	148	157
CFSM	0.44	1.55	2.05	1.35	5.87	1.69	2.56	2.33	2.97	0.90	1.19	1.66
IN.	0.51	1.73	2.37	1.55	6.11	1.95	2.86	2.68	3.31	1.03	1.37	1.86

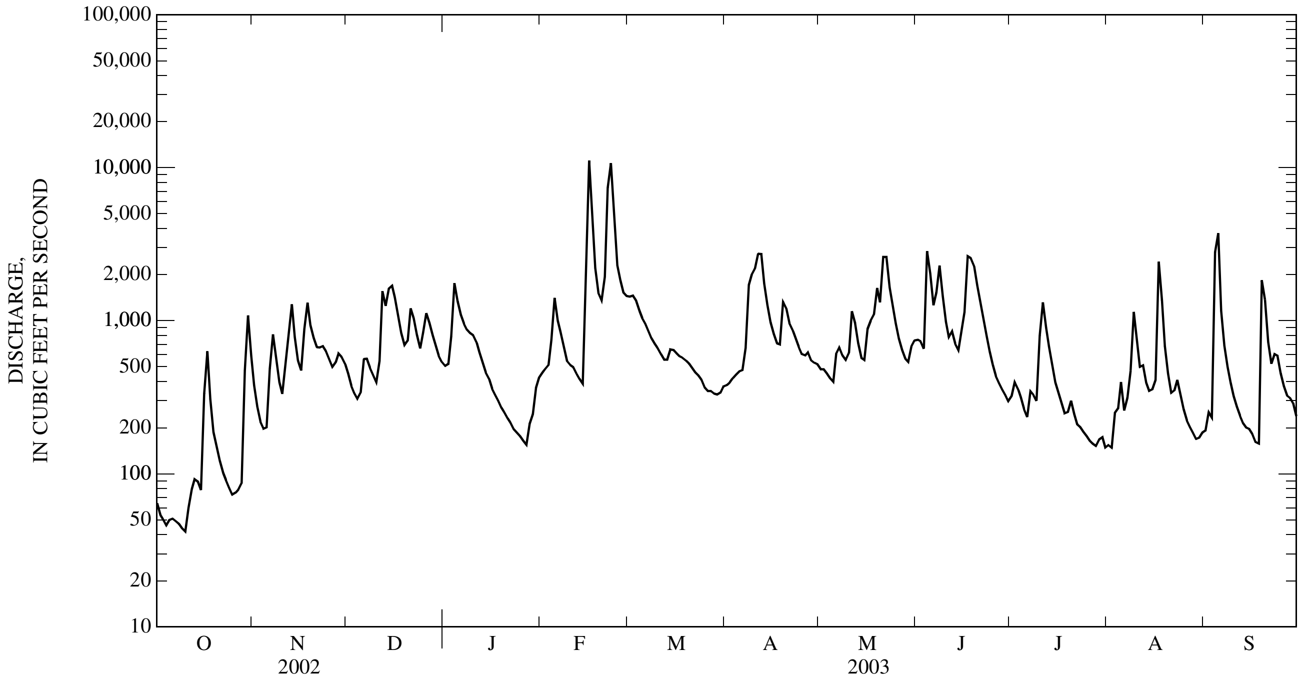
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	122	242	552	820	1,010	1,192	902	620	317	238	175	105
MAX	1,086	914	2,043	2,241	2,294	2,866	2,448	2,169	1,208	1,457	1,570	651
(WY)	(1990)	(1987)	(1943)	(1974)	(2003)	(1955)	(1987)	(1996)	(1981)	(2001)	(1916)	(2003)
MIN	1.11	5.94	16.7	29.4	142	366	173	89.2	19.6	6.41	11.9	1.13
(WY)	(1931)	(1931)	(1931)	(1940)	(1941)	(1988)	(1942)	(1941)	(1936)	(1930)	(1957)	(1930)

03198500 BIG COAL RIVER AT ASHFORD, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1908 - 2003	
ANNUAL TOTAL	191,180		287,356			
ANNUAL MEAN	524		787		524	
HIGHEST ANNUAL MEAN					864	1994
LOWEST ANNUAL MEAN					206	1941
HIGHEST DAILY MEAN	6,410	Apr 1	11,100	Feb 16	20,400	Mar 7, 1967
LOWEST DAILY MEAN	25	(a)	42	Oct 10	0.00	(b)
ANNUAL SEVEN-DAY MINIMUM	26	Sep 7	47	Oct 4	0.00	Oct 6, 1930
MAXIMUM PEAK FLOW			14,900	Feb 16	(c)35,800	Aug 9, 1916
MAXIMUM PEAK STAGE			19.24	Feb 16	(d)36.30	Aug 9, 1916
INSTANTANEOUS LOW FLOW			40	Oct 10	0.00	(b)
ANNUAL RUNOFF (CFSM)	1.34		2.01		1.34	
ANNUAL RUNOFF (INCHES)	18.19		27.34		18.19	
10 PERCENT EXCEEDS	1,290		1,520		1,250	
50 PERCENT EXCEEDS	239		536		228	
90 PERCENT EXCEEDS	49		171		29	

a Sept. 8, 12, 13.
b Sept. 18-21, 24, Oct. 6-12, 1930.
c From rating curve extended above 25,000 ft^3/s.
d Observed. From floodmark, site and datum then in use. This peak stage is 35.66 ft at present site and datum.
e Estimated.



03200500 COAL RIVER AT TORNADO, WV

LOCATION.--Lat 38°20'20", long 81°50'30", NAD27, Kanawha County, Hydrologic Unit 05050009, on downstream side of highway bridge at Tornado, 0.2 mi upstream from Falls Creek, and at mile 11.5.

DRAINAGE AREA.--862 mi^2, includes that of Falls Creek.

PERIOD OF RECORD.--June 1908 to September 1911, October 1911 to June 1912 (gage heights only), November 1928 to September 1931, August 1961 to current year.

REVISED RECORDS.--WDR WV-82-1: Drainage area. WDR WV-97-1: 1962-63(M), 1967(M), 1970(M).

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 570.46 ft above NGVD of 1929. Aug. 1, 1961, to Jan. 9, 1973, nonrecording gage at same site and datum. Prior to Aug. 1, 1961, nonrecording gage at same site at different datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect) which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 16,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	2200	25,800	25.32	Feb 23	0700	*26,300	*25.60

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	165	872	909	1,260	1,280	2,850	875	1,080	1,520	746	425	455
2	149	636	730	1,280	1,340	2,790	881	1,050	1,430	890	451	551
3	139	504	629	1,580	1,360	2,610	864	992	1,370	842	752	561
4	139	442	578	3,180	1,650	2,280	874	972	4,700	765	774	4,190
5	136	592	595	2,950	2,640	2,030	976	927	4,670	650	1,320	9,980
6	123	1,070	919	2,550	2,300	1,880	998	1,650	2,880	580	920	2,700
7	109	1,620	1,050	2,340	1,970	1,700	1,790	1,570	3,330	761	1,550	1,610
8	94	1,260	953	2,160	1,690	1,530	3,360	1,290	5,130	726	1,960	1,200
9	86	886	880	2,060	1,400	1,400	3,910	1,570	3,420	703	2,320	982
10	116	682	789	1,930	1,330	1,300	4,400	1,920	2,350	2,290	2,300	812
11	170	1,740	1,040	1,750	1,360	1,170	5,900	3,280	2,120	3,230	1,450	686
12	223	1,830	2,690	1,530	1,270	1,090	6,110	2,220	2,350	2,190	1,470	613
13	259	2,100	2,850	1,340	1,160	1,210	3,480	1,510	1,900	1,540	1,130	538
14	261	1,630	4,050	1,240	1,090	1,510	2,560	1,150	1,710	1,210	895	486
15	232	1,120	3,990	1,140	4,680	1,350	2,050	2,340	2,450	942	803	485
16	645	1,060	3,020	985	20,900	1,280	1,740	3,260	3,800	788	680	484
17	1,520	2,110	2,330	e870	17,800	1,220	1,510	2,440	11,200	675	4,870	410
18	798	2,920	1,980	e780	7,270	1,170	1,420	2,970	5,540	575	3,480	385
19	456	2,150	1,660	e720	3,970	1,110	1,870	3,920	4,690	557	1,720	3,420
20	380	1,730	1,950	e650	3,380	1,020	1,890	2,990	3,580	592	1,180	3,380
21	321	1,440	2,470	e590	4,370	1,030	1,740	4,890	3,080	546	904	1,730
22	260	1,420	2,250	e540	12,700	962	1,650	6,060	2,460	451	753	1,270
23	228	1,440	1,870	e500	24,300	885	1,450	3,390	1,940	441	948	1,410
24	198	1,330	1,560	431	11,600	812	1,290	2,480	1,560	442	850	1,330
25	179	1,180	1,890	e420	5,390	769	1,200	1,930	1,310	401	660	1,080
26	164	1,040	2,330	e390	3,890	766	1,180	1,540	1,120	356	546	920
27	181	1,040	2,180	e460	3,230	770	1,270	1,310	1,010	337	470	785
28	189	1,130	1,910	534	2,980	710	1,140	1,200	947	361	440	765
29	576	1,100	1,680	706	---	680	1,180	1,180	852	466	395	712
30	2,530	1,030	1,460	1,150	---	827	1,200	1,440	776	537	377	598
31	1,450	---	1,320	1,280	---	939	---	1,510	---	385	447	---
TOTAL	12,476	39,104	54,512	39,296	148,300	41,650	60,758	66,031	85,195	25,975	37,240	44,528
MEAN	402	1,303	1,758	1,268	5,296	1,344	2,025	2,130	2,840	838	1,201	1,484
MAX	2,530	2,920	4,050	3,180	24,300	2,850	6,110	6,060	11,200	3,230	4,870	9,980
MIN	86	442	578	390	1,090	680	864	927	776	337	377	385
CFSM	0.47	1.51	2.04	1.47	6.14	1.56	2.35	2.47	3.29	0.97	1.39	1.72
IN.	0.54	1.69	2.35	1.70	6.40	1.80	2.62	2.85	3.68	1.12	1.61	1.92

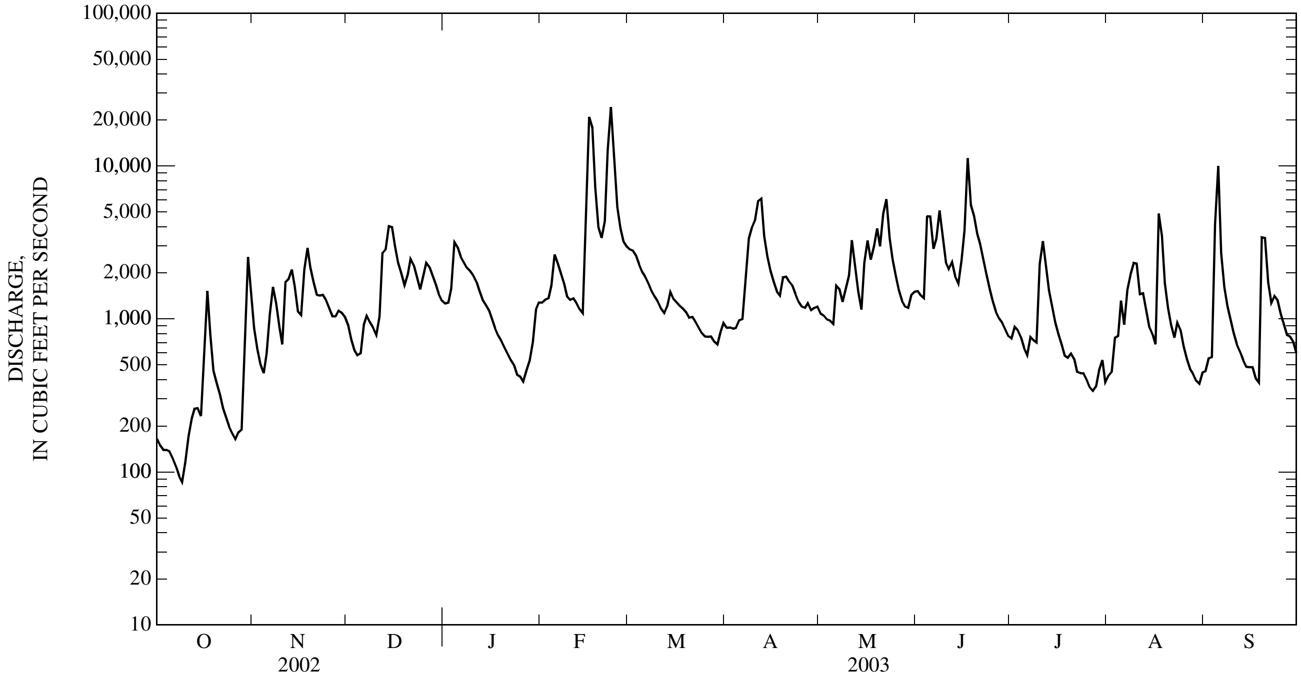
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	354	744	1,295	1,695	2,190	2,469	1,991	1,599	853	577	440	311
MAX	1,832	2,525	3,723	4,433	5,296	5,634	4,812	5,122	2,840	2,248	1,394	1,484
(WY)	(1990)	(1930)	(1973)	(1979)	(2003)	(1963)	(1987)	(1996)	(2003)	(2001)	(1968)	(2003)
MIN	3.05	10.5	46.7	209	479	757	509	234	47.2	8.67	26.1	7.00
(WY)	(1931)	(1931)	(1931)	(1931)	(2002)	(1910)	(1986)	(1930)	(1930)	(1930)	(1930)	(1930)

03200500 COAL RIVER AT TORNADO, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1908 - 2003	
ANNUAL TOTAL	415,184		655,065			
ANNUAL MEAN	1,137		1,795		1,207	
HIGHEST ANNUAL MEAN					1,853	1994
LOWEST ANNUAL MEAN					585	1988
HIGHEST DAILY MEAN	14,900	Apr 1	24,300	Feb 23	32,000	Dec 31, 1969
LOWEST DAILY MEAN	69	Sep 14	86	Oct 9	(e)2.0	(a)
ANNUAL SEVEN-DAY MINIMUM	73	Sep 9	115	Oct 4	2.0	Oct 1, 1930
MAXIMUM PEAK FLOW			26,300	Feb 23	35,500	Mar 7, 1967
MAXIMUM PEAK STAGE			25.60	Feb 23	31.98	Mar 7, 1967
INSTANTANEOUS LOW FLOW			81	Oct 9	2.0	Oct 1, 1930
ANNUAL RUNOFF (CFSM)	1.32		2.08		1.40	
ANNUAL RUNOFF (INCHES)	17.92		28.27		19.02	
10 PERCENT EXCEEDS	2,710		3,380		2,730	
50 PERCENT EXCEEDS	551		1,220		643	
90 PERCENT EXCEEDS	125		429		113	

a Oct. 1-10, 1930.
e Estimated.



03201405 HURRICANE CREEK AT HURRICANE, WV

LOCATION.--Lat 38°26'43", long 82°00'25", NAD27, Putnam County, Hydrologic Unit 05050008, on right bank at Interstate 64 bridge over Hurricane Creek and just upstream from the Hurricane Waste Water Treatment Plant chain-linked fence.

DRAINAGE AREA.--26.8 mi^2.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 600.00 ft above NGVD of 1929.

REMARKS.--Records fair, except those for periods of estimated daily discharges (no gage-height record, ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 15	1130	693	10.77	Feb 23	0130	752	11.16
Feb 16	0730	1,220	14.02	May 11	0230	1,200	13.88
Feb 22	1230	687	10.73	Jun 14	2130	*1,650	*16.37

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1.1	12	7.9	63	32	54	23	8.2	8.4	2.2	24	8.9
2	e1.0	8.0	7.1	50	24	44	18	7.5	5.1	2.1	4.3	17
3	e1.1	6.3	6.7	68	21	34	15	6.9	24	2.1	130	36
4	e1.4	14	5.3	57	173	27	14	6.0	28	2.1	123	13
5	e1.9	101	9.0	37	60	25	19	53	13	1.8	118	5.4
6	e2.4	170	8.3	37	33	27	13	63	7.9	2.7	18	3.6
7	e2.2	41	7.4	34	31	23	196	51	220	6.4	66	2.5
8	e2.0	20	12	30	22	20	91	30	56	2.6	40	2.2
9	e3.0	14	14	24	18	18	168	16	21	22	16	2.0
10	e5.0	42	12	18	25	15	96	165	11	148	12	1.8
11	e9.0	244	33	14	27	14	84	457	41	75	e9.0	1.7
12	e15	54	41	10	21	14	51	48	38	22	e14	1.6
13	e2.0	26	160	e9.2	17	40	34	23	39	37	e10	1.5
14	e1.0	16	311	e8.4	20	54	25	14	418	9.2	e7.5	1.4
15	6.7	15	107	e7.5	480	34	20	126	433	5.5	e5.0	2.9
16	308	49	52	e6.9	1,050	26	17	80	86	4.5	e6.9	2.5
17	45	132	33	e6.4	579	22	15	51	e110	3.3	e13	1.8
18	14	63	30	e6.0	164	19	17	296	85	2.5	9.2	1.8
19	8.1	65	24	e5.6	87	16	12	145	71	4.4	5.1	217
20	25	46	110	e5.2	101	17	9.8	48	156	3.3	3.8	21
21	15	32	54	e4.9	163	40	74	32	49	2.3	3.0	7.9
22	8.6	58	34	e4.6	489	23	39	21	23	1.9	2.6	30
23	5.4	40	24	e4.4	395	18	21	16	13	29	2.5	33
24	4.0	27	22	e4.2	113	15	15	12	e8.4	10	2.1	9.7
25	3.6	19	53	e3.9	70	13	13	9.1	6.3	4.2	1.8	5.7
26	6.2	15	36	e3.7	51	15	17	8.1	5.0	2.7	1.5	4.5
27	4.4	19	26	e4.0	52	13	13	7.0	4.1	2.0	1.8	124
28	4.8	14	21	e4.4	71	11	8.6	6.7	3.9	1.7	2.4	82
29	101	11	18	20	---	16	18	9.6	3.1	1.7	1.8	45
30	76	10	15	42	---	32	11	6.6	2.6	1.5	6.3	16
31	23	---	13	31	---	33	---	10	---	22	5.1	---
TOTAL	706.9	1,383.3	1,306.7	624.3	4,389	772	1,167.4	1,832.7	1,989.8	437.7	665.7	703.4
MEAN	22.8	46.1	42.2	20.1	157	24.9	38.9	59.1	66.3	14.1	21.5	23.4
MAX	308	244	311	68	1,050	54	196	457	433	148	130	217
MIN	1.0	6.3	5.3	3.7	17	11	8.6	6.0	2.6	1.5	1.5	1.4
CFSM	0.85	1.72	1.57	0.75	5.85	0.93	1.45	2.21	2.47	0.53	0.80	0.87
IN.	0.98	1.92	1.81	0.87	6.09	1.07	1.62	2.54	2.76	0.61	0.92	0.98

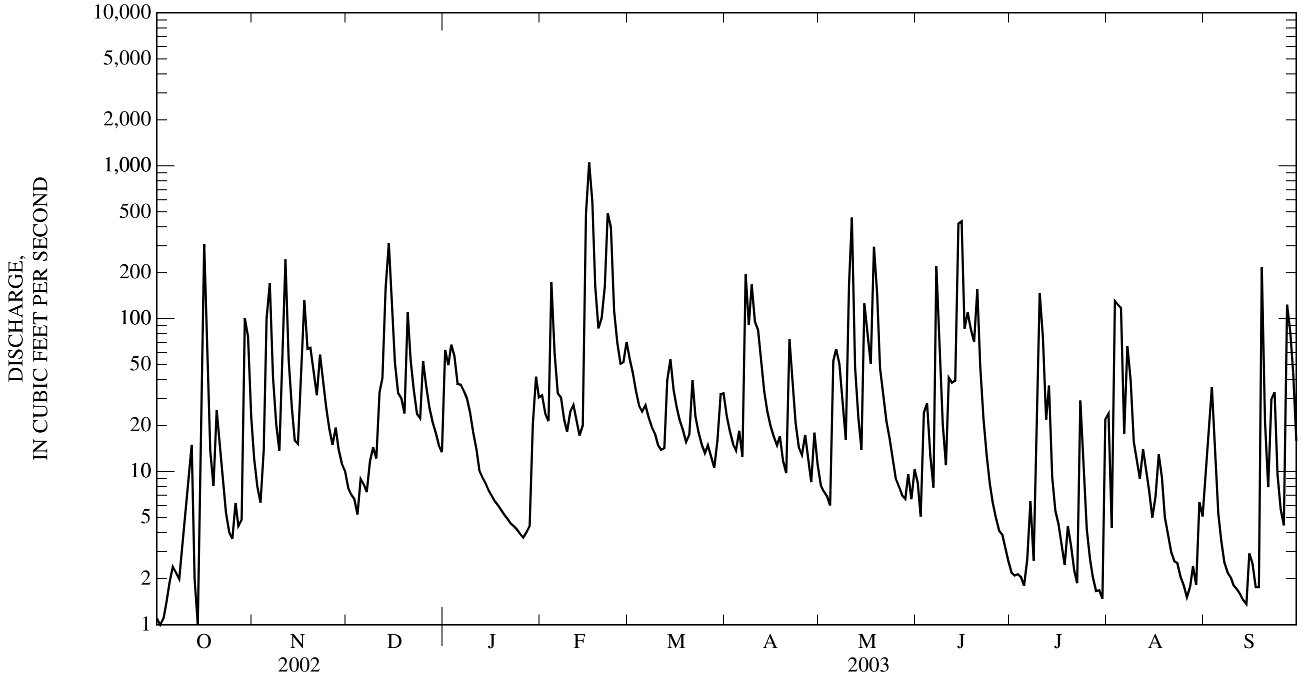
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.41	14.6	19.7	28.7	62.1	59.9	42.0	50.2	24.3	33.3	16.4	8.08
MAX	22.8	46.1	42.2	64.4	157	104	81.4	116	66.3	80.6	25.3	23.4
(WY)	(2003)	(2003)	(2003)	(1999)	(2003)	(2002)	(2002)	(2001)	(2003)	(2000)	(2000)	(2003)
MIN	1.50	1.96	6.79	9.18	10.3	24.9	11.5	2.25	0.79	0.42	6.08	0.69
(WY)	(2002)	(2002)	(2002)	(2000)	(2002)	(2003)	(1999)	(1999)	(1999)	(1999)	(2002)	(1999)

03201405 HURRICANE CREEK AT HURRICANE, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	12,588.01		15,978.9			
ANNUAL MEAN	34.5		43.8		30.4	
HIGHEST ANNUAL MEAN					43.8	2003
LOWEST ANNUAL MEAN					17.8	1999
HIGHEST DAILY MEAN	1,110	Mar 20	1,050	Feb 16	1,110	Mar 20, 2002
LOWEST DAILY MEAN	(e)0.30	(a)	(e)1.0	(b)	0.08	(c)
ANNUAL SEVEN-DAY MINIMUM	0.34	Sep 8	1.6	Oct 1	0.09	Jul 13, 1999
MAXIMUM PEAK FLOW			1,650	Jun 14	1,770	Feb 18, 2000
MAXIMUM PEAK STAGE			16.37	Jun 14	17.06	Feb 18, 2000
INSTANTANEOUS LOW FLOW			(d)	(d)	0.06	(c)
ANNUAL RUNOFF (CFSM)	1.29		1.63		1.13	
ANNUAL RUNOFF (INCHES)	17.47		22.18		15.41	
10 PERCENT EXCEEDS	68		101		69	
50 PERCENT EXCEEDS	8.2		16		6.0	
90 PERCENT EXCEEDS	0.77		2.5		0.85	

a Sept. 10, 11, 14.
b Oct. 2, 14.
c July 18, 19, 1999.
d Not determined.
e Estimated.



03202400 GUYANDOTTE RIVER NEAR BAILEYSVILLE, WV

LOCATION.--Lat 37°36'14", long 81°38'43", NAD27, Wyoming County, Hydrologic Unit 05070101, on right bank 75 ft upstream from Doublecamp Branch, 3.1 mi east of Baileysville, and at mile 130.8.

DRAINAGE AREA.--306 mi^2.

PERIOD OF RECORD.--July l968 to current year.

REVISED RECORDS.--WDR WV-82-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,140.00 ft above NGVD of 1929. Prior to Sept. 10, 1969, at site 25 ft upstream at same datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	0830	12,000	15.82	Jun 16	0430	5,820	9.88
Feb 22	1800	*17,600	*19.43	Jun 18	1400	6,970	11.00
Apr 11	0630	5,570	9.64				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77	282	396	464	289	1,320	264	607	1,130	322	292	427
2	71	218	332	539	312	1,410	298	622	964	415	210	323
3	67	179	303	1,110	344	1,280	356	549	738	440	196	323
4	66	168	271	1,630	747	1,050	343	475	855	363	237	1,710
5	65	183	604	1,170	1,190	922	344	454	771	310	201	1,490
6	59	430	988	901	800	886	327	1,080	601	278	178	595
7	57	541	680	740	653	787	1,240	941	584	715	165	377
8	56	386	528	670	519	673	2,000	788	745	514	390	288
9	55	282	439	703	419	602	2,650	700	853	557	596	238
10	53	228	385	776	429	540	2,030	669	723	669	426	204
11	60	475	830	758	395	494	4,300	825	592	668	403	183
12	63	1,410	1,410	639	358	456	2,270	682	539	555	486	163
13	63	1,740	1,100	551	326	437	1,410	540	467	481	419	154
14	59	793	1,360	510	325	444	1,020	451	494	386	322	147
15	61	507	1,330	455	2,720	395	827	449	1,530	324	268	146
16	366	419	1,010	392	8,270	377	713	738	3,950	316	542	162
17	495	726	773	e350	2,840	365	625	651	3,290	276	1,670	146
18	216	977	639	336	1,580	349	688	725	5,680	242	964	133
19	143	721	551	e300	1,110	330	1,150	1,400	3,460	228	527	558
20	119	598	637	e280	973	316	1,000	1,100	2,290	217	356	576
21	104	562	740	e265	1,110	323	828	1,920	1,740	203	278	335
22	95	695	632	e250	8,840	301	769	2,240	1,250	211	274	276
23	87	753	533	e230	7,140	286	662	1,430	927	285	240	435
24	81	630	548	225	3,150	278	567	1,140	729	270	211	360
25	78	517	992	e210	2,040	264	528	853	598	231	187	276
26	85	442	1,150	e200	1,590	260	544	718	517	197	167	234
27	86	536	894	e190	1,320	269	539	588	458	184	157	208
28	104	594	725	e185	1,290	251	489	549	417	176	146	198
29	221	542	615	220	---	244	451	555	377	175	140	177
30	468	479	528	255	---	264	457	671	336	177	139	158
31	397	---	478	265	---	280	---	727	---	236	159	---
TOTAL	4,077	17,013	22,401	15,769	51,079	16,453	29,689	25,837	37,605	10,621	10,946	11,000
MEAN	132	567	723	509	1,824	531	990	833	1,254	343	353	367
MAX	495	1,740	1,410	1,630	8,840	1,410	4,300	2,240	5,680	715	1,670	1,710
MIN	53	168	271	185	289	244	264	449	336	175	139	133
CFSM	0.43	1.85	2.36	1.66	5.96	1.73	3.23	2.72	4.10	1.12	1.15	1.20
IN.	0.50	2.07	2.72	1.92	6.21	2.00	3.61	3.14	4.57	1.29	1.33	1.34

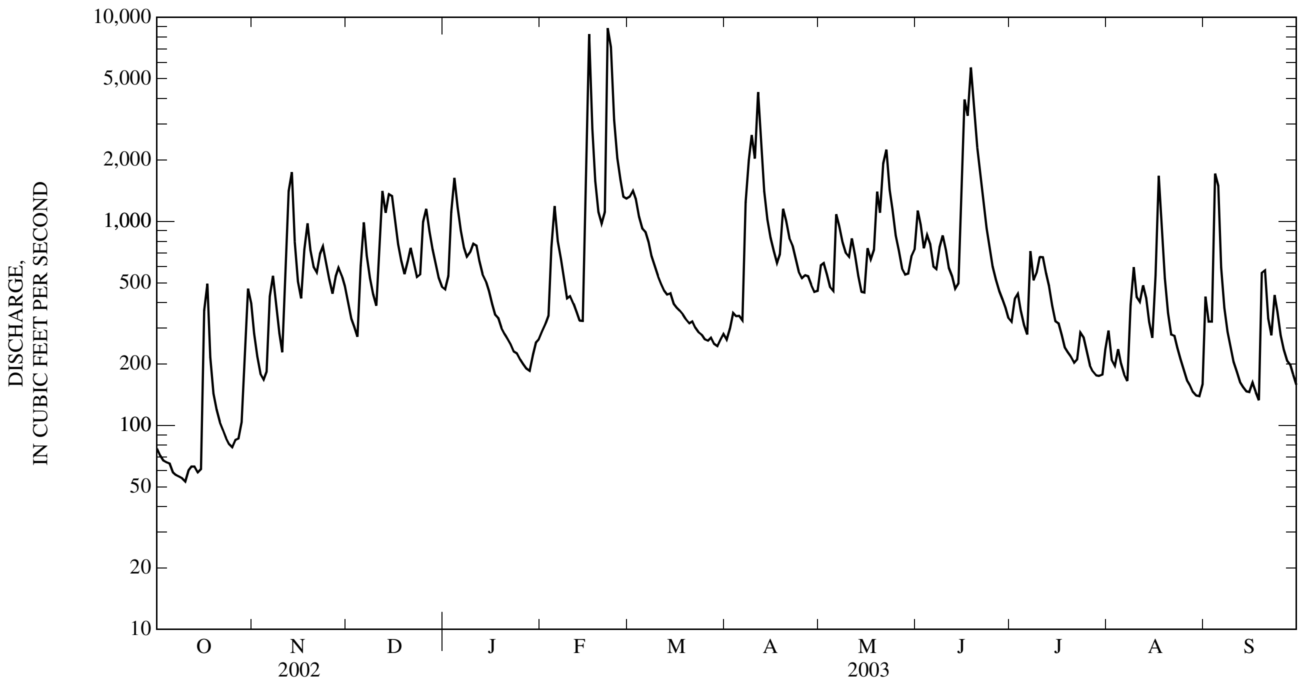
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	138	219	388	581	764	792	724	631	328	226	168	109
MAX	680	774	1,294	1,894	1,824	1,969	2,003	1,395	1,262	1,452	649	367
(WY)	(1990)	(1978)	(1973)	(1974)	(2003)	(1975)	(1987)	(2001)	(1981)	(2001)	(1972)	(2003)
MIN	35.6	33.8	62.4	127	173	193	211	198	88.6	65.2	49.8	47.1
(WY)	(1979)	(1979)	(1998)	(2000)	(2002)	(1988)	(1986)	(1976)	(1999)	(1999)	(1970)	(1998)

03202400 GUYANDOTTE RIVER NEAR BAILEYSVILLE, WV--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1968 - 2003	
ANNUAL TOTAL	151,404		252,490			
ANNUAL MEAN	415		692		421	
HIGHEST ANNUAL MEAN					692	2003
LOWEST ANNUAL MEAN					174	1988
HIGHEST DAILY MEAN	5,200	May 3	8,840	Feb 22	17,900	Apr 5, 1977
LOWEST DAILY MEAN	53	Oct 10	53	Oct 10	23	Nov 11, 1978
ANNUAL SEVEN-DAY MINIMUM	58	Oct 6	58	Oct 6	27	Oct 17, 1978
MAXIMUM PEAK FLOW			17,600	Feb 22	(a)46,400	Jul 8, 2001
MAXIMUM PEAK STAGE			19.43	Feb 22	(b)31.25	Jul 8, 2001
INSTANTANEOUS LOW FLOW			52	Oct 10	21	Oct 14, 1970
ANNUAL RUNOFF (CFSM)	1.36		2.26		1.38	
ANNUAL RUNOFF (INCHES)	18.41		30.69		18.71	
10 PERCENT EXCEEDS	938		1,320		918	
50 PERCENT EXCEEDS	215		467		229	
90 PERCENT EXCEEDS	72		161		58	

a From rating curve extended above 37,000 ft^3/s on basis of slope-conveyance measurement.
b From floodmarks.
e Estimated.



03202750 CLEAR FORK AT CLEAR FORK, WV

LOCATION.--Lat 37°37'23", long 81°42'27", NAD27, Wyoming County, Hydrologic Unit 05070101, on left bank 0.2 mi downstream from Walls Branch, 0.7 mi upstream from Spratt Branch, 1.4 mi southwest of Clear Fork, and at mile 2.6.

DRAINAGE AREA.--126 mi^2.

REVISED RECORDS.--WDR WV-81-1: Drainage area. WDR WV-94-1: 1993.

PERIOD OF RECORD.--June 1974 to current year. Prior to October 22, 1974, partial record station.

GAGE.--Water-stage recorder with satellite telemeter. Elevation of gage is approximately 1,150 ft above NGVD of 1929, from topographic map. June 28, 1974, to Oct. 22, 1974, nonrecording gage; Oct. 23, 1974, to Oct. 26, 1977, digital recorder at site 0.9 mi upstream at different datum; Oct. 27, 1977, to Dec. 31, 1980, digital recorder at site 0.2 mi upstream at different datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	1100	5,540	11.40	May 24	0400	1,710	6.27
Feb 22	1800	*6,310	*12.26	Jun 18	1400	4,360	10.01
Apr 9	1100	1,620	6.10	Sep 4	2000	2,520	7.54
Apr 11	0800	2,490	7.49				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	107	154	166	153	520	77	174	717	94	40	38
2	13	77	122	175	172	505	82	153	489	121	36	49
3	11	61	104	552	199	406	90	130	351	145	76	38
4	11	59	88	823	620	313	95	110	765	109	58	1,070
5	9.5	71	323	507	707	271	111	109	659	81	51	755
6	9.8	347	522	364	429	243	112	161	413	65	40	251
7	9.3	326	327	278	323	209	812	140	414	110	33	143
8	8.8	196	234	258	235	182	1,040	146	472	106	42	97
9	8.2	131	188	330	186	169	1,450	159	373	156	74	72
10	8.2	97	159	417	182	152	1,000	165	262	260	63	58
11	10	238	428	375	166	136	1,950	301	205	292	56	49
12	15	509	705	275	148	127	909	251	196	233	48	42
13	14	573	499	219	130	125	500	188	164	213	41	38
14	13	283	557	189	131	138	338	143	154	163	34	35
15	13	180	545	160	1,730	121	263	170	340	125	34	36
16	188	166	417	e130	4,170	115	222	311	994	102	55	36
17	156	366	306	e115	1,190	113	193	274	1,530	85	535	32
18	64	424	243	e100	600	111	229	350	3,470	73	291	29
19	42	298	203	e90	399	105	366	586	1,510	67	140	171
20	35	248	270	e84	358	97	346	450	856	61	88	151
21	31	242	331	e77	541	99	299	1,070	544	58	70	86
22	27	286	293	e73	3,860	92	257	993	348	53	138	82
23	24	293	232	69	2,590	84	211	597	237	48	103	268
24	22	243	245	66	969	78	179	1,240	186	44	76	188
25	20	198	513	e64	607	74	162	591	153	38	58	120
26	28	171	591	e61	468	75	207	369	123	32	46	86
27	34	231	422	e59	394	77	276	255	103	29	40	71
28	53	261	309	61	458	70	263	222	91	27	34	72
29	174	230	243	73	---	69	227	259	85	27	30	58
30	265	194	198	110	---	80	194	505	79	28	30	49
31	163	---	173	122	---	84	---	528	---	28	32	---
TOTAL	1,494.8	7,106	9,944	6,442	22,115	5,040	12,460	11,100	16,283	3,073	2,492	4,270
MEAN	48.2	237	321	208	790	163	415	358	543	99.1	80.4	142
MAX	265	573	705	823	4,170	520	1,950	1,240	3,470	292	535	1,070
MIN	8.2	59	88	59	130	69	77	109	79	27	30	29
CFSM	0.38	1.88	2.55	1.65	6.27	1.29	3.30	2.84	4.31	0.79	0.64	1.13
IN.	0.44	2.10	2.94	1.90	6.53	1.49	3.68	3.28	4.81	0.91	0.74	1.26

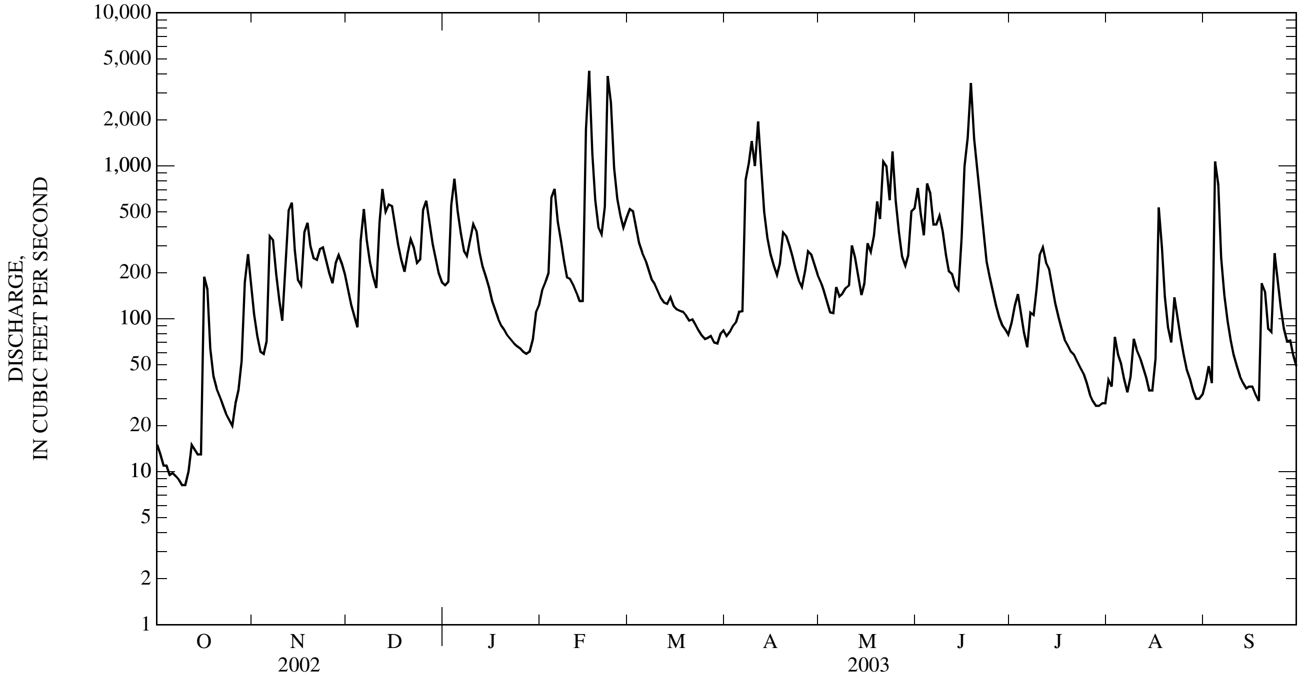
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	59.1	117	199	287	365	372	312	262	134	92.2	66.2	45.0
MAX	365	366	491	833	790	981	766	664	551	475	308	153
(WY)	(1990)	(1978)	(1979)	(1979)	(2003)	(1975)	(1987)	(1996)	(1981)	(2001)	(1977)	(1996)
MIN	5.27	10.7	37.6	47.5	89.7	96.0	74.8	38.9	16.9	12.2	6.32	5.21
(WY)	(1992)	(1999)	(1998)	(1977)	(2002)	(1988)	(1986)	(1976)	(1999)	(1988)	(1987)	(1999)

03202750 CLEAR FORK AT CLEAR FORK, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1974 - 2003	
ANNUAL TOTAL	67,509.8		101,819.8			
ANNUAL MEAN	185		279		192	
HIGHEST ANNUAL MEAN					318	1979
LOWEST ANNUAL MEAN					76.5	1988
HIGHEST DAILY MEAN	2,070	Jan 25	4,170	Feb 16	6,380	Apr 5, 1977
LOWEST DAILY MEAN	4.8	(a)	8.2	(b)	2.2	Sep 26, 1999
ANNUAL SEVEN-DAY MINIMUM	5.6	Sep 9	9.1	Oct 5	2.8	Sep 22, 1999
MAXIMUM PEAK FLOW			6,310	Feb 22	(c)10,700	Jul 8, 2001
MAXIMUM PEAK STAGE			12.26	Feb 22	(d)18.64	Apr 5, 1977
INSTANTANEOUS LOW FLOW			7.4	Oct 10	1.7	Sep 27, 1999
ANNUAL RUNOFF (CFSM)	1.47		2.21		1.52	
ANNUAL RUNOFF (INCHES)	19.93		30.06		20.70	
10 PERCENT EXCEEDS	443		563		445	
50 PERCENT EXCEEDS	90		161		86	
90 PERCENT EXCEEDS	13		34		12	

a Sept. 13, 14.
b Oct. 9, 10.
c From slope-conveyance measurement of peak flow.
d Site and datum then in use.
e Estimated.



03203600 GUYANDOTTE RIVER AT LOGAN, WV

LOCATION.--Lat 37°50'32", long 81°58'34", NAD27, Logan County, Hydrologic Unit 05070101, on right bank 200 ft downstream from Midelburg Bridge at Logan, 0.8 mi downstream from Dingess Run, 1.1 mi upstream from Island Creek, and at mile 81.0.

DRAINAGE AREA.--833 mi^2.

PERIOD OF RECORD.--October 1960 to September 1962 (annual maximum only), October 1962 to current year. Gage-height records collected in this vicinity since November 1915 are contained in reports of National Weather Service.

REVISED RECORDS.--WDR WV-82-1: Drainage area. WDR WV-94-1: 1993.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 640.49 ft above NGVD of 1929. Datum published as 640.00 ft, 1963 to 1993. Prior to Oct. 1, 1962, at datum 1.32 ft lower.

REMARKS.--Records good except those for period of estimated daily discharges (ice effect), which are poor. Flow regulated since February 1980 by R. D. Bailey Lake at mile 112.

PEAK DISCHARGES FOR CURRENT YEAR.--Maximum discharge, 19,600 ft^3/s, Feb. 16, gage height, 22.21 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	194	1,080	1,060	1,280	970	4,850	509	1,180	2,150	656	552	256
2	214	804	985	1,140	1,130	4,750	395	1,670	2,190	780	747	656
3	239	765	916	1,580	1,220	4,610	294	1,410	1,850	816	510	683
4	239	659	619	2,750	1,700	4,510	275	1,180	3,620	823	513	2,840
5	239	556	924	3,200	2,660	4,410	278	1,080	3,060	922	671	4,500
6	238	857	1,910	3,070	2,830	4,290	282	1,480	2,190	628	645	2,660
7	238	1,510	2,320	2,280	2,050	3,850	1,060	1,880	2,740	815	470	753
8	235	1,420	1,840	1,680	1,570	3,090	3,730	1,720	2,950	1,510	443	909
9	233	1,260	1,560	1,860	1,340	3,030	5,200	1,440	2,500	1,010	701	839
10	237	832	958	1,870	1,090	2,940	5,510	1,540	1,980	1,220	956	585
11	271	1,020	1,400	1,920	1,120	2,850	7,520	1,610	1,720	1,960	717	362
12	270	1,280	2,230	1,730	1,060	2,770	5,650	1,670	1,550	1,280	823	409
13	218	2,240	2,760	1,480	902	2,710	5,160	1,500	1,330	1,240	928	419
14	192	2,490	2,930	1,350	921	2,330	4,710	786	1,320	1,040	701	362
15	191	2,260	3,000	1,170	5,680	1,230	2,960	1,230	2,550	837	510	355
16	547	1,750	2,810	1,000	13,100	1,010	2,040	1,520	4,970	621	585	339
17	712	1,840	2,590	941	5,230	915	1,480	1,800	6,140	596	2,050	320
18	885	2,100	1,670	780	5,930	907	1,590	1,650	7,480	579	3,020	314
19	835	2,170	1,370	811	4,990	967	1,770	2,030	5,540	538	1,350	631
20	633	2,030	1,650	798	4,840	861	1,960	2,490	4,870	456	842	1,100
21	402	1,430	1,700	788	5,010	728	2,130	4,330	4,530	424	672	1,140
22	336	1,610	1,720	613	9,360	843	1,800	4,560	4,470	431	718	719
23	236	1,700	1,590	647	8,190	762	1,690	4,260	4,260	390	649	785
24	220	1,740	1,370	545	6,070	658	1,390	3,530	4,170	598	561	967
25	217	1,610	1,640	e530	5,350	619	1,160	2,970	4,090	605	493	1,090
26	311	1,350	2,040	e510	5,060	607	1,320	1,950	4,030	509	462	737
27	309	971	2,740	e500	4,880	602	1,680	1,570	3,970	423	306	509
28	433	1,150	2,510	571	4,880	583	1,500	1,200	3,520	347	288	577
29	779	1,270	1,880	613	---	572	1,370	1,430	3,630	351	383	458
30	1,150	1,480	1,450	747	---	548	1,290	1,370	1,310	283	408	460
31	1,260	---	1,290	814	---	517	---	1,670	---	377	275	---
TOTAL	12,713	43,234	55,432	39,568	109,133	63,919	67,703	59,706	100,680	23,065	22,949	26,734
MEAN	410	1,441	1,788	1,276	3,898	2,062	2,257	1,926	3,356	744	740	891
MAX	1,260	2,490	3,000	3,200	13,100	4,850	7,520	4,560	7,480	1,960	3,020	4,500
MIN	191	556	619	500	902	517	275	786	1,310	283	275	256

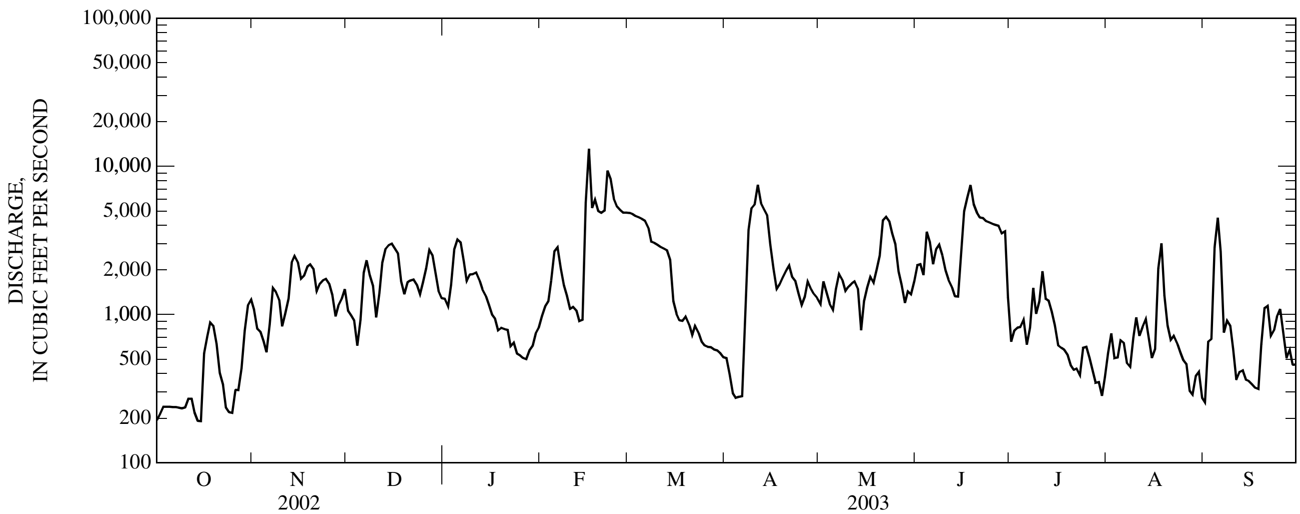
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2003, BY WATER YEAR (WY) [REGULATED, UNADJUSTED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	362	638	986	1,459	2,141	2,145	1,800	1,712	877	561	394	289
MAX	2,211	1,649	2,255	3,267	4,250	4,370	5,213	3,889	3,430	1,852	1,108	891
(WY)	(1990)	(1980)	(1992)	(1994)	(1994)	(1993)	(1987)	(1996)	(1981)	(2001)	(2000)	(2003)
MIN	162	98.9	235	375	543	449	354	577	150	120	89.1	70.2
(WY)	(1999)	(1988)	(1998)	(2000)	(2002)	(1988)	(1986)	(2000)	(1999)	(1988)	(1987)	(1999)

03203600 GUYANDOTTE RIVER AT LOGAN, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1980 - 2003	
ANNUAL TOTAL	411,043		624,836			
ANNUAL MEAN	1,126		1,712		1,108	
HIGHEST ANNUAL MEAN					1,712	2003
LOWEST ANNUAL MEAN					432	1988
HIGHEST DAILY MEAN	6,920	May 3	13,100	Feb 16	14,800	May 7, 1984
LOWEST DAILY MEAN	69	(a)	191	Oct 15	48	(b)
ANNUAL SEVEN-DAY MINIMUM	82	Sep 11	229	Oct 1	51	Sep 14, 1999
MAXIMUM PEAK FLOW			19,600	Feb 16	27,200	May 7, 1984
MAXIMUM PEAK STAGE			22.21	Feb 16	25.70	May 16, 1996
INSTANTANEOUS LOW FLOW			150	(c)	45	Oct 26, 1991
10 PERCENT EXCEEDS	2,570		4,270		2,900	
50 PERCENT EXCEEDS	617		1,220		575	
90 PERCENT EXCEEDS	160		359		149	

a Sept. 13, 14.
b July 10, Aug. 18, 1988.
c Oct. 1, 2.
e Estimated.



STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1979, BY WATER YEAR (WY) [UNREGULATED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	427	739	1,491	1,995	1,984	2,606	1,921	1,398	796	462	493	319
MAX	1,462	2,111	3,582	5,381	5,021	5,732	3,891	2,471	3,578	1,592	2,107	1,142
(WY)	(1977)	(1978)	(1973)	(1974)	(1972)	(1975)	(1977)	(1975)	(1979)	(1979)	(1972)	(1966)
MIN	48.8	69.0	67.5	125	857	813	526	362	171	122	90.1	83.2
(WY)	(1964)	(1966)	(1966)	(1966)	(1968)	(1969)	(1963)	(1964)	(1970)	(1964)	(1964)	(1965)

SUMMARY STATISTICS	WATER YEARS 1963 - 1979	
ANNUAL MEAN	1,217	
HIGHEST ANNUAL MEAN	1,936	1979
LOWEST ANNUAL MEAN	570	1969
HIGHEST DAILY MEAN	40,800	Mar 12, 1963
LOWEST DAILY MEAN	34	Sep 17, 1964
ANNUAL SEVEN-DAY MINIMUM	41	Sep 13, 1964
INSTANTANEOUS PEAK FLOW	(*)55,000	Mar 12, 1963
INSTANTANEOUS PEAK STAGE	34.98	Mar 12, 1963
INSTANTANEOUS LOW FLOW	33	Sep 17, 1964
10 PERCENT EXCEEDS	2,560	
50 PERCENT EXCEEDS	602	
90 PERCENT EXCEEDS	110	

* From rating curve extended above 26,000 ft^3/s on basis of slope-area measurements at gage heights 25.60 ft and 34.98 ft.

03204205 UNNAMED TRIBUTARY TO BALLARD FORK NEAR MUD, WV

LOCATION.--Lat 38°04'09", long 81°55'12", NAD83, Boone County, Hydrologic Unit 05070102, below valley fill, 300 ft upstream of Ballard Fork, 1 mi upstream of Spring Branch, and 3.4 mi southeast of Mud.

DRAINAGE AREA.--0.19 mi^2.

PERIOD OF RECORD.--November 1999 to September 2003 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is approximately 988 ft above NGVD of 1929, from global positioning system.

REMARKS.--No estimated daily dicharges. Records fair except those for May, June, August, and September, which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Maximum discharge, 7.1 ft^3/s, May 10, gage height, 1.76 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.10	0.32	0.28	0.34	0.19	0.71	0.18	0.17	0.40	0.27	0.17	0.14
2	0.10	0.25	0.28	0.33	0.19	0.65	0.18	0.17	0.29	0.26	0.23	0.08
3	0.09	0.21	0.27	0.41	0.18	0.58	0.18	0.17	0.74	0.25	0.23	0.08
4	0.10	0.19	0.25	0.45	0.21	0.54	0.18	0.16	0.50	0.25	0.32	0.60
5	0.10	0.23	0.26	0.45	0.19	0.52	0.18	0.27	0.55	0.24	0.76	1.1
6	0.10	0.35	0.24	0.43	0.18	0.50	0.19	0.65	0.71	0.27	0.67	0.26
7	0.10	0.38	0.24	0.35	0.17	0.46	0.30	0.53	0.82	0.25	1.2	0.20
8	0.10	0.31	0.26	0.26	0.16	0.43	0.38	0.43	1.4	0.24	1.2	0.14
9	0.09	0.26	0.26	0.27	0.15	0.42	0.52	0.34	0.73	0.36	0.69	0.12
10	0.10	0.28	0.26	0.25	0.16	0.38	0.53	0.51	0.65	0.91	0.61	0.11
11	0.12	0.54	0.38	0.25	0.15	0.35	0.51	1.4	0.24	1.9	0.43	0.11
12	0.11	0.50	0.44	0.22	0.16	0.35	0.47	1.1	0.41	1.3	0.51	0.10
13	0.13	0.38	0.59	0.21	0.16	0.36	0.41	0.47	0.27	0.95	0.87	0.11
14	0.13	0.29	1.0	0.21	0.17	0.35	0.34	0.58	0.67	0.92	1.0	0.10
15	0.12	0.26	1.0	0.18	0.99	0.32	0.31	0.61	0.50	1.3	0.74	0.10
16	0.31	0.29	0.81	0.17	3.1	0.29	0.28	1.0	1.3	0.58	0.47	0.08
17	0.44	0.55	0.66	0.17	3.7	0.27	0.27	0.49	1.0	0.59	0.38	0.07
18	0.36	0.55	0.59	0.17	2.1	0.26	0.27	0.89	1.2	0.74	0.21	0.08
19	0.28	0.49	0.42	0.17	1.6	0.25	0.25	0.73	0.88	0.39	0.34	0.92
20	0.22	0.42	0.43	0.19	1.1	0.24	0.23	0.77	0.83	0.28	0.47	0.99
21	0.19	0.38	0.45	0.17	1.2	0.24	0.25	0.86	0.62	0.41	0.29	0.32
22	0.16	0.34	0.42	0.16	2.0	0.22	0.24	0.52	0.54	0.26	0.20	0.28
23	0.15	0.31	0.36	0.13	2.1	0.21	0.23	1.1	0.50	0.26	0.13	1.2
24	0.14	0.28	0.34	0.13	1.5	0.20	0.22	0.38	0.45	0.24	0.13	0.39
25	0.13	0.27	0.38	0.12	1.1	0.20	0.22	0.31	0.41	0.19	0.10	0.27
26	0.12	0.26	0.43	0.12	0.96	0.20	0.24	0.58	0.38	0.21	0.13	0.11
27	0.13	0.24	0.42	0.12	0.82	0.19	0.22	0.67	0.37	0.16	0.10	0.10
28	0.17	0.23	0.39	0.12	0.77	0.18	0.21	0.44	0.35	0.16	0.12	0.16
29	0.46	0.24	0.36	0.16	---	0.19	0.21	0.90	0.33	0.18	0.09	0.12
30	0.66	0.27	0.33	0.18	---	0.19	0.18	0.63	0.32	0.17	0.09	0.09
31	0.45	---	0.32	0.20	---	0.19	---	0.71	---	0.16	0.09	---
TOTAL	5.96	9.87	13.12	7.09	25.46	10.44	8.38	18.54	18.36	14.65	12.97	8.53
MEAN	0.19	0.33	0.42	0.23	0.91	0.34	0.28	0.60	0.61	0.47	0.42	0.28
MAX	0.66	0.55	1.0	0.45	3.7	0.71	0.53	1.4	1.4	1.9	1.2	1.2
MIN	0.09	0.19	0.24	0.12	0.15	0.18	0.18	0.16	0.24	0.16	0.09	0.07
CFSM	1.01	1.73	2.23	1.20	4.79	1.77	1.47	3.15	3.22	2.49	2.20	1.50
IN.	1.17	1.93	2.57	1.39	4.98	2.04	1.64	3.63	3.59	2.87	2.54	1.67

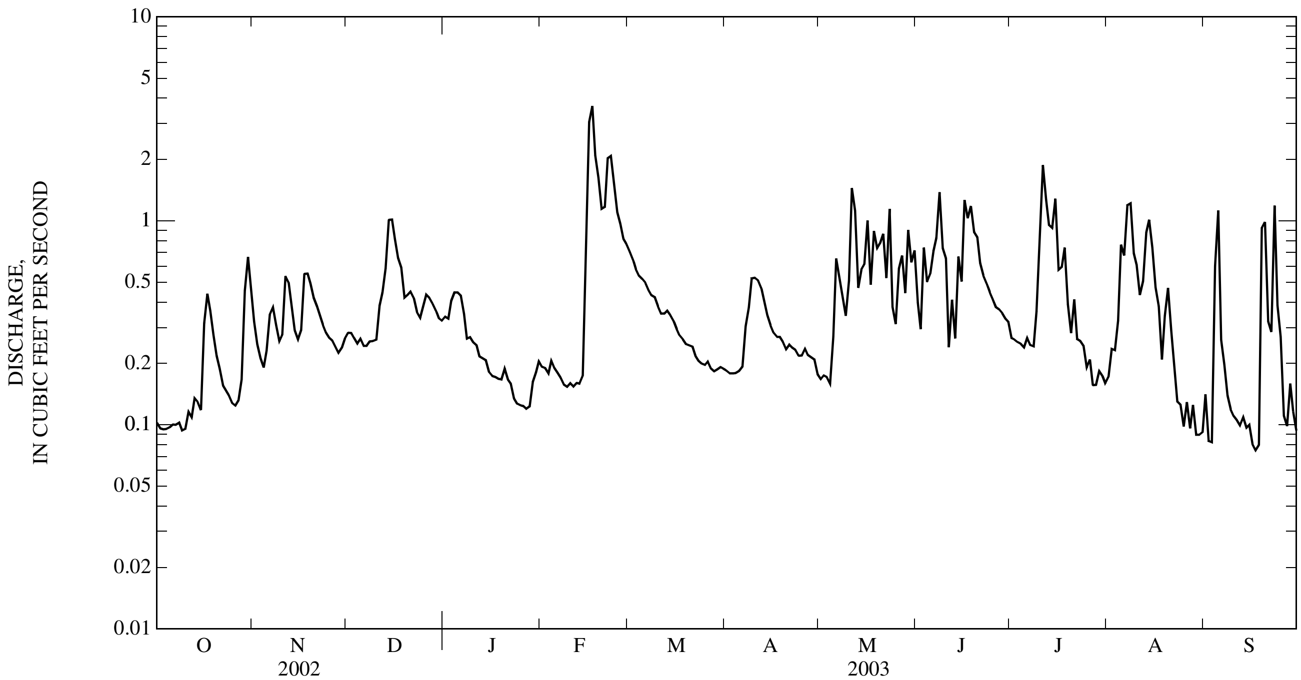
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.13	0.17	0.25	0.21	0.41	0.27	0.28	0.41	0.42	0.37	0.29	0.17
MAX	0.19	0.33	0.42	0.24	0.91	0.38	0.42	0.60	0.61	0.54	0.42	0.28
(WY)	(2003)	(2003)	(2003)	(2000)	(2003)	(2002)	(2002)	(2003)	(2003)	(2001)	(2003)	(2003)
MIN	0.094	0.093	0.11	0.15	0.13	0.17	0.19	0.21	0.24	0.19	0.12	0.10
(WY)	(2001)	(2001)	(2002)	(2001)	(2002)	(2001)	(2001)	(2000)	(2002)	(2002)	(2002)	(2002)

03204205 UNNAMED TRIBUTARY TO BALLARD FORK NEAR MUD, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2000 - 2003	
ANNUAL TOTAL	93.39		153.37			
ANNUAL MEAN	0.26		0.42		0.30	
HIGHEST ANNUAL MEAN					0.42	2003
LOWEST ANNUAL MEAN					0.20	2002
HIGHEST DAILY MEAN	1.3	Apr 1	3.7	Feb 17	3.7	Feb 17, 2003
LOWEST DAILY MEAN	0.09	(a)	0.07	Sep 17	0.07	(b)
ANNUAL SEVEN-DAY MINIMUM	0.09	Sep 17	0.09	Sep 12	0.08	Nov 18, 1999
MAXIMUM PEAK FLOW			7.1	May 10	8.9	Jul 26, 2001
MAXIMUM PEAK STAGE			1.76	May 10	1.84	Jul 26, 2001
INSTANTANEOUS LOW FLOW			0.05	(c)	0.05	(d)
ANNUAL RUNOFF (CFSM)	1.35		2.21		1.58	
ANNUAL RUNOFF (INCHES)	18.28		30.03		21.40	
10 PERCENT EXCEEDS	0.49		0.89		0.59	
50 PERCENT EXCEEDS	0.20		0.28		0.19	
90 PERCENT EXCEEDS	0.10		0.12		0.09	

a Jan. 7, 8, Sept. 10, 19-21, 23, Oct. 3, 9.
b Nov. 19-21, 1999, Sept. 17, 2003.
c Aug. 29, Sept. 3, 26, 29.
d Aug. 29, Sept. 3, 26, 29, 2003.



03204210 SPRING BRANCH NEAR MUD, WV

LOCATION.--Lat 38°04'04", long 81°56'16", NAD83, Boone County, Hydrologic Unit 05070102, on road up Ballard Fork, approximately 0.8 mi upstream from mouth of Ballard Fork, and approximately 2.6 mi southeast of Mud.

DRAINAGE AREA.--0.53 mi^2.

PERIOD OF RECORD.--November 1999 to September 2003 (discontinued).

REVISED RECORDS.--WDR WV-02-1: 2001.

GAGE.--Water-stage recorder. Datum of gage is 897.39 ft above NGVD of 1929.

REMARKS.--No estimated daily discharges. Records fair.

PEAK DISCHARGES FOR CURRENT YEAR.--Maximum discharge, 45 ft^3/s, Feb. 16, gage height, 3.86 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.19	0.28	0.57	0.59	1.4	0.39	0.53	0.31	0.18	0.06	0.03
2	0.00	0.14	0.25	0.51	0.65	1.3	0.42	0.49	0.25	0.21	0.24	0.09
3	0.00	0.11	0.22	0.86	0.68	1.2	0.44	0.45	0.59	0.17	0.23	0.14
4	0.00	0.17	0.21	1.0	0.66	1.0	0.45	0.41	1.2	0.13	0.41	2.4
5	0.00	0.27	0.26	1.1	0.52	0.97	0.51	1.0	1.1	0.11	0.24	0.39
6	0.00	0.42	0.22	1.1	0.51	0.83	0.46	5.0	0.75	0.61	0.13	0.24
7	0.00	0.32	0.20	0.98	0.53	0.70	1.4	2.1	2.2	0.20	1.7	0.19
8	0.00	0.26	0.23	1.0	0.45	0.61	2.0	1.2	2.0	0.10	0.71	0.15
9	0.00	0.21	0.23	1.0	0.42	0.56	2.9	0.92	1.2	1.5	0.42	0.11
10	0.00	0.32	0.25	0.98	0.44	0.50	2.6	1.1	0.78	4.5	0.31	0.09
11	0.11	0.97	0.63	0.86	0.39	0.47	2.2	1.6	0.70	5.9	0.26	0.08
12	0.07	0.50	0.92	0.73	0.36	0.47	1.9	1.1	0.55	1.6	0.22	0.07
13	0.01	0.34	1.4	0.68	0.34	0.51	1.6	0.86	0.49	0.89	0.18	0.06
14	0.00	0.27	4.3	0.63	0.37	0.47	1.3	0.68	0.58	0.53	0.13	0.04
15	0.01	0.27	3.1	0.53	12	0.45	1.1	2.7	0.60	0.37	0.11	0.09
16	0.34	0.39	1.6	0.46	29	0.46	0.97	2.8	2.8	0.30	0.16	0.04
17	0.10	1.5	1.2	0.39	10	0.46	0.85	2.1	5.3	0.22	0.26	0.02
18	0.02	1.1	0.92	0.34	4.1	0.46	0.84	2.6	2.5	0.19	0.11	0.04
19	0.01	0.83	0.82	0.32	2.7	0.43	0.68	2.7	1.5	0.19	0.10	1.5
20	0.04	0.61	1.1	0.31	3.1	0.43	0.58	1.8	1.8	0.13	0.08	0.28
21	0.01	0.53	0.99	0.28	4.7	0.42	0.77	2.6	1.4	0.11	0.07	0.21
22	0.01	0.53	0.92	0.25	14	0.36	0.69	2.2	1.1	0.11	0.06	0.37
23	0.00	0.43	0.75	0.24	13	0.34	0.60	1.6	0.78	0.28	0.05	0.27
24	0.00	0.40	0.71	0.21	3.6	0.32	0.56	1.1	0.55	0.10	0.03	0.22
25	0.00	0.36	0.99	0.20	2.2	0.30	0.56	0.78	0.41	0.08	0.02	0.19
26	0.01	0.36	0.92	0.20	1.8	0.34	0.74	0.58	0.33	0.06	0.02	0.16
27	0.00	0.36	0.91	0.17	1.5	0.30	0.62	0.47	0.29	0.04	0.02	0.24
28	0.08	0.34	0.85	0.18	1.4	0.29	0.55	0.42	0.24	0.07	0.02	0.19
29	1.0	0.35	0.74	0.33	---	0.33	0.67	0.52	0.21	0.06	0.01	0.14
30	0.51	0.34	0.62	0.40	---	0.41	0.57	0.38	0.18	0.02	0.06	0.11
31	0.24	---	0.54	0.48	---	0.37	---	0.43	---	0.04	0.03	---
TOTAL	2.57	13.19	27.28	17.29	110.01	17.46	29.92	43.22	32.69	19.00	6.45	8.15
MEAN	0.083	0.44	0.88	0.56	3.93	0.56	1.00	1.39	1.09	0.61	0.21	0.27
MAX	1.0	1.5	4.3	1.1	29	1.4	2.9	5.0	5.3	5.9	1.7	2.4
MIN	0.00	0.11	0.20	0.17	0.34	0.29	0.39	0.38	0.18	0.02	0.01	0.02
CFSM	0.16	0.83	1.66	1.05	7.41	1.06	1.88	2.63	2.06	1.16	0.39	0.51
IN.	0.18	0.93	1.91	1.21	7.72	1.23	2.10	3.03	2.29	1.33	0.45	0.57

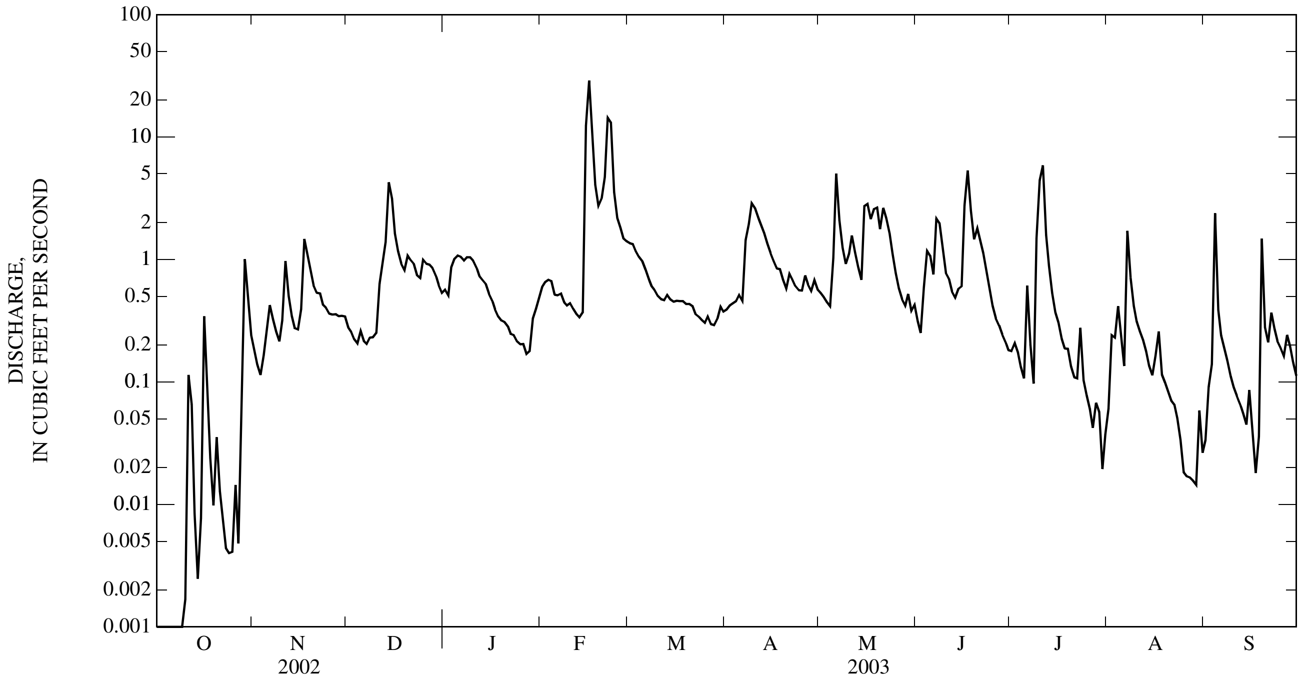
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.034	0.16	0.34	0.27	1.47	0.91	1.09	1.11	0.53	0.32	0.12	0.085
MAX	0.083	0.44	0.88	0.56	3.93	1.89	1.99	1.39	1.09	0.61	0.21	0.27
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)	(2003)	(2003)	(2003)	(2003)	(2003)
MIN	0.000	0.000	0.037	0.13	0.11	0.55	0.36	0.36	0.049	0.062	0.001	0.007
(WY)	(2002)	(2002)	(2002)	(2000)	(2002)	(2000)	(2001)	(2000)	(2002)	(2002)	(2002)	(2002)

03204210 SPRING BRANCH NEAR MUD, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2000 - 2003	
ANNUAL TOTAL	216.20		327.23			
ANNUAL MEAN	0.59		0.90		0.58	
HIGHEST ANNUAL MEAN					0.90	2003
LOWEST ANNUAL MEAN					0.36	2001
HIGHEST DAILY MEAN	13	Mar 20	29	Feb 16	29	Feb 16, 2003
LOWEST DAILY MEAN	0.00	(a)	0.00	(b)	0.00	(c)
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Nov 27, 2000
MAXIMUM PEAK FLOW			45	Feb 16	45	Feb 16, 2003
MAXIMUM PEAK STAGE			3.86	Feb 16	3.86	Feb 16, 2003
INSTANTANEOUS LOW FLOW			0.00	(a)	0.00	(c)
ANNUAL RUNOFF (CFSM)	1.12		1.69		1.09	
ANNUAL RUNOFF (INCHES)	15.17		22.97		14.83	
10 PERCENT EXCEEDS	1.7		1.8		1.4	
50 PERCENT EXCEEDS	0.11		0.42		0.14	
90 PERCENT EXCEEDS	0.00		0.04		0.00	

a Many days during the year.
b Several days during October.
c Many days most years.



03204215 BALLARD FORK NEAR MUD, WV

LOCATION.--Lat 38°04'08", long 81°56'32", NAD83, Boone County, Hydrologic Unit 05070102, on road up Ballard Fork, approximately 0.3 mi downstream from Spring Branch, and approximately 2.4 mi southeast of Mud.

DRAINAGE AREA.--2.12 mi^2.

PERIOD OF RECORD.--November 1999 to September 2003 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is approximately 869 ft above NGVD of 1929, from global positioning system.

REMARKS.--Records fair except those for periods of estimated daily discharges (recorder malfunction, ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Maximum discharge, 116 ft^3/s, Feb. 16, gage height, 2.83 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.34	1.6	1.7	2.6	2.2	5.0	1.7	1.8	1.6	1.2	0.84	0.59
2	0.34	1.3	1.7	2.4	2.3	4.8	1.8	1.8	1.5	1.4	1.3	0.70
3	0.33	1.1	1.5	4.0	2.3	e4.5	1.8	1.7	2.8	1.2	1.4	0.92
4	0.37	1.1	1.4	4.3	2.8	e4.3	1.9	1.6	5.7	1.1	2.1	8.2
5	0.39	e1.6	1.8	4.4	2.4	e4.1	2.3	3.7	4.4	1.0	1.6	2.1
6	0.34	e2.5	1.6	4.4	2.3	e3.6	2.0	17	3.3	2.4	1.1	1.5
7	0.27	e2.3	1.5	4.0	2.4	e3.3	6.8	8.5	9.6	1.8	8.6	1.2
8	0.26	e1.8	1.6	4.0	2.1	e2.8	7.4	5.3	7.9	1.2	4.1	1.1
9	0.34	e1.6	1.6	3.8	2.2	e2.7	11	3.9	4.9	6.0	2.5	0.88
10	0.65	e2.0	1.7	3.3	2.1	e2.5	10	6.9	3.3	15	1.9	0.79
11	1.6	e4.9	3.4	2.8	2.0	e2.4	8.4	14	3.2	19	1.7	0.71
12	1.9	e3.3	4.0	2.4	1.9	e2.3	6.5	7.2	2.9	8.0	1.5	0.65
13	1.4	e2.4	5.8	2.3	1.8	2.5	5.0	4.8	2.5	4.6	1.4	0.62
14	1.0	e1.9	11	2.2	1.9	2.3	4.0	3.4	2.8	3.1	1.2	0.58
15	0.85	e1.8	10	1.9	23	2.2	3.4	9.1	2.9	2.2	1.1	0.78
16	4.8	e2.3	6.9	e1.7	77	2.1	3.0	9.9	9.7	1.9	1.2	0.57
17	2.1	e6.6	5.2	e1.5	39	2.1	2.7	7.6	18	1.6	1.4	0.50
18	1.6	e5.5	4.2	e1.4	19	2.1	2.8	9.9	9.6	1.5	0.98	0.56
19	1.3	4.5	3.7	e1.3	12	1.9	2.3	9.9	6.0	1.5	0.88	7.2
20	1.3	3.6	5.2	e1.2	16	1.8	2.1	6.2	7.4	1.3	0.80	2.1
21	0.97	3.2	4.5	e1.1	22	1.8	2.7	8.5	5.4	1.2	0.78	1.5
22	0.80	3.3	4.1	e1.0	47	1.7	2.3	6.7	4.1	1.1	0.70	2.0
23	0.69	2.8	3.4	e1.0	42	1.6	2.1	5.0	3.1	1.5	0.67	1.7
24	0.64	2.5	3.4	e0.94	21	1.6	2.0	3.7	2.4	1.1	0.59	1.4
25	0.69	2.3	4.7	e0.90	12	1.5	1.9	2.9	2.0	0.95	0.56	1.2
26	0.88	2.4	3.9	e0.86	10	1.7	3.4	2.3	1.7	0.85	0.53	1.1
27	0.72	2.3	3.7	e0.84	8.7	1.5	2.3	2.0	1.6	0.79	0.50	1.4
28	1.4	2.1	3.4	1.3	7.0	1.5	1.9	1.9	1.5	0.88	0.47	1.3
29	7.2	2.1	3.0	1.8	---	1.6	2.4	2.3	1.4	0.83	0.46	1.1
30	3.8	2.1	2.7	1.9	---	1.9	2.0	1.9	1.3	0.74	0.63	0.93
31	2.2	---	2.4	2.0	---	1.7	---	2.0	---	0.79	0.58	---
TOTAL	41.47	78.8	114.7	69.54	386.4	77.4	109.9	173.4	134.5	87.73	44.07	45.88
MEAN	1.34	2.63	3.70	2.24	13.8	2.50	3.66	5.59	4.48	2.83	1.42	1.53
MAX	7.2	6.6	11	4.4	77	5.0	11	17	18	19	8.6	8.2
MIN	0.26	1.1	1.4	0.84	1.8	1.5	1.7	1.6	1.3	0.74	0.46	0.50
CFSM	0.63	1.24	1.75	1.06	6.51	1.18	1.73	2.64	2.11	1.33	0.67	0.72
IN.	0.73	1.38	2.01	1.22	6.78	1.36	1.93	3.04	2.36	1.54	0.77	0.81

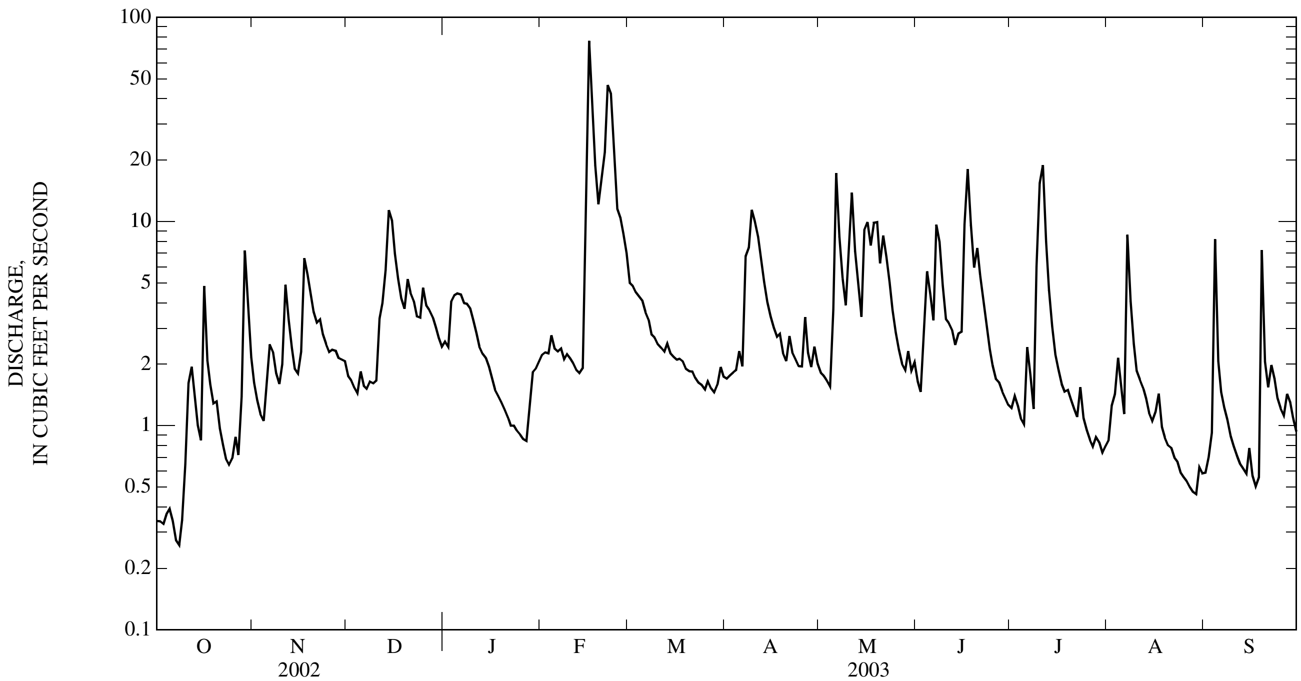
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.57	1.03	1.62	1.28	5.11	2.69	3.42	3.84	2.50	1.84	1.00	0.65
MAX	1.34	2.63	3.70	2.24	13.8	4.34	4.72	5.59	4.48	2.83	1.42	1.53
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)	(2003)	(2003)	(2003)	(2003)	(2003)
MIN	0.16	0.17	0.41	0.70	0.74	1.83	1.69	1.70	0.74	0.74	0.35	0.32
(WY)	(2002)	(2001)	(2002)	(2000)	(2002)	(2001)	(2001)	(2000)	(2002)	(2002)	(2002)	(2001)

03204215 BALLARD FORK NEAR MUD, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2000 - 2003	
ANNUAL TOTAL	750.82		1,363.79			
ANNUAL MEAN	2.06		3.74		2.21	
HIGHEST ANNUAL MEAN					3.74	2003
LOWEST ANNUAL MEAN					1.41	2001
HIGHEST DAILY MEAN	21	Mar 20	77	Feb 16	77	Feb 16, 2003
LOWEST DAILY MEAN	0.09	Sep 10	0.26	Oct 8	0.09	Sep 10, 2002
ANNUAL SEVEN-DAY MINIMUM	0.11	Sep 6	0.33	Oct 2	0.11	Sep 6, 2002
MAXIMUM PEAK FLOW			116	Feb 16	116	Feb 16, 2003
MAXIMUM PEAK STAGE			2.83	Feb 16	2.83	Feb 16, 2003
INSTANTANEOUS LOW FLOW			0.20	Oct 6	0.07	(a)
ANNUAL RUNOFF (CFSM)	0.97		1.76		1.04	
ANNUAL RUNOFF (INCHES)	13.17		23.93		14.17	
10 PERCENT EXCEEDS	5.0		7.7		5.0	
50 PERCENT EXCEEDS	0.97		2.1		0.97	
90 PERCENT EXCEEDS	0.22		0.79		0.18	

a Sept. 8-10, 2002.
e Estimated.



03206600 EAST FORK TWELVEPOLE CREEK NEAR DUNLOW, WV

LOCATION.--Lat 38°01'02", long 82°17'46", NAD27, Wayne County, Hydrologic Unit 05090102, on left bank 0.2 mi upstream from Maynard Branch, 0.9 mi downstream from McComas Branch, 1.5 mi upstream from Devilstrace Branch, and 7.5 mi east of Dunlow, and at mile 60.2.

DRAINAGE AREA.--38.5 mi^2.

PERIOD OF RECORD.--October 1964 to current year.

REVISED RECORDS.--WDR WV-82-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 710.00 ft above NGVD 1929. Prior to Dec. 22, 1964, nonrecording gage at same site and datum.

REMARKS.--Records fair, except those for periods of estimated daily discharges (ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 840 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	1500	3,360	13.79	Jun 18	0700	2,810	13.05
Feb 23	0700	1,850	11.53	Sep 4	1000	1,030	9.84
Jun 17	0100	*4,770	*15.45				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	26	18	48	52	93	60	41	27	16	5.2	10
2	1.6	19	16	49	52	88	54	42	23	15	5.5	13
3	1.4	15	14	57	51	77	48	34	28	16	28	22
4	1.7	15	12	68	155	66	44	30	82	14	22	420
5	2.9	40	16	71	130	60	45	59	86	12	23	100
6	3.1	127	16	76	101	54	37	89	61	19	13	46
7	2.8	78	12	74	89	46	140	62	159	36	28	31
8	2.5	52	16	76	68	41	165	51	141	15	29	23
9	2.4	44	19	71	66	38	271	68	84	23	20	18
10	4.6	91	19	60	60	33	241	52	54	68	14	14
11	15	241	77	48	56	29	218	54	132	120	16	12
12	19	98	125	39	52	29	175	42	230	53	19	9.9
13	8.7	55	141	e33	47	33	120	32	130	60	12	8.5
14	5.8	36	336	e29	47	38	87	25	184	41	8.9	7.5
15	4.2	28	266	e26	848	34	70	35	274	29	7.1	8.6
16	52	47	167	e23	2,580	33	59	57	629	23	6.8	7.7
17	28	116	109	e20	1,250	33	53	42	1,740	18	17	6.1
18	14	115	81	18	357	32	72	67	1,330	15	12	5.3
19	8.6	84	64	e16	202	30	62	125	281	14	8.0	6.0
20	8.9	63	158	e15	157	29	58	82	261	12	6.1	6.3
21	9.6	51	139	e14	160	41	87	165	176	10	5.2	5.3
22	7.4	58	108	e13	760	34	87	137	107	9.9	4.7	8.5
23	5.7	46	78	e12	1,150	32	74	95	68	13	6.0	19
24	4.5	38	71	e11	307	30	62	68	49	12	5.3	9.7
25	4.0	32	95	e11	193	28	55	49	37	9.2	4.1	6.7
26	4.7	27	89	e10	142	29	64	39	30	6.8	3.5	6.1
27	4.6	30	80	e10	112	28	63	32	26	5.7	3.1	7.9
28	18	25	71	13	106	25	57	29	23	5.8	3.1	14
29	156	23	62	25	---	28	53	30	19	12	3.8	12
30	124	23	52	50	---	48	45	29	17	6.5	6.2	9.0
31	42	---	45	48	---	62	---	27	---	5.3	13	---
TOTAL	569.7	1,743	2,572	1,134	9,350	1,301	2,726	1,789	6,488	715.2	358.6	873.1
MEAN	18.4	58.1	83.0	36.6	334	42.0	90.9	57.7	216	23.1	11.6	29.1
MAX	156	241	336	76	2,580	93	271	165	1,740	120	29	420
MIN	1.4	15	12	10	47	25	37	25	17	5.3	3.1	5.3
CFSM	0.48	1.51	2.16	0.95	8.67	1.09	2.36	1.50	5.62	0.60	0.30	0.76
IN.	0.55	1.68	2.49	1.10	9.03	1.26	2.63	1.73	6.27	0.69	0.35	0.84

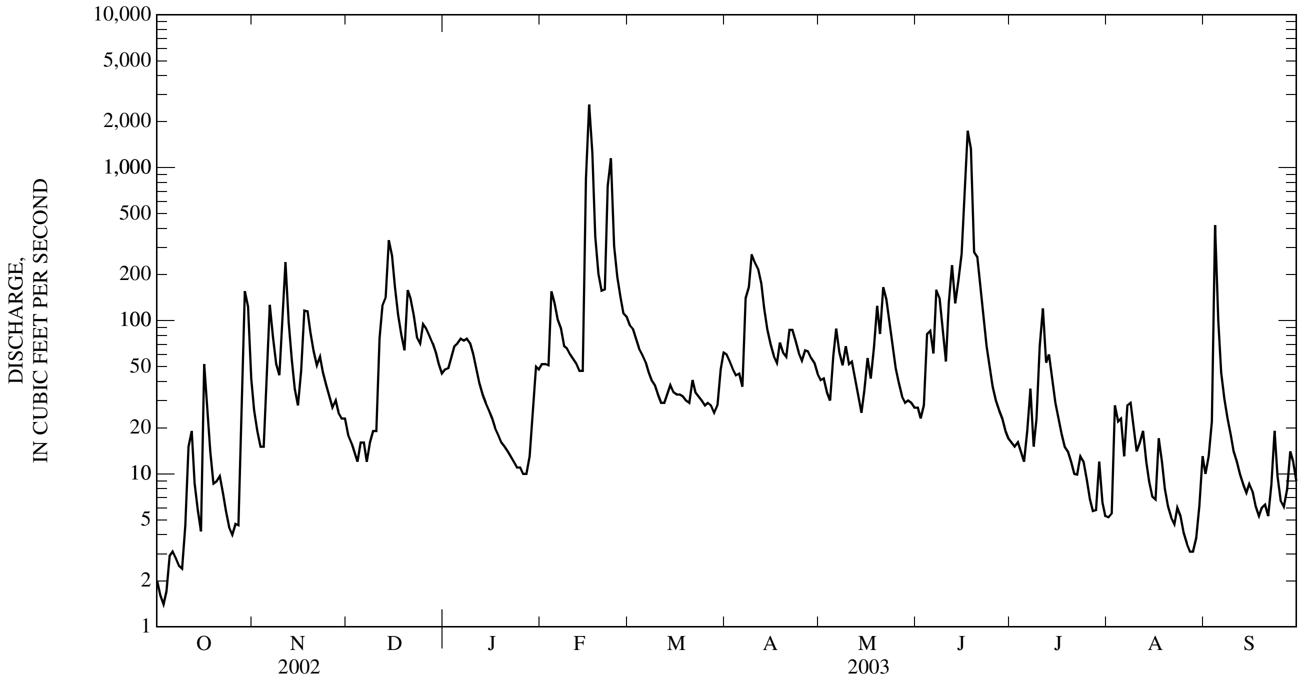
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	11.2	29.0	64.5	75.9	100	108	90.5	68.3	38.3	15.9	11.9	9.16
MAX	92.6	98.1	279	247	334	282	212	240	216	92.4	79.4	70.9
(WY)	(1990)	(1974)	(1979)	(1994)	(2003)	(1994)	(1987)	(1996)	(2003)	(1971)	(1977)	(1979)
MIN	0.65	1.28	1.52	8.75	11.2	23.3	13.3	9.11	0.70	1.86	0.71	0.20
(WY)	(1992)	(2002)	(1966)	(2000)	(2002)	(1969)	(1986)	(1991)	(1966)	(1988)	(1967)	(1967)

03206600 EAST FORK TWELVEPOLE CREEK NEAR DUNLOW, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1965 - 2003	
ANNUAL TOTAL	18,440.81		29,619.6			
ANNUAL MEAN	50.5		81.1		51.6	
HIGHEST ANNUAL MEAN					98.3	1979
LOWEST ANNUAL MEAN					18.9	1988
HIGHEST DAILY MEAN	1,080	Mar 20	2,580	Feb 16	3,110	Dec 9, 1978
LOWEST DAILY MEAN	0.45	Sep 14	1.4	Oct 3	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	0.76	Sep 9	2.2	Oct 1	0.01	Sep 18, 1967
MAXIMUM PEAK FLOW			4,770	Jun 17	(b)5,040	Dec 9, 1978
MAXIMUM PEAK STAGE			15.45	Jun 17	15.84	Dec 9, 1978
INSTANTANEOUS LOW FLOW			1.4	(c)	0.00	(a)
ANNUAL RUNOFF (CFSM)	1.31		2.11		1.34	
ANNUAL RUNOFF (INCHES)	17.82		28.62		18.22	
10 PERCENT EXCEEDS	128		141		120	
50 PERCENT EXCEEDS	14		34		17	
90 PERCENT EXCEEDS	2.1		6.1		1.3	

a Sept. 15-17, 1998.
b From rating curve extended above 1,300 ft^3/s on basis of slope-area measurement of peak flow.
c Oct. 3, 4.
e Estimated.



03212750 TUG FORK AT WELCH, WV

LOCATION.--Lat 37°26'28", long 81°36'00", NAD27, McDowell County, Hydrologic Unit 05070201, on left bank at bridge in the Hemphill section of Welch, 20 ft downstream from Mod Branch, and at mile 131.5.

DRAINAGE AREA.--174 mi^2.

PERIOD OF RECORD.--January 1985 to September 1993, October 1996 to current year.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,268.00 ft above NGVD of 1929.

REMARKS.--No estimated daily discharges. Records good.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	0400	4,320	10.97	Aug 16	1300	3,520	10.02
Feb 22	1335	*5,060	(a)*11.73				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	79	141	231	216	866	233	304	304	218	174	201
2	46	68	130	241	220	804	241	336	277	259	150	172
3	45	62	125	514	225	710	237	299	267	259	192	168
4	44	65	123	547	367	643	232	275	273	220	156	298
5	44	71	425	433	387	599	236	298	246	201	155	252
6	44	108	400	375	326	558	220	341	230	203	143	194
7	42	108	266	336	306	514	478	316	294	336	217	176
8	42	85	218	325	268	480	542	348	320	224	309	160
9	42	73	190	332	250	453	681	363	302	238	319	149
10	41	70	175	338	253	423	892	342	261	263	256	145
11	43	239	363	320	241	404	1,680	324	244	249	246	142
12	43	546	373	294	233	376	956	290	252	214	227	136
13	43	355	327	277	224	369	695	268	231	200	186	132
14	41	193	350	264	231	357	564	251	237	184	195	130
15	52	144	335	246	1,580	337	486	321	543	174	175	157
16	246	134	306	233	2,980	325	435	384	592	167	1,440	146
17	110	247	267	230	1,300	315	395	314	573	158	1,400	131
18	70	240	240	214	849	305	420	388	596	151	734	130
19	58	189	227	209	662	289	405	425	696	155	478	358
20	55	158	245	202	608	290	382	378	609	147	372	213
21	54	179	230	196	703	279	370	457	504	137	316	166
22	50	267	221	187	3,090	269	369	462	426	173	281	158
23	46	260	206	178	2,250	261	338	418	365	186	251	162
24	44	208	228	171	1,390	251	322	381	323	159	232	140
25	44	175	312	169	1,050	240	313	342	293	138	214	131
26	46	159	337	167	890	241	317	322	271	129	200	127
27	44	203	298	159	808	232	292	297	254	125	192	124
28	71	186	271	158	864	219	275	290	254	122	187	121
29	102	171	251	171	---	216	265	297	245	362	184	116
30	157	159	234	192	---	237	274	327	221	218	203	111
31	108	---	223	201	---	226	---	320	---	173	203	---
TOTAL	1,965	5,201	8,037	8,110	22,771	12,088	13,545	10,478	10,503	6,142	9,987	4,946
MEAN	63.4	173	259	262	813	390	452	338	350	198	322	165
MAX	246	546	425	547	3,090	866	1,680	462	696	362	1,440	358
MIN	41	62	123	158	216	216	220	251	221	122	143	111
CFSM	0.36	1.00	1.49	1.50	4.67	2.24	2.59	1.94	2.01	1.14	1.85	0.95
IN.	0.42	1.11	1.72	1.73	4.87	2.58	2.90	2.24	2.25	1.31	2.14	1.06

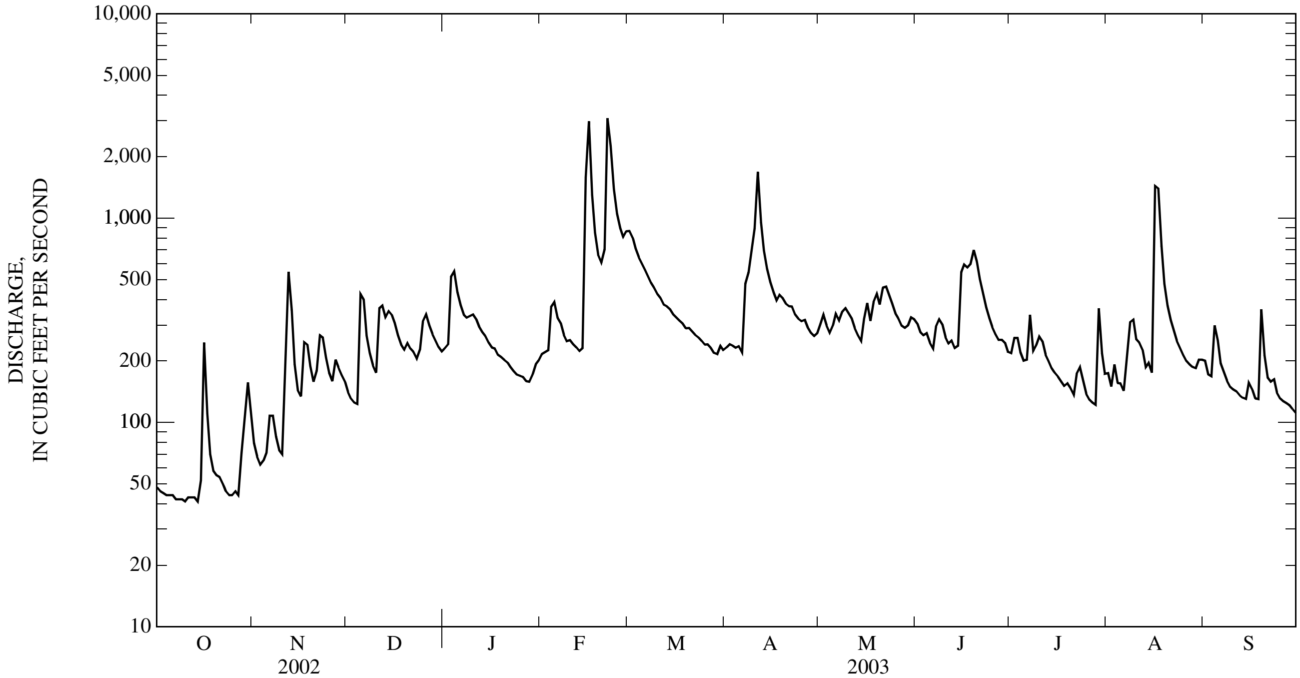
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	63.8	83.6	137	173	315	367	373	315	192	146	108	70.7
MAX	189	173	365	405	813	741	1,206	648	350	505	322	165
(WY)	(1990)	(2003)	(1997)	(1990)	(2003)	(1993)	(1987)	(1989)	(2003)	(2001)	(2003)	(2003)
MIN	34.3	35.6	35.5	42.6	69.1	83.3	155	128	74.1	56.6	39.3	39.1
(WY)	(2000)	(1999)	(2000)	(2000)	(2002)	(1988)	(1986)	(1988)	(1988)	(1988)	(1988)	(1987)

03212750 TUG FORK AT WELCH, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1985 - 2003	
ANNUAL TOTAL	67,522		113,773			
ANNUAL MEAN	185		312		197	
HIGHEST ANNUAL MEAN					312	2003
LOWEST ANNUAL MEAN					75.9	1988
HIGHEST DAILY MEAN	(e)3,910	May 2	3,090	Feb 22	4,300	Apr 25, 1987
LOWEST DAILY MEAN	(e)31	(a)	41	(b)	25	Oct 19, 1999
ANNUAL SEVEN-DAY MINIMUM	32	Jan 2	42	Oct 8	27	Oct 22, 1999
MAXIMUM PEAK FLOW			5,060	Feb 22	(c)13,100	May 2, 2002
MAXIMUM PEAK STAGE			(d)11.73	Feb 22	(f)22.09	May 2, 2002
INSTANTANEOUS LOW FLOW			38	(g)	17	Jan 10, 2001
ANNUAL RUNOFF (CFSM)	1.06		1.79		1.13	
ANNUAL RUNOFF (INCHES)	14.44		24.32		15.39	
10 PERCENT EXCEEDS	358		544		400	
50 PERCENT EXCEEDS	108		241		123	
90 PERCENT EXCEEDS	43		108		39	

a Jan. 6-8.
b Oct. 10, 14.
c From rating curve extended above 11,500 ft^3/s.
d Observed.
e Estimated.
f From floodmarks.
g Oct. 14, 15.



03212980 DRY FORK AT BEARTOWN, WV

LOCATION.--Lat 37°23'43", long 81°48'10", NAD27, McDowell County, Hydrologic Unit 05070201, on left bank 20 ft upstream from bridge on State Highway 80/3, 0.4 mi upstream from Grapevine Branch, and at mile 7.1.

DRAINAGE AREA.--209 mi^2.

PERIOD OF RECORD.--February 1985 to September 1993, October 1996 to current year.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1,056.00 ft above NGVD of 1929.

REMARKS.--No estimated daily discharges. Records good.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	0600	*9,700	*11.80	Apr 11	0300	6,190	9.66
Feb 22	1600	7,680	10.55				

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	91	163	225	273	1,060	192	223	230	114	144	148
2	28	70	136	215	289	865	226	258	210	142	123	120
3	27	57	124	721	296	674	234	231	191	180	191	112
4	26	56	113	978	555	545	220	207	195	142	171	219
5	25	60	751	647	689	482	229	202	172	121	159	256
6	23	92	960	515	493	429	213	191	152	119	151	164
7	23	120	504	433	412	375	611	179	202	205	186	135
8	22	99	353	401	328	336	768	243	325	156	350	119
9	24	76	268	371	273	314	1,570	248	293	172	599	108
10	24	64	228	339	273	291	1,880	234	220	252	303	102
11	22	387	462	304	255	271	3,740	219	182	202	237	95
12	26	998	613	270	238	259	1,330	194	185	184	682	89
13	26	740	483	246	223	258	794	170	163	166	344	87
14	26	316	508	236	225	262	575	156	147	142	311	85
15	28	203	497	214	2,260	240	459	257	201	128	235	90
16	174	168	432	189	6,580	235	389	522	334	116	1,430	104
17	122	277	352	189	1,880	231	348	364	423	109	1,820	89
18	62	365	291	167	1,090	230	409	323	474	100	902	82
19	44	274	252	164	787	215	492	301	519	96	460	104
20	39	215	286	158	665	205	450	263	458	91	302	103
21	37	211	292	154	642	200	410	347	350	88	242	88
22	35	359	279	143	4,080	183	386	411	272	117	203	85
23	31	402	249	136	3,140	173	333	413	221	127	172	97
24	29	289	254	133	1,470	169	302	527	186	112	145	88
25	27	220	445	127	948	162	291	374	162	93	130	80
26	28	179	554	119	744	164	300	303	147	84	122	77
27	27	215	455	116	662	164	268	251	140	80	116	77
28	54	241	373	114	970	155	244	217	140	81	111	80
29	104	217	316	127	---	151	230	213	137	283	106	71
30	157	194	266	183	---	170	227	212	124	171	123	69
31	135	---	237	235	---	176	---	211	---	143	125	---
TOTAL	1,484	7,255	11,496	8,569	30,740	9,644	18,120	8,464	7,155	4,316	10,695	3,223
MEAN	47.9	242	371	276	1,098	311	604	273	238	139	345	107
MAX	174	998	960	978	6,580	1,060	3,740	527	519	283	1,820	256
MIN	22	56	113	114	223	151	192	156	124	80	106	69
CFSM	0.23	1.16	1.77	1.32	5.25	1.49	2.89	1.31	1.14	0.67	1.65	0.51
IN.	0.26	1.29	2.05	1.53	5.47	1.72	3.23	1.51	1.27	0.77	1.90	0.57

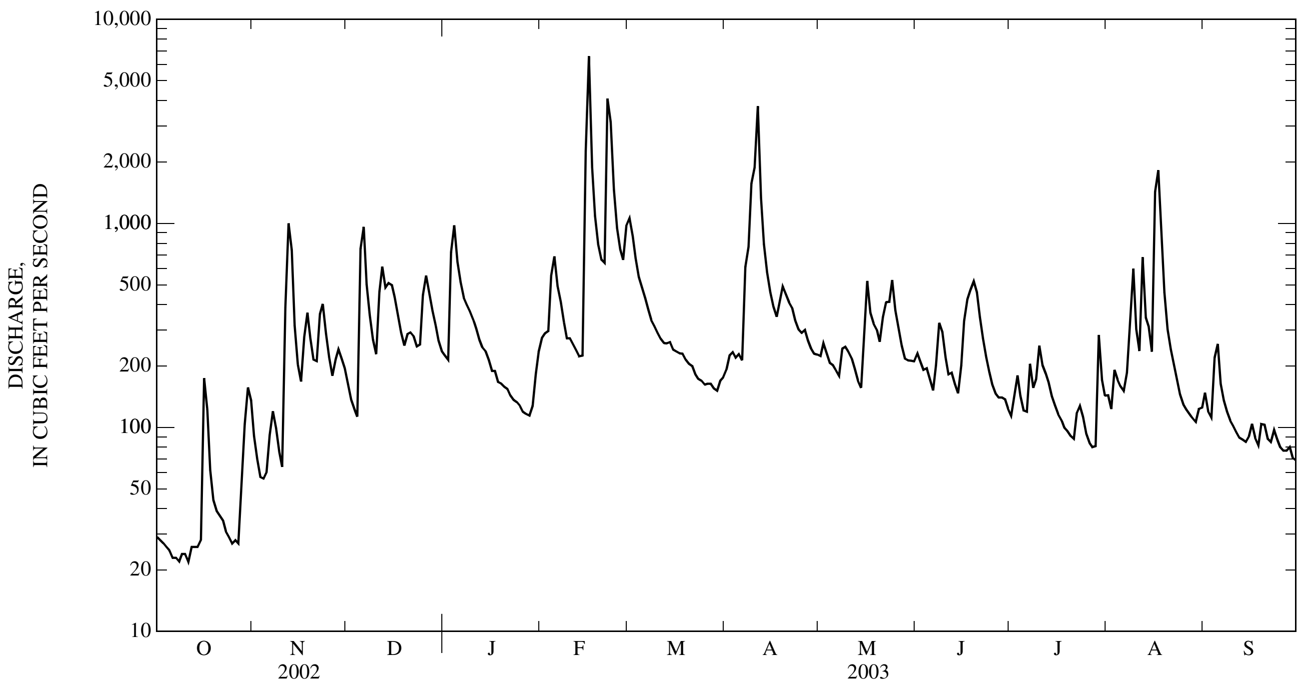
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	59.8	90.3	177	222	414	459	434	312	182	127	91.1	56.2
MAX	347	246	572	500	1,098	1,033	1,455	799	469	564	345	221
(WY)	(1990)	(1990)	(1992)	(1990)	(2003)	(1993)	(1987)	(1989)	(1998)	(2001)	(2003)	(1989)
MIN	22.4	23.6	28.8	62.0	72.0	93.7	110	104	39.3	28.2	22.4	26.9
(WY)	(1998)	(1999)	(1998)	(2001)	(2002)	(1988)	(1986)	(1988)	(1988)	(1988)	(1988)	(1985)

03212980 DRY FORK AT BEARTOWN, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1985 - 2003	
ANNUAL TOTAL	75,407		121,161			
ANNUAL MEAN	207		332		222	
HIGHEST ANNUAL MEAN					332	2003
LOWEST ANNUAL MEAN					75.0	1988
HIGHEST DAILY MEAN	3,750	Mar 18	6,580	Feb 16	6,580	Feb 16, 2003
LOWEST DAILY MEAN	22	(a)	22	(a)	15	(b)
ANNUAL SEVEN-DAY MINIMUM	23	Oct 5	23	Oct 5	17	Oct 26, 1999
MAXIMUM PEAK FLOW			9,700	Feb 16	(c)15,900	May 2, 2002
MAXIMUM PEAK STAGE			11.80	Feb 16	(d)15.21	May 2, 2002
INSTANTANEOUS LOW FLOW			21	(a)	13	(f)
ANNUAL RUNOFF (CFSM)	0.99		1.59		1.06	
ANNUAL RUNOFF (INCHES)	13.42		21.57		14.46	
10 PERCENT EXCEEDS	454		612		490	
50 PERCENT EXCEEDS	100		215		109	
90 PERCENT EXCEEDS	27		79		28	

a Oct. 8, 11.
b Oct. 29, 1987, and Sept. 3, 1988.
c From rating curve extended above 11,700 ft^3/s.
d From floodmarks.
f Oct. 29, 30, 1987.



03213500 PANTHER CREEK NEAR PANTHER, WV

LOCATION.--Lat 37°26'42", long 81°52'15", NAD27, McDowell County, Hydrologic Unit 05070201, on left bank 200 ft downstream from Cub Branch, 2.1 mi upstream from Trace Fork, 3.0 mi southwest of Panther, and at mile 4.2.

DRAINAGE AREA.--31.0 mi^2 .

PERIOD OF RECORD.--July 1946 to September 1986, October 2002 to September 2003.

REVISED RECORDS.--WSP 1505: 1955(P). WSP 1908: 1955(M), 1957(M). WDR WV-97-1: 1948(P), 1950(M), 1955(P), 1964-81(P).

GAGE.--Water-stage recorder. Elevation of gage is 1,050 ft, from topographic map.

REMARKS.--Records good except those for periods of estimated daily discharges (no gage-height record, ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	0430	*5,740	*11.80	Apr 10	2230	2,180	8.49
Feb 22	1130	3,140	9.58	May 23	2030	1,200	7.04

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	11	16	25	39	156	22	20	31	13	15	8.7
2	---	7.3	13	25	46	118	27	23	24	15	10	7.4
3	---	6.0	12	175	51	81	28	20	21	22	10	8.7
4	---	6.3	10	171	116	62	28	17	27	17	9.0	39
5	---	7.8	98	92	125	52	33	18	25	13	13	26
6	---	24	122	66	77	44	28	16	20	11	e17	15
7	---	22	60	55	58	35	346	14	38	60	e23	12
8	---	14	40	54	41	31	282	25	89	27	e32	9.1
9	---	9.8	30	50	34	29	363	28	76	23	e35	7.8
10	---	7.7	25	43	34	25	579	28	49	23	e31	7.1
11	---	42	85	35	32	22	753	24	33	25	e29	6.4
12	---	113	93	29	30	21	209	19	25	19	e27	5.9
13	---	73	62	26	27	21	104	14	20	20	e25	5.6
14	---	33	72	25	28	22	69	12	18	16	e28	5.2
15	---	23	81	20	856	19	54	33	45	13	e50	5.9
16	---	22	62	18	2,100	19	45	109	62	11	e140	5.1
17	---	59	45	e16	354	19	40	59	191	8.6	e250	4.1
18	---	62	34	e15	176	19	60	48	259	7.3	e110	4.0
19	---	41	29	e13	106	18	70	52	286	6.7	e58	7.2
20	---	30	34	e12	82	17	65	43	e140	6.2	e40	6.0
21	---	30	33	e12	76	17	56	82	e80	5.7	34	4.5
22	---	45	32	e11	1,250	15	48	106	e50	15	25	5.5
23	---	48	27	e10	417	14	38	285	e32	27	19	12
24	---	36	31	e9.5	182	13	31	413	e25	15	14	6.4
25	e1.8	26	58	e9.0	115	13	29	128	17	11	12	4.9
26	1.9	21	73	e8.5	89	14	32	73	14	8.3	9.7	4.5
27	1.8	23	57	e8.0	79	14	29	50	12	7.3	8.3	5.0
28	5.8	21	45	8.8	135	12	25	42	11	6.8	7.6	9.6
29	21	21	36	14	---	13	23	40	32	74	7.9	6.4
30	32	20	29	24	---	17	21	39	17	37	8.5	5.0
31	16	---	25	32	---	18	---	36	---	22	7.8	---
TOTAL	---	904.9	1,469	1,111.8	6,755	990	3,537	1,916	1,769	585.9	1,105.8	260.0
MEAN	---	30.2	47.4	35.9	241	31.9	118	61.8	59.0	18.9	35.7	8.67
MAX	---	113	122	175	2,100	156	753	413	286	74	250	39
MIN	---	6.0	10	8.0	27	12	21	12	11	5.7	7.6	4.0
CFSM	---	0.97	1.53	1.16	7.78	1.03	3.80	1.99	1.90	0.61	1.15	0.28
IN.	---	1.09	1.76	1.33	8.11	1.19	4.24	2.30	2.12	0.70	1.33	0.31

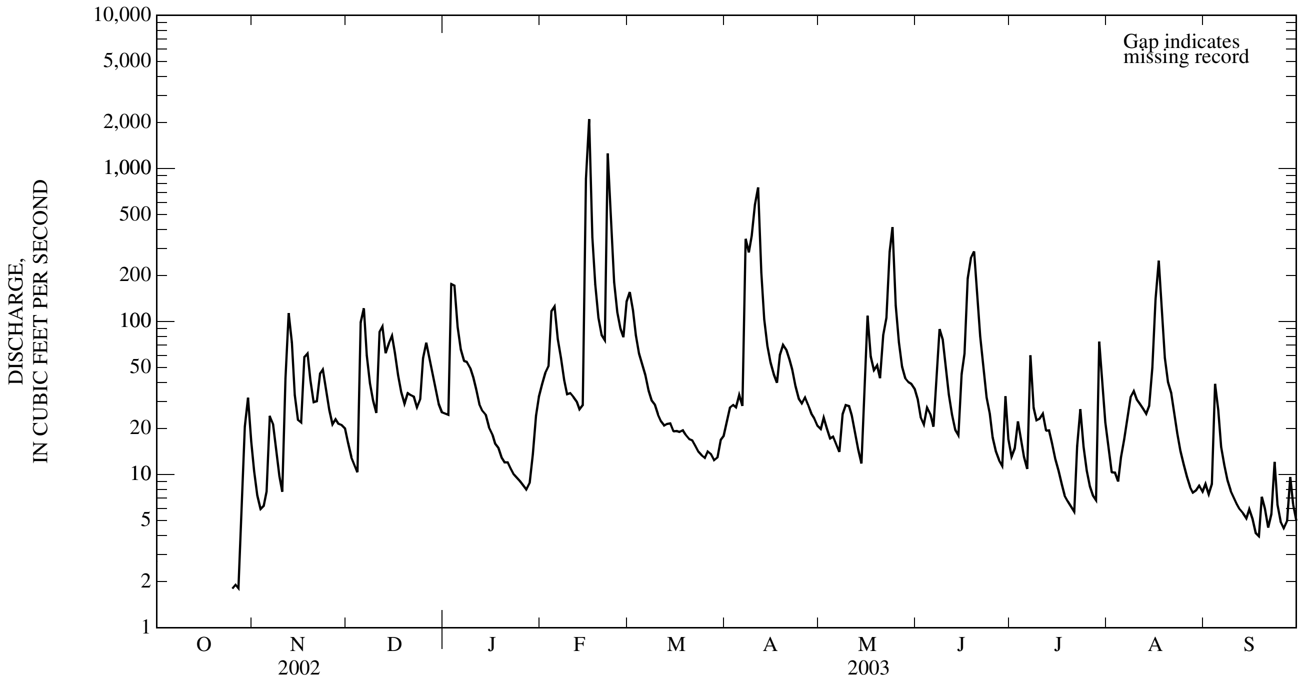
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.37	17.8	36.1	55.2	74.2	82.8	66.4	38.7	18.1	10.6	11.0	5.77
MAX	65.7	83.1	115	179	241	280	146	136	127	58.9	72.5	59.6
(WY)	(1977)	(1978)	(1973)	(1957)	(2003)	(1955)	(1948)	(1958)	(1979)	(1956)	(1958)	(1966)
MIN	0.14	0.24	0.65	1.90	9.66	18.3	9.76	6.98	1.31	1.05	0.61	0.18
(WY)	(1954)	(1954)	(1966)	(1966)	(1968)	(1984)	(1986)	(1957)	(1966)	(1959)	(1955)	(1946)

03213500 PANTHER CREEK NEAR PANTHER, WV—Continued

SUMMARY STATISTICS	WATER YEARS 1946 - 2003	
ANNUAL MEAN	34.6	
HIGHEST ANNUAL MEAN	55.8	1979
LOWEST ANNUAL MEAN	15.1	1969
HIGHEST DAILY MEAN	2,300	Apr 4, 1977
LOWEST DAILY MEAN	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	0.01	Sep 16, 1946
MAXIMUM PEAK FLOW	(b)14,700	May 2, 2002
MAXIMUM PEAK STAGE	(c)16.57	Feb 2, 2002
INSTANTANEOUS LOW FLOW	0.00	(a)
ANNUAL RUNOFF (CFSM)	1.12	
ANNUAL RUNOFF (INCHES)	15.18	
10 PERCENT EXCEEDS	78	
50 PERCENT EXCEEDS	12	
90 PERCENT EXCEEDS	1.1	

a Several days in September, 1946, August and September, 1955.
b From rating curve extended above 2,800 ft^3/s on basis of slope-area measurement.
c From floodmarks.
e Estimated.



03213700 TUG FORK AT WILLIAMSON, WV

LOCATION.--Lat 37°40'23", long 82°16'49", NAD27, Pike County, Ky., Hydrologic Unit 05070201, on left bank at Williamson, 100 ft upstream from bridge on County Route 52/31, 0.8 mi downstream from Pond Creek, and at mile 56.5.

DRAINAGE AREA.--936 mi^2.

PERIOD OF RECORD.--October 1967 to current year. Gage-height records collected in this vicinity since 1926 are contained in reports of National Weather Service.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 620.52 ft above NGVD of 1929. Ohio River Datum is 620.96 ft. Formerly published as 620.90 ft Ohio River Datum 1969 to 1993. Prior to Jan. 21, 1969, at datum 619.66 ft above NGVD of 1929.

REMARKS.--Records good except those for period of estimated daily discharges (ice effect), which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of Jan. 30, 1957, Mar. 12, 1963, and Mar. 7, 1967, reached stages of 43.6 ft, 44.5 ft, and 40.7 ft respectively, from readings by National Weather Service.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	1800	*36,900	*38.40	Apr 11	1300	17,400	23.87
Feb 23	0500	24,700	29.78	Jun 17	2300	15,200	21.91

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	197	699	816	1,100	1,200	4,180	893	1,190	1,150	836	656	574
2	174	516	713	1,110	1,340	3,890	936	1,380	1,050	810	676	622
3	162	415	642	1,550	1,370	3,260	990	1,340	998	956	689	541
4	154	379	600	4,080	1,690	2,710	986	1,170	1,330	949	817	1,110
5	148	400	1,010	3,050	2,780	2,380	1,010	1,100	1,240	829	847	1,210
6	143	667	3,620	2,360	2,320	2,170	1,010	1,410	1,010	762	708	886
7	135	877	2,400	1,960	1,900	1,920	3,330	1,330	1,500	1,490	744	656
8	127	762	1,600	1,750	1,570	1,720	5,400	1,340	2,160	1,630	841	558
9	124	609	1,260	1,670	1,300	1,590	6,270	1,500	1,930	1,120	1,420	498
10	129	495	1,060	1,570	1,230	1,470	6,370	1,510	1,540	1,340	1,260	452
11	174	922	1,360	1,440	1,220	1,360	14,400	1,390	1,280	1,470	912	426
12	194	1,830	2,760	1,290	1,160	1,290	7,350	1,210	1,200	1,370	1,070	407
13	167	3,290	2,300	1,160	1,090	1,250	4,300	1,040	1,030	1,190	1,340	388
14	153	1,720	2,300	1,110	1,060	1,280	3,110	916	994	985	916	375
15	159	1,080	2,520	1,040	7,370	1,190	2,480	931	3,640	829	824	395
16	359	923	2,250	937	28,800	1,130	2,100	1,860	6,790	730	1,030	403
17	812	1,180	1,800	929	17,200	1,100	1,870	1,890	6,780	669	6,550	413
18	579	1,800	1,480	867	6,260	1,080	2,090	1,680	10,200	621	4,420	372
19	375	1,510	1,260	820	4,270	1,050	2,280	1,760	6,190	572	2,230	378
20	303	1,200	1,330	806	3,430	987	2,160	1,630	4,680	539	1,470	578
21	258	1,030	1,390	786	3,100	974	1,980	1,790	3,270	521	1,150	511
22	236	1,190	1,300	745	10,100	941	1,810	2,450	2,400	503	1,030	458
23	214	1,550	1,210	700	19,300	892	1,620	2,160	1,870	644	995	591
24	197	1,420	1,150	652	8,080	855	1,430	2,950	1,540	781	809	511
25	184	1,130	1,640	e630	5,220	827	1,330	2,210	1,320	642	708	415
26	186	950	2,430	e600	4,110	817	1,420	1,630	1,180	518	641	376
27	182	902	2,170	e590	3,490	826	1,480	1,330	1,080	465	590	359
28	282	949	1,750	e570	3,580	789	1,330	1,220	994	435	554	442
29	666	946	1,490	680	---	768	1,230	1,160	986	499	542	426
30	1,100	894	1,290	894	---	825	1,150	1,160	937	1,030	517	359
31	937	---	1,150	1,070	---	909	---	1,170	---	744	589	---
TOTAL	9,210	32,235	50,051	38,516	145,540	46,430	84,115	46,807	72,269	26,479	37,545	15,690
MEAN	297	1,074	1,615	1,242	5,198	1,498	2,804	1,510	2,409	854	1,211	523
MAX	1,100	3,290	3,620	4,080	28,800	4,180	14,400	2,950	10,200	1,630	6,550	1,210
MIN	124	379	600	570	1,060	768	893	916	937	435	517	359
CFSM	0.32	1.15	1.72	1.33	5.55	1.60	3.00	1.61	2.57	0.91	1.29	0.56
IN.	0.37	1.28	1.99	1.53	5.78	1.85	3.34	1.86	2.87	1.05	1.49	0.62

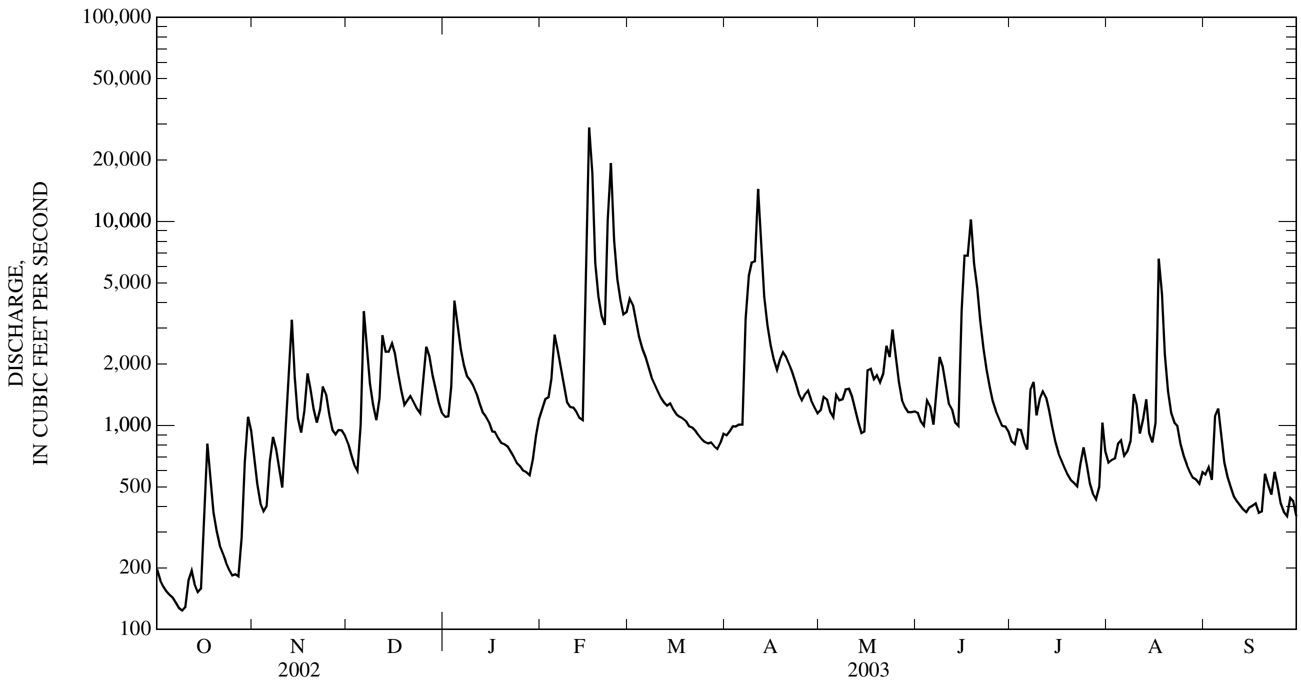
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	349	594	1,002	1,550	2,029	2,168	2,021	1,648	900	533	426	269
MAX	2,059	2,363	3,631	4,515	5,198	5,328	5,745	4,318	3,263	1,503	1,419	839
(WY)	(1990)	(1978)	(1973)	(1974)	(2003)	(1975)	(1987)	(1984)	(1979)	(2001)	(1972)	(1989)
MIN	71.7	113	197	279	396	448	506	429	156	119	105	85.7
(WY)	(1970)	(1970)	(2002)	(1981)	(2002)	(1988)	(1986)	(1976)	(1988)	(1988)	(1988)	(1999)

03213700 TUG FORK AT WILLIAMSON, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1968 - 2003	
ANNUAL TOTAL	405,531		604,887			
ANNUAL MEAN	1,111		1,657		1,119	
HIGHEST ANNUAL MEAN					1,729	1979
LOWEST ANNUAL MEAN					353	1988
HIGHEST DAILY MEAN	34,800	May 3	28,800	Feb 16	74,000	Apr 5, 1977
LOWEST DAILY MEAN	93	Sep 13	124	Oct 9	56	Sep 19, 1999
ANNUAL SEVEN-DAY MINIMUM	98	Sep 9	137	Oct 4	60	Sep 22, 1999
MAXIMUM PEAK FLOW			36,900	Feb 16	(a)94,000	Apr 5, 1977
MAXIMUM PEAK STAGE			38.40	Feb 16	(b)52.56	Apr 5, 1977
INSTANTANEOUS LOW FLOW			121	(c)	52	Sep 27, 1999
ANNUAL RUNOFF (CFSM)	1.19		1.77		1.20	
ANNUAL RUNOFF (INCHES)	16.12		24.04		16.25	
10 PERCENT EXCEEDS	2,330		3,100		2,480	
50 PERCENT EXCEEDS	558		1,100		594	
90 PERCENT EXCEEDS	141		402		139	

a From rating curve extended above 18,000 ft^3/s.
b From floodmarks.
c Oct. 8-10.
e Estimated.



03214500 TUG FORK AT KERMIT, WV

LOCATION.--Lat 37°50'14", long 82°24'32", NAD27, Mingo County, Hydrologic Unit 05070201, behind fire station, at Kermit, 0.8 mi downstream from Wolf Creek, and at mile 34.9.

DRAINAGE AREA.--1,280 mi^2.

PERIOD OF RECORD.--October 1915 to September 1917, October 1917 to December 1920 (gage heights only), January 1929 to September 1934, October 1934 to September 1985 (estimated annual maximum discharge only), February 1985 to current year.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 574.74 ft above NGVD of 1929.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect, no gage-height record), which are poor. Records published as "near Kermit" at different site and datum July 1934 to September 1985.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of unknown date prior to 1915, was about 46.7 ft; Jan. 29, 1918, was about 38.8 ft; Jan. 30, 1957, was about 45 ft; Mar. 13, 1963, was about 46 ft; Apr. 6, 1977, was 53.7 ft.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 17	0400	(a)*35,300	*46.29	Apr 11	1930	18,600	28.81
Feb 23	1300	25,900	36.76	Jun 18	0730	14,500	24.11

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	224	1,000	977	1,440	1,510	4,970	1,260	1,700	1,510	1,050	759	684
2	197	705	846	1,440	1,670	4,880	1,250	1,960	1,370	1,000	738	669
3	181	537	738	1,530	1,730	4,170	1,310	1,940	1,320	1,080	872	673
4	174	466	666	3,800	2,110	3,470	1,320	1,650	1,990	1,150	903	2,390
5	169	489	889	3,730	3,090	3,080	1,400	1,540	1,970	1,020	1,070	1,820
6	164	1,030	3,150	2,920	3,000	2,780	1,400	1,770	1,570	950	891	1,350
7	159	1,340	3,020	2,460	2,500	2,480	3,100	1,790	2,130	1,060	1,340	947
8	149	1,140	2,040	2,200	2,110	2,250	7,590	1,640	3,470	2,030	1,190	757
9	142	881	1,610	2,100	1,740	2,070	8,740	1,920	2,820	1,380	1,390	644
10	152	682	1,340	1,960	1,610	1,910	9,250	1,910	2,270	1,410	1,580	573
11	238	1,150	1,780	1,770	1,590	1,760	14,900	1,830	2,260	1,790	1,160	522
12	276	2,020	3,280	1,580	1,510	1,660	13,100	1,610	2,570	1,630	959	490
13	248	3,240	3,210	1,420	1,400	1,660	6,520	1,370	1,960	1,540	1,560	465
14	212	2,420	3,630	1,330	1,340	1,650	4,390	1,200	1,660	1,250	1,120	441
15	184	1,480	3,750	1,250	9,170	1,550	3,420	1,170	3,870	1,050	966	461
16	627	1,270	3,220	1,130	26,800	1,470	2,870	1,770	9,870	923	880	472
17	814	1,570	2,560	1,080	31,800	1,450	2,530	2,330	6,630	830	5,180	455
18	804	2,260	2,070	1,010	15,100	e1,400	2,880	2,300	13,200	752	5,370	438
19	467	2,140	1,740	958	6,600	e1,350	3,050	2,510	8,380	719	2,770	432
20	358	1,690	2,020	933	4,850	e1,280	2,920	2,240	6,160	652	1,740	484
21	312	1,410	2,060	906	4,210	e1,250	2,990	4,430	4,340	626	1,330	677
22	274	1,470	1,910	852	9,310	e1,200	2,820	3,750	3,140	612	1,150	556
23	247	1,770	1,700	781	24,200	e1,150	2,500	3,180	2,440	649	1,150	781
24	224	1,810	1,590	700	15,700	e1,100	2,160	3,190	1,970	954	953	682
25	210	1,480	2,040	664	7,860	1,070	1,960	3,030	1,660	808	812	537
26	219	1,220	2,840	e630	5,710	1,060	2,100	2,200	1,460	647	720	469
27	216	1,120	2,830	e610	4,720	1,060	2,210	1,820	1,340	564	653	453
28	548	1,090	2,360	e580	4,420	1,020	2,010	1,630	1,240	521	639	520
29	1,590	1,120	2,010	750	---	986	1,810	1,660	1,150	523	615	566
30	1,840	1,070	1,720	1,100	---	1,130	1,660	1,540	1,170	893	578	461
31	1,400	---	1,510	1,340	---	1,250	---	1,520	---	938	585	---
TOTAL	13,019	41,070	65,106	44,954	197,360	59,566	115,420	64,100	96,890	31,001	41,623	20,869
MEAN	420	1,369	2,100	1,450	7,049	1,921	3,847	2,068	3,230	1,000	1,343	696
MAX	1,840	3,240	3,750	3,800	31,800	4,970	14,900	4,430	13,200	2,030	5,370	2,390
MIN	142	466	666	580	1,340	986	1,250	1,170	1,150	521	578	432
CFSM	0.33	1.07	1.64	1.13	5.51	1.50	3.01	1.62	2.52	0.78	1.05	0.54
IN.	0.38	1.19	1.89	1.31	5.74	1.73	3.35	1.86	2.82	0.90	1.21	0.61

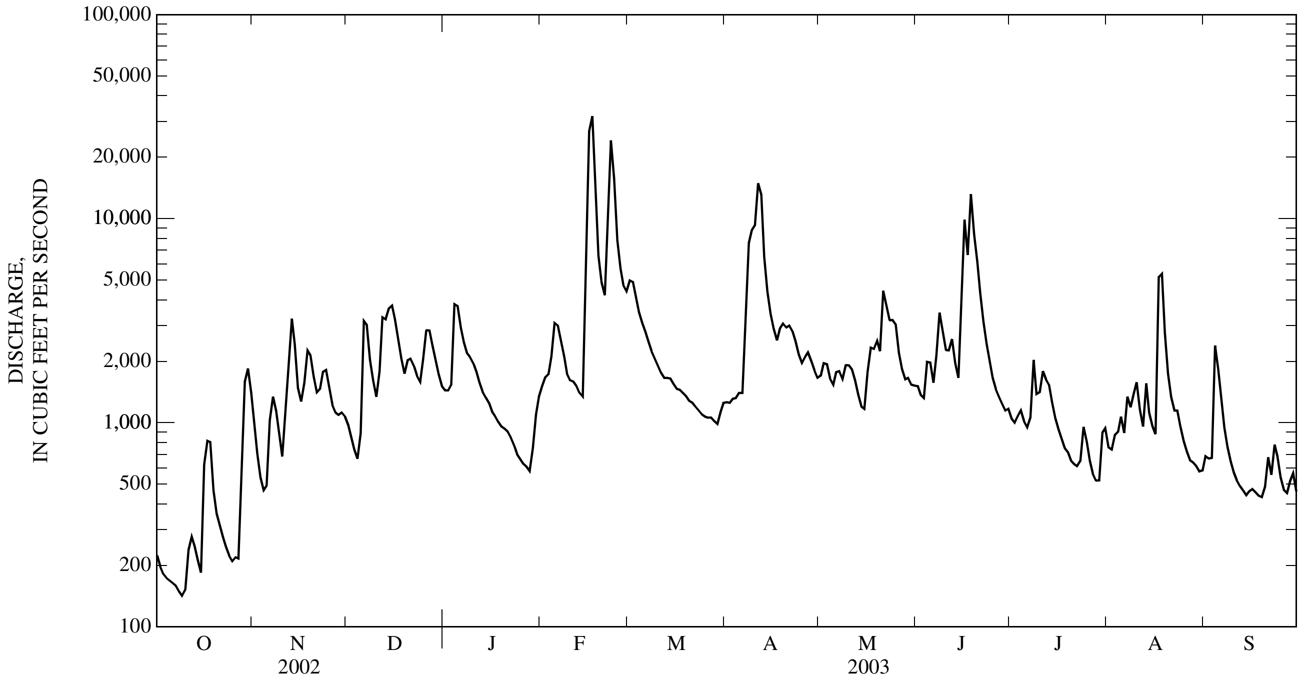
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	360	636	1,279	1,927	2,920	3,473	2,455	1,913	975	655	526	294
MAX	3,004	3,062	3,465	4,151	7,049	10,220	7,827	5,056	3,230	1,926	1,504	1,110
(WY)	(1990)	(1930)	(1992)	(1994)	(2003)	(1917)	(1987)	(1996)	(2003)	(2000)	(2000)	(1989)
MIN	21.1	44.1	119	296	512	617	629	431	114	44.5	78.7	29.4
(WY)	(1931)	(1932)	(1931)	(1931)	(2002)	(1988)	(1986)	(1930)	(1930)	(1930)	(1930)	(1930)

03214500 TUG FORK AT KERMIT, WV—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1916 - 2003	
ANNUAL TOTAL	537,653		790,978			
ANNUAL MEAN	1,473		2,167		1,447	
HIGHEST ANNUAL MEAN					2,277	1994
LOWEST ANNUAL MEAN					476	1988
HIGHEST DAILY MEAN	25,900	May 4	31,800	Feb 17	34,300	Mar 5, 1917
LOWEST DAILY MEAN	125	Sep 13	142	Oct 9	14	Oct 23, 1930
ANNUAL SEVEN-DAY MINIMUM	135	Sep 9	158	Oct 4	18	Oct 5, 1930
MAXIMUM PEAK FLOW			(a)35,300	Feb 17	(a)35,300	Feb 17, 2003
MAXIMUM PEAK STAGE			46.29	Feb 17	46.29	Feb 17, 2003
INSTANTANEOUS LOW FLOW			139	Oct 9	(b)69	Aug 19, 1988
ANNUAL RUNOFF (CFSM)	1.15		1.69		1.13	
ANNUAL RUNOFF (INCHES)	15.63		22.99		15.36	
10 PERCENT EXCEEDS	3,210		3,750		3,380	
50 PERCENT EXCEEDS	702		1,420		676	
90 PERCENT EXCEEDS	175		487		141	

a From rating curve extended above 34,000 ft^3/s.
b Instantaneous low flow prior to 1985 undetermined.
e Estimated.



As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations for current water year, including crest-stage stations, are presented in the following tables. Discharge measurements made at partial-record stations, miscellaneous sites (denoted by 15-digit site identifier), and crest-stage stations are given in separate tables.

Crest-stage partial-record stations

A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Maximum discharge and stage at partial-record stations

Station name and number	Location and drainage area	Period of record	Water year 2003 maximum: Date	Water year 2003 maximum: Gage height (ft)	Water year 2003 maximum: Discharge (ft^3/s)	Period of record maximum: Date	Period of record maximum: Gage height (ft)	Period of record maximum: Discharge (ft^3/s)
POTOMAC RIVER BASIN								
South Branch Potomac River near Moorefield, WV (01608070)	Lat 39°06'14", long 78°57'37", Hardy County, Hydrologic Unit 02070001, on left bank, 124 ft upstream from concrete highway bridge on US Route 220, 500 ft below Fort Run, 2.0 mi north of Moorefield, and at mile 55.4. Drainage area is 1,241 mi^2. Datum of gage is 765.00 ft above NGVD of 1929.	1994-2002≠ 2003*	9-19-2003	20.86	(a)	9-7-1996	25.04	(b)38,000

≠ Operated as a continuous-record gaging station.

* Gage-height records on file in District office.

a Discharge not determined.

b Estimated from rating curve extended above 26,000 ft^3/s on basis of drainage-area comparisons.

Maximum discharge and stage at partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 2003 maximum: Date	Water year 2003 maximum: Gage height (ft)	Water year 2003 maximum: Discharge (ft^3/s)	Period of record maximum: Date	Period of record maximum: Gage height (ft)	Period of record maximum: Discharge (ft^3/s)
	MONONGAHELA RIVER BASIN							
Buckhannon River at Buckhannon, WV (03052450)	Lat 39°00'19", long 80°12'34", Upshur County, Hydrologic Unit 05020001. Drainage area is 217 mi^2. Datum of gage is 1,410.00 ft above NGVD of 1929.	2000-2003*	2-23-2003	25.14	(a)	2-19-2000	26.22	(a)
Tygart Valley River at Colfax, WV (03057000)	Lat 39°26'06", long 80°07'58", Marion County, Hydrologic Unit 05020001, on right bank at highway bridge at Colfax, 300 ft upstream from Guyses Run, and at mile 6.2. Records include flow of Guyses Run. Drainage area is 1,363 mi^2. Datum of gage is 856.27 ft above NGVD of 1929, supplementary adjustment of 1944. Discharge doubtful because of unknown effects of backwater from West Fork River.	1939-1995≠ 1996-2003*	2-26-2003	13.63	(a)	3-5-1963 11-5-1985	(c)19.77 ---	--- (e)31,700
West Fork River at Walkersville, WV (03057300)	Lat 38°52'07", long 80°27'29", Lewis County, Hydrologic Unit 05020002, on left bank at downstream side of highway bridge on Secondary Route 44, in Walkersville,100 ft downstream from Right Fork, and at mile 95.8. Drainage area is 28.8 mi^2. Datum of gage is 1,070.64 ft above NGVD of 1929.	1984-1992≠ 1993-2003*	9-2-2003	16.28	(a)	8-18-2000 11-4-1985	(d)20.60 ---	--- 3,390
West Fork River at Butcherville, WV (03058500)	Lat 39°05'26", long 80°28'04", Lewis County, Hydrologic Unit 05020002, on right bank at Butcherville, 0.5 mi upstream from Freemans Creek, 3,500 ft downstream from abandoned railroad bridge, 3.0 mi north of Weston, and at mile 65.0. Drainage area is 181 mi^2. Datum of gage is 993.0 ft above NGVD of 1929.	1915-2000≠ 2001-2003*	2-23-2003	8.84	(a)	6-25-1950	16.81	18,000

≠ Operated as a continuous-record gaging station.
* Gage-height records on file in District office.
a Discharge not determined.
c Backwater from West Fork River.
d From floodmark, backwater.
e Estimated.

Maximum discharge and stage at partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 2003 maximum: Date	Water year 2003 maximum: Gage height (ft)	Water year 2003 maximum: Discharge (ft^3/s)	Period of record maximum: Date	Period of record maximum: Gage height (ft)	Period of record maximum: Discharge (ft^3/s)
OHIO RIVER MAIN STEM								
Ohio River near Marietta, OH (03150800)	Lat 39°23'21", long 81°29'03", Washington County, Hydrologic Unit 05030202, on right bank, 1.5 mi southwest of Marietta, 2.0 mi downstream from Muskingum River, and at mile 174.3 measured downstream from Pittsburgh, Pa. Drainage area is approximately 35,620 mi^2. Datum of gage is 567.12 ft, Sandy Hook datum.	1969-2003*	2-24-2003	27.13	(a)	1-21-1996	39.32	(a)
LITTLE KANAWHA RIVER BASIN								
Little Kanawha River below Burnsville Dam, WV (03151520)	Lat 38°50'41", long 80°37'45", Braxton County, Hydrologic Unit 05030203, on right bank 2,600 ft downstream from Burnsville Dam, 1.6 mi southeast of Burnsville, and at mile 126. Drainage area is 163 mi^2. Datum of gage is 750.00 ft above NGVD of 1929, (U.S. Army Corps of Engineers Bench Mark).	1976-1982≠ 1983-1986* 1987-1993≠ 1994-2003*	2-24-2003	8.14	(a)	11-4-1985 8-6-1996	(g)11.78 ---	--- 2,540
Little Kanawha River at Burnsville, WV (03151600)	Lat 38°51'54", long 80°40'35", Braxton County, Hydrologic Unit 05030203, on right bank, 70 ft upstream from Buffalo Creek, 1.0 mi northwwest of Burnsville, 1.4 mi downstream from Oil Creek, 1.8 mi downstream from Saltlick Creek, and 1.9 mi downstream from Burnsville, and at mile 122. Drainage area is 248 mi^2. Datum of gage is 738.66 ft above NGVD of 1929.	1974-1978≠ 1979-1983* 1991-2003*	9-2-2003	13.50	(a)	6-2-1974	16.32	6,890
Little Kanawha River at Glenville WV (03152000)	Lat 38°56'02", long 80°50'21", Gilmer County, Hydrologic Unit 05030203, on right bank at abandoned bridge on Conrad Court Street at Glenville, 1,400 ft upstream from Sycamore Run, and at mile 105. Drainage area is 387 mi^2. Datum of gage is 697.79 ft above NGVD of 1929.	1915-1922 1929-1983≠ 1984-2000≠ 2001-2003*	2-23-2003	28.31	(a)	11-5-1985	(f)36.46	26,900

≠ Operated as a continuous-record gaging station.
* Gage-height records on file in District office.
a Discharge not determined.
f From floodmark.
g Backwater.

Maximum discharge and stage at partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 2003 maximum Date	Gage height (ft)	Discharge (ft^3/s)	Period of record maximum Date	Gage height (ft)	Discharge (ft^3/s)
			LITTLE KANAWHA RIVER BASIN--Continued					
Little Kanawha River at Grantsville, WV (03153500)	Lat 38°55'19", long 81°05'52", Calhoun County, Hydrologic Unit 05030203, on left bank 1,000 ft downstream from bridge on State Highway 16 at Grantsville, 1,200 ft downstream from Philip Run, and at mile 79.7. Drainage area is 913 mi^2. Datum of gage is 652.83 ft above NGVD of 1929, adjustment of 1912.	1929-1978≠ 1979-2003*	2-23-2003	38.11	(a)	3-7-1967	(f)43.9	35,100
West Fork Little Kanawha River at Rocksdale, WV (03154000)	Lat 38°50'39", long 81°13'22", Calhoun County, Hydrologic Unit 05030203, on right bank on State Route 11, 850 ft downstream from Henry Fork at Rocksdale, 9.0 mi southwest of Grantsville, and at mile 14.5. Drainage area is 205 mi^2. Datum of gage is 657.85 ft above NGVD of 1929, adjustment of 1912.	1929-1931≠ 1938-1975≠ 1976-2003*	5-10-2003	25.60	(a)	3-2-1997 4-16-1939	(f)31.55 ---	--- 20,200
			KANAWHA RIVER BASIN					
Gauley River at Camden on Gauley, WV (03187000)	Lat 38°21'57", long 80°36'04", Webster County, Hydrologic Unit 05050005, on right bank in town of Camden on Gauley, 0.2 mi downstream from Coon Creek, and 0.9 mi upstream from Strouds Creek, and at mile 69.6. Drainage area is 236 mi^2. Datum of gage is 2,003.28 ft, above NGVD of 1929, adjustment of 1912.	1909-1916≠ 1930-1975≠ 1976-2003*	5-10-2003	15.40	(a)	7-4-1932	27.38	42,500
Elk River at Sutton, WV (03195500)	Lat 38°39'47", 80°42'35", Braxton County, Hydrologic Unit 05050007, on left bank, 150 ft upstream from highway bridge at Sutton, 0.5 mi upstream from Granny Creek, 0.9 mi downstream from Sutton Dam, 2.5 mi downstream from Wolf Creek, and at mile 102.1. Drainage area is 542 mi^2. Datum of gage is 800.00 ft above NGVD of 1929.	1939-1992≠ 1993-2003*	2-23-2003	22.56	(a)	1-29-1957	39.30	34,200

≠ Operated as a continuous-record gaging station.
* Gage-height records on file in District office.
a Discharge not determined.
f From floodmark.

Maximum discharge and stage at partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 2003 maximum: Date	Water year 2003 maximum: Gage height (ft)	Water year 2003 maximum: Discharge (ft^3/s)	Period of record maximum: Date	Period of record maximum: Gage height (ft)	Period of record maximum: Discharge (ft^3/s)
KANAWHA RIVER BASIN--Continued								
Elk River near Frametown, WV (03196600)	Lat 38°35'32", long 80°53'05", Braxton County, Hydrologic Unit 05050007, on right bank opposite mouth of Birch River, at village of Glendon, 2.2 mi upstream from Strange Creek, 3.2 mi southwest of Frametown, and at mile 82.6. Records include flow of Birch River. Drainage area is 751 mi^2, includes that of Birch River. Datum of gage is 775.51 ft above NGVD of 1929.	1959-1981≠ 1982-2003*	5-10-2003	13.82	(a)	7-31-1996	20.39	30,300
Elk River at Clay, WV (03196800)	Lat 38°27'38", long 81°05'16", Clay County, Hydrologic Unit 05050007, on upstream side of right bank of highway bridge in the town of Clay, 0.9 mi downstream from Buffalo Creek, and 2.1 mi downstream from Lower Two Run Creek, and at mile 52.4. Drainage area is 992 mi^2. Datum of gage is 677.46 ft above NGVD of 1929.	1959-1978≠ 1979-1998* 1999-2002(h) 2003*	2-17-2003	17.38	(a)	3-15-1967	22.80	48,000
OHIO RIVER MAIN STEM								
Ohio River at Point Pleasant, WV (03201500)	Lat 38°50'25", long 82°08'30", Mason County, Hydrologic Unit 05030202, on left bank at Point Pleasant, 1,200 ft upstream from Kanawha River, and at mile 265.6, measured downstream from Pittsburgh, Pa. Drainage area approximately 52,740 mi^2, includes that of Kanawha River. Datum of gage is 514.10 ft, Sandy Hook datum.	1940-1977≠ 1978-2003*	2-24-2003	41.33	(a)	4-16-1948	55.00	(a)
GUYANDOTTE RIVER BASIN								
Guyandotte River below R. D. Bailey Dam, WV (03202915)	Lat 37°35'53", long 81°49'46", Mingo County, Hydrologic Unit 05070101, on right bank, 500 ft upstream from Little Huff Creek, 2,500 ft downstream from R.D. Bailey Dam and 0.5 mi northeast of Justice, and at mile 111.6. Drainage area is 535 mi^2. Datum of gage is 880.00 ft above NGVD of 1929.	1979-1982≠ 1983-1986* 1987-1991≠ 1992-2003*	2-16-2003	10.22	(a)	6-22-1979	13.90	16,800

≠ Operated as a continuous-record gaging station.
* Gage-height records on file in District office.
a Discharge not determined.
h Maximum stages not previously published.

Maximum discharge and stage at partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 2003 maximum: Date	Water year 2003 maximum: Gage height (ft)	Water year 2003 maximum: Discharge (ft^3/s)	Period of record maximum: Date	Period of record maximum: Gage height (ft)	Period of record maximum: Discharge (ft^3/s)
GUYANDOTTE RIVER BASIN--Continued								
Guyandotte River at Man, WV (03203000)	Lat 37°44'25", long 81°52'37", Logan County, Hydrologic Unit 05070101, on right bank at downstream side of highway bridge at Man, 500 feet upstream from Buffalo Creek, and 0.7 mile downstream from Huff Creek, and at mile 93.4. Drainage area is 758 mi^2. Datum of gage is 710.88 ft above NGVD of 1929, adjustment of 1912.	1928-1962≠ 1963-2003*	2-16-2003	15.43	(a)	3-12-1963	24.78	49,000
Guyandotte River at Branchland, WV (03204000)	Lat 38°13'15", long 82°12'10", Lincoln County, Hydrologic Unit 05070102, on right bank at upstream side of highway bridge at Branchland, opposite mouth of Fourmile Creek, and at mile 35.3. Records include flow of Fourmile Creek. Drainage area is 1,224 mi^2. Datum of gage is 547.91 ft above NGVD of 1929. Discharge is doubtful because of unknown effects of backwater from Ohio River.	1915-1917≠ 1917-1922* 1929-1995≠ 1996-2003*	2-17-2003	36.72	(a)	3-13-1963	43.83	44,500
OHIO RIVER MAIN STEM								
Ohio River at Huntington, WV (03206000)	Lat 38°24'48", long 82°30'02", Lawrence County, Ohio, Hydrologic Unit 05090101, on right bank at lock 28 at Sybene, Ohio, 0.1 mi upstream from Fourpole Creek, 3.0 mi downstream from Symmes Creek, and at mile 311.5, measured downstream from Pittsburgh, Pa. Drainage area approximately 55,850 mi^2. Datum of gage is 490.26 ft, Sandy Hook datum.	1935-1986≠ 1987-2003*	2-25-2003	48.77	(a)	1-27-1937 1-28-1937	69.45 ---	--- 654,000

≠ Operated as a continuous-record gaging station.
* Gage-height records on file in District office.
a Discharge not determined.

Maximum discharge and stage at partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 2003 maximum Date	Gage height (ft)	Discharge (ft^3/s)	Period of record maximum Date	Gage height (ft)	Discharge (ft^3/s)
TWELVEPOLE CREEK BASIN								
East Fork Twelvepole Creek below East Lynn Dam, WV (03206790)	Lat 38°08'52", long 82°23'00", Wayne County, Hydrologic Unit 05090102, on left bank, 800 ft downstream from Laurel Creek, 1,700 ft downstream from East Lynn Dam, 1.4 mi south of the town of East Lynn, 2.3 mi upstream from Camp Creek, 6.0 mi southeast of the town of Wayne, and at mile 41.7. Drainage area is 138 mi^2. Datum of gage is 610.00 ft above NGVD of 1929.	1962-1982≠ 1983-1986* 1991-2003*	6-17-2003	12.22	(a)	3-12-1968	(f)31.50	4,960
Twelvepole Creek below Wayne, WV (03207020)	Lat 38°14'56", long 82°26'04", Wayne County, Hydrologic Unit 05090102, on left bank just below highway bridge on Secondary State Route 52/43, 1.9 mi northeast of Wayne, and at mile 26.5. Drainage area is 300 mi^2. Datum of gage is 560.00 ft above NGVD of 1929.	1967-1982≠ 1983* 1994-2003*	2-17-2003	26.32	(a)	2-28-1962	29.46	15,900

≠ Operated as a continuous-record gaging station.
* Gage-height records on file in District office.
a Discharge not determined.
f From floodmark.

Maximum discharge and stage at crest-stage stations

Station name and number	Location and drainage area	Period of record	Water Year 2003 maximum Date	Gage height (ft)	Discharge (ft^3/s)
	POTOMAC RIVER BASIN				
Heavener Run near Brandywine, WV (01607510)	Lat 38°37'59", long 79°13'49", Pendleton County, Hydrologic Unit 02070001, on right upstream end of 6 ft corrugated culvert on US Route 33, 1.1 mi northeast of Brandywine. Drainage area 1.04 mi^2. Elevation of gage is approximately 1,550 ft above NGVD of 1929, from topographic map.	1999-2003	Unknown	<7.02	<18
			2-19-2000	7.30	25
			5-23-2001	7.61	34
			4-22-2002	8.68	72
			2-23-2003	9.12	90
Little Cacapon River at Frenchburg, WV (01609650)	Lat 39°18'55", long 78°39'27", Hampshire County, Hydrologic Unit 02070003, on left upstream side of bridge, on County Route 50/9, 5 mi east of Romney. Drainage area 28.9 mi^2.	1999-2003	Unknown	<7.14	<741
			8-6-2000	8.73	1,440
			3-22-2001	7.35	814
			5-18-2002	7.14	741
			9-18-2003	11.77	3,400
	MONONGAHELA RIVER BASIN				
Unnamed Run at Gilman, WV (03050650)	Lat 38°58'35", long 79°50'16", Randolph County, Hydrologic Unit 05020001, on left upstream end of culvert on US Highway 219, 0.3 mi northeast of Gilman and 3.7 mi north of Elkins. Drainage area 0.38 mi^2.	1999-2003	1-15-1999	4.57	26
			2-19-2000	6.24	88
			5-20-2001	5.38	52
			3-20-2002	5.76	68
			9-4-2003	5.51	57
Mud Lick Run near Buckhannon, WV (03052340)	Lat 39°00'17", long 80°15'23", Upshur County, Hydrologic Unit 05020001, on left upstream wingwall of culvert on US Highway 33 and 119, 1.5 mi west of Buckhannon. Drainage area 2.33 mi^2. Datum of gage is 1,407.68 ft above NGVD of 1929.	1999-2003	2-23-2003	7.32	---
Shavers Fork at Cheat Bridge, WV (03067500)	Lat 38°36'40", long 79°52'30", Randolph County, Hydrologic Unit 05020004, on upstream side of old steel truss bridge at Cheat Bridge, 35 mi south of Elkins, cross Shavers Fork on new bridge, proceed 1/4 mi to side road to old bridge. Drainage area is 57.6 mi^2. Datum of gage is 3,542.93 ft above NGVD of 1929.	1923-1926	*1-24-1999	7.12	*2,840
		1992-2003	8-18-2000	*9.67	*5,080
			7-29-2001	*7.86	*3,430
			4-28-2002	*9.86	*5,270
			9-19-2003	8.90	4,360
Buffalo Creek near Rowlesburg, WV (03069880)	Lat 39°17'19", long 79°42'16", Preston County, Hydrologic Unit 05020004, on left bank, 150 ft upstream from secondary highway bridge, 4.5 mi southwest of Rowlesburg, and at mile 2.8. Drainage area is 12.2 mi^2. Elevation of gage is approximately 1,640 ft above NGVD of 1929, from topographic map.	1967-1977	7-8-2003	5.03	1,370
		1994-2003			

* Revised.

Maximum discharge and stage at crest-stage stations--Continued

Station name and number	Location and drainage area	Period of record	Water Year 2003 maximum Date	Gage height (ft)	Discharge (ft^3/s)
MIDDLE ISLAND CREEK BASIN					
Buffalo Run near Little, WV (03114650)	Lat 39°29’13", long 81°00’27", Tyler County, Hydrologic Unit 05030201, on left bank, 1.0 mi northwest of Little, and at mile 1.4. Drainage area is 4.19 mi^2. Elevation of gage is approximately 660 ft above NGVD of 1929, from topographic map.	1969-1977 1994-2003	8-10-2003	10.13	1,130
LITTLE KANAWHA RIVER BASIN					
Buck Run near Leopold, WV (03152200)	Lat 39°07’26", long 80°41’26", Doddridge County, Hydrologic Unit 05030203, on right bank 12 ft upstream from culvert on Secondary State Route 66, 0.3 mi upstream from mouth, and 2.6 mi east of Leopold. Drainage area is 2.91 mi^2. Elevation of gage is approximately 840 ft above NGVD of 1929, from topographic map.	1970-1977 1994-2003	7-10-2003	7.67	---
Goose Creek near Petroleum, WV (03155525)	Lat 39°12’47", long 81°13’52", Ritchie County, Hydrologic Unit 05030203, on right upstream side of bridge, on County Route 18, 2.7 mi south of US Route 50, 2 mi south of Nutter Farm, 2.5 mi northeast of Petroleum. Drainage area 25.3 mi^2.	1999-2003	1-24-1999 2-19-2000 5-22-2001 1-24-2002 2-23-2003	22.54 25.02 22.53 22.38 24.65	1,400 2,630 1,400 1,350 2,400
KANAWHA RIVER BASIN					
Payne Branch near Oakvale, WV (03177100)	Lat 37°21’28", long 80°58’40", Mercer County, Hydrologic Unit 05050002, on left upstream side of bridge, on County Route 219/3, 1.8 mi northwest of Oakvale and 4 mi east of Princeton. Drainage area 8.64 mi^2.	2000-2003	Unknown 5-18-2001 5-2-2002 2-22-2003	<3.37 6.51 5.93 5.29	<246 1,750 1,440 1,130
Big Creek near Bellepoint, WV (03184200)	Lat 37°40’28", long 80°48’52", Summers County, Hydrologic Unit 05050003, on left upstream wingwall of bridge, on Secondary Route 10, 4 mi northeast of Bellepoint. Drainage area 8.27 mi^2. Datum of gage is 1,407.68 ft above NGVD of 1929.	1969-1977 1999-2003	3-18-1999 7-15-2000 5-21-2001 5-2-2002 2-22-2003	6.00 5.68 6.02 6.60 7.60	535 414 543 817 1,440
Anglins Creek near Nallen, WV (03190100)	Lat 38°08’28", long 80°50’13", Nicholas County, Hydrologic Unit 05050005, on left upstream side of bridge, on County Route 24/7, 0.7 mi southeast of Runa, 2 mi southeast of Pool, and 3 mi northeast of Nallen. Drainage area 23.5 mi^2.	1999-2003	3-21-1999 2-19-2000 7-29-2001 5-8-2002 4-11-2003	8.51 10.53 16.38 8.21 13.11	1,230 2,060 7,290 1,120 3,090

Maximum discharge and stage at crest-stage stations--Continued

Station name and number	Location and drainage area	Period of record	Water Year 2003 maximum Date	Gage height (ft)	Discharge (ft^3/s)
	KANAWHA RIVER BASIN--Continued				
Gilmer Run near Marlinton, WV (03193830)	Lat 38°19'12", long 80°05'52", Pocahontas County, Hydrologic Unit 05050007, on right bank 8 ft above entrance to culvert under Forest Service Road 151, 6.8 mi north of Marlinton, 200 ft off US Route 219. Drainage area 1.80 mi^2. Elevation of gage is approximately 3,120 ft above NGVD of 1929, from topographic map.	1968-1977 1999-2003	10-8-1976	9.05	*525
			2-24-1977	5.11	*97.2
			3-13-1977	6.59	*201
			4-4-1977	5.52	*133
			4-20-1977	5.55	*135
			1-24-1999	6.52	165
			9-26-2000	7.16	243
			8-16-2001	6.84	205
			4-28-2002	7.84	298
			7-28-2002	7.84	298
			5-10-2003	10.34	1,110
Granny Creek at Sutton, WV (03195600)	Lat 38°40'36", long 80°42'47", Braxton County, Hydrologic Unit 05050007, on right bank, 10 ft upstream from culvert on US Highway 19, 0.7 mi upstream from mouth, and 1.0 mi northwest of Sutton. Drainage area is 6.98 mi^2. Elevation of gage is approximately 840 ft above NGVD of 1929, from topographic map.	1967-1977 1994-2003	5-10-2003	10.98	1,070
Ashleycamp Run near Lefthand, WV (03197150)	Lat 38°37'34", long 81°14'02", Roane County, Hydrologic Unit 05050007, on right upstream wingwall of culvert on State Route 36, 1.25 mi east of Lefthand. Drainage area 2.01 mi^2. Elevation of gage is approximately 780 ft above NGVD of 1929, from topographic map.	1999-2003	9-4-2003	9.13	---
Rock Creek near Danville, WV (03199300)	Lat 38°06'00", long 81°49'48", Boone County, Hydrologic Unit 05050009, on right bank 20 ft upstream from bridge on US Route 119, 1.5 mi north of Danville. Drainage area 12.2 mi^2. Datum of gage is 675.46 ft above NGVD of 1929.	1979-1984 1999-2003	6-6-1980	6.35	*386
			8-29-1980	6.05	*348
			6-4-1981	8.76	*747
			4-18-1981	6.41	*393
			2-9-1982	6.38	*389
			5-30-1982	8.48	*694
			6-5-1982	9.41	*924
			6-10-1982	6.13	*358
			7-3-1982	6.08	*352
			4-24-1983	6.04	*347
			4-22-1984	5.61	*293
			1-24-1999	5.41	206
			7-13-2000	7.25	505
			7-29-2001	10.01	1,240
			4-1-2002	6.66	401
			2-22-2003	7.71	535
Poplar Fork at Teays, WV (03201410)	Lat 38°27'02", long 81°55'54", Putnam County, Hydrologic Unit 05050008, on right wingwall at box culvert on Secondary Route 46, 0.6 mi east of Teays Valley. Drainage area is 8.47 mi^2. Datum of gage is 643.00 ft above NGVD of 1929.	1967-1978 1992-2003	6-17-2003	8.58	619

* Revised.

Maximum discharge and stage at crest-stage stations--Continued

Station name and number	Location and drainage area	Period of record	Water Year 2003 maximum Date	Gage height (ft)	Dis-charge (ft^3/s)
GUYANDOTTE RIVER BASIN					
Marsh Fork at Maben, WV (03202245)	Lat 37°38'19", long 81°23'38", Wyoming County, Hydrologic Unit 05070101, on left upstream wingwall of culvert, on State Route 97, 0.1 mi south of Maben, near Twin Falls State Park. Drainage area 4.85 mi^2. Elevation of gage is approximately 1,590 ft above NGVD of 1929, from topographic map.	1978-1980 1999-2003	2-22-2003	8.10	---
Brier Creek at Fanrock, WV (03202480)	Lat 37°33'48", long 81°39'09", Wyoming County, Hydrologic Unit 05070101, on right bank on Secondary State Route 14, 0.3 mi south of Fanrock, and 0.3 mi upstream from mouth. Drainage area is 7.34 mi^2. Elevation of gage is approximately 1,220 ft above NGVD of 1929, from topographic map.	1969-1977 1994-2003	3-3-1997	4.64	*197
			6-12-1998	4.92	*241
			1-22-1999	3.40	*62.9
			7-13-2000	3.44	*65.7
			5-23-2001	5.34	*316
			3-18-2002	3.69	*85.4
			2-22-2003	8.04	1,010
OHIO RIVER BASIN					
Fourpole Creek near Huntington, WV (03206450)	Lat 38°21'45", long 82°23'37", Cabell County, Hydrologic Unit 05090101, on left upstream bridge abutment on County Route 48/1, 5 mi southeast of Huntington. Drainage area 4.02 mi^2.	1999-2003	Unknown	<9.20	<360
			2-19-2000	12.03	1,530
			1-20-2001	9.65	445
			3-22-2002	11.18	995
			9-4-2003	9.38	393

*Revised.

Discharge measurements in the following table were made at partial-record stations and miscellaneous sites throughout the State.

Discharge measurements made at partial-record stations and miscellaneous sites

Station name and number	Location	Drainage area (mi^2)	Measured Previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
	POTOMAC RIVER BASIN				
Heavener Run near Brandywine, WV (01607510)	Lat 38°37’59", long 79°13’49", Pendleton County, Hydrologic Unit 02070001, on right upstream end of 6 ft corrugated culvert on US Route 33, 1.1 mi northeast of Brandywine. Elevation of gage is approximately 1,550 ft above NGVD of 1929, from topographic map.	1.04	2003	2-24-2003 9-18-2003	3.18 (d)82
South Branch Potomac River near Moorefield, WV (01608070)	Lat 39°06’14", long 78°57’37", Hardy County, Hydrologic Unit 02070001, on left bank, 124 ft upstream from concrete highway bridge on US Route 220, 500 ft below Fort Run, 2.0 mi north of Moorefield, and at mile 55.4. Datum of gage is 765.00 ft above NGVD of 1929.	1,241	1994-2002≠ 2003	10-23-2003	469
Little Cacapon River at Frenchburg, WV (01609650)	Lat 39°18’55", long 78°39’27", Hampshire County, Hydrologic Unit 02070003, on left upstream side of bridge, on County Route 50/9, 5 mi east of Romney.	28.9	2003	2-22-2003 9-18-2003	550 (d)3,400
	MONONGAHELA RIVER BASIN				
Buckhannon River at Buckhannon, WV (03052450)	Lat 39°00’19", long 80°12’34", Upshur County, Hydrologic Unit 05020001. Datum of gage is 1,410.00 ft above NGVD of 1929.	217	2000-2003	4-8-2003 9-3-2003	1,050 3,670
Tygart Valley River at Colfax, WV (03057000)	Lat 39°26’06", long 80°07’58", Marion County, Hydrologic Unit 05020001, on right bank at highway bridge at Colfax, 300 ft upstream from Guyses Run, and at mile 6.2. Records include flow of Guyses Run. Datum of gage is 856.27 ft above NGVD of 1929, supplementary adjustment of 1944.	1,363	1939-1995≠ 1996 1998-2001 2003	3-13-2003	8,860
West Fork River at Walkersville, WV (03057300)	Lat 38°52’07", long 80°27’29", Lewis County, Hydrologic Unit 05020002, on left bank at downstream side of highway bridge on Secondary Route 44, in Walkersville, 100 ft downstream from Right Fork, and at mile 95.8. Datum of gage is 1070.64 ft above NGVD of 1929.	28.8	1984-1992≠ 1993-1996 1998 2000-2001 2003	5-21-2003	88.7
West Fork River at Butcherville, WV (03058500)	Lat 39°05’26", long 80°28’04", Lewis County, Hydrologic Unit 05020002, on right bank at Butcherville, 0.5 mi upstream from Freemans Creek, 3,500 ft downstream from abandoned railroad bridge, 3.0 mi north of Weston, and at mile 65.0. Datum of gage is 993.0 ft above NGVD of 1929.	181	1915-2000≠ 2001-2003	3-7-2003	952

≠ Operated as a continuous-record gaging station.
d Indirect measurement.

Discharge measurements in the following table were made at partial-record stations and miscellaneous sites throughout the State.

Discharge measurements made at partial-record stations and miscellaneous sites--Continued

Station name and number	Location	Drainage area (mi^2)	Measured Previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
	MONONGAHELA RIVER BASIN--Continued				
Shavers Fork at Cheat Bridge, WV (03067500)	Lat 38°36'40", long 79°52'30", Randolph County, Hydrologic Unit 05020004, on upstream side of old steel truss bridge at Cheat Bridge, 35 mi south of Elkins, upstream from US Route 250 highway bridge. Datum of gage is 3,542.93 ft above NGVD of 1929.	57.6	1923-1926 1966 1972 1979-1980 1993-1996 2000-2003	(a)	(a)
	LITTLE KANAWHA RIVER BASIN				
Little Kanawha River at Burnsville, WV (03151600)	Lat 38°51'54", long 80°40'35", Braxton County, Hydrologic Unit 05030203, on right bank, 70 ft upstream from Buffalo Creek, 1.0 mi northwest of Burnsville, 1.4 mi downstream from Oil Creek, 1.8 mi downstream from Saltlick Creek, and 1.9 mi downstream from Burnsville, and at mile 122. Datum of gage is 738.66 ft above NGVD of 1929.	248	1974-1978≠ 1979-1983 1991-1998 2000 2003	5-12-2003 8-20-2003	2,090 1,590
West Fork Little Kanawha River at Rocksdale, WV (03154000)	Lat 38°50'39", long 81°13'22", Calhoun County, Hydrologic Unit 05030203, on right bank on State Route 11, 850 ft downstream from Henry Fork at Rocksdale, 9.0 mi southwest of Grantsville, and at mile 14.5. Datum of gage is 657.85 ft above NGVD of 1929, adjustment of 1912.	205	1929-1931 1938-1975≠ 1976-1998 2000 2003	5-13-2003 7-11-2003	467 577
Goose Creek near Petroleum, WV (03155525)	Lat 39°12'47", long 81°13'52", Ritchie County, Hydrologic Unit 05030203, on right upstream side of bridge, on County Route 18, 2.7 mi south of US 50, 2 mi south of Nutter Farm, and 2.5 mi northeast of Petroleum.	25.3	2001 2003	7-10-2003	309
	KANAWHA RIVER BASIN				
Lick Creek near Sandstone, WV (374643080533401)	Lat 37°46'43", long 80°53'34", Summers County, Hydrologic Unit 05050004, on right bank, 50 ft downstream from State Route 20 bridge over Lick Creek, about .5 mi north on Rt 20 from Sandstone, and at mile 0.2.	39.1	1988-2003	4-15-2003	63.3
Meadow Creek at Meadow Creek, WV (374847080552401)	Lat 37°48'47", long 80°55'24", Summers County, Hydrologic Unit 05050004, on the left bank, 10 ft downstream side of State Route 7/1 bridge about 0.3 mi from Meadow Creek, and at mile 0.3.	28.8	1988-2003	4-15-2003	70.6
Piney Creek near McCreery, WV (375041081054201)	Lat 37°50'41", long 81°05'42", Raleigh County, Hydrologic Unit 05050004, about 1,500 ft upstream from State Route 41 highway bridge, and at mile 0.5.	134	1990-2003	4-14-2003	452

≠ Operated as a continuous-record gaging station.
a Measurements incorporated in rating study for station 03067510, Shavers Fork near Cheat Bridge, included in this report.

Discharge measurements in the following table were made at partial-record stations and miscellaneous sites throughout the State.

Discharge measurements made at partial-record stations and miscellaneous sites--Continued

Station name and number	Location	Drainage area (mi^2)	Measured Previously (water years)	Measurements: Date	Measurements: Discharge (ft^3/s)
	KANAWHA RIVER BASIN--Continued				
Laurel Creek at Quinnimont, WV (375105081024801)	Lat 37°51'05", long 81°02'48", Fayette County, Hydrologic Unit 05050004, on the left bank downstream side of bridge, on a railroad bridge trestle, 1 mi east of Prince along State Route 41, and at mile 0.1.	27.6	1988-2003	4-14-2003	96.6
Dunloup Creek near Thurmond, WV (375635081051601)	Lat 37°56'35", long 81°05'16", Fayette County, Hydrologic Unit 05050004, on State Route 25 bridge southwest of Thurmond, and at mile 1.1.	45.8	1988-2003	4-14-2003	203
Arbuckle Creek at Minden, WV (375834081063201)	Lat 37°58'34", long 81°06'32", Fayette County, Hydrologic Unit 05050004, on upstream side of box culvert, on County Route 17/11, north of Minden.	---	2003	4-14-2003 5-21-2003 5-21-2003	19.5 244 176
Wolf Creek near Fayetteville, WV (380351081045401)	Lat 38°03'51", long 81°04'54", Fayette County, Hydrologic Unit 05050004, on the left bank, 40 ft below State Route 82 bridge, east of Fayette Station, and at mile 0.1	17.4	1988-2003	4-15-2003 5-21-2003 5-21-2003	31.9 513 558
Marr Branch near Fayetteville, WV (380427081053901)	Lat 38°04'27", long 81°05'39", Fayette County, Hydrologic Unit 05050004, on left bank about 1.1 mi from intersection of US Route 19 and State Route 82, and at mile 0.5.	3.13	1988-2003	4-15-2003	4.84
Payne Branch near Oakvale, WV (03177100)	Lat 37°21'28", long 80°58'40", Mercer County, Hydrologic Unit 05050002, on left upstream side of bridge, on County Route 219/3, 1.8 mi northwest of Oakvale and 4 mi east of Princeton.	8.64	2001 2003	2-22-2003	9.58
Big Creek near Bellepoint, WV (03184200)	Lat 37°40'28", long 80°48'52", Summers County, Hydrologic Unit 05050003, on left upstream wingwall of bridge, on Secondary Route 10 4 mi northeast of Bellepoint. Datum of gage is 1,407.68 ft above NGVD of 1929.	8.27	1969-1977 2001 2003	2-22-2003 2-22-2003	978 466
Gauley River at Camden on Gauley, WV (03187000)	Lat 38°21'57", long 80°36'04", Webster County, Hydrologic Unit 05050005, on right bank in town of Camden on Gauley, 0.2 mi downstream from Coon Creek, and 0.9 mi upstream from Strouds Creek, and at mile 69.6. Datum of gage is 2003.28 ft above NGVD of 1929, adjustment of 1912.	236	1909-1916 1930-1975≠ 1979 1981 1983-2000 2003	10-31-2002	1,030
Anglins Creek near Nallen, WV (03190100)	Lat 38°08'28", long 80°50'13", Nicholas County, Hydrologic Unit 05050005, on left upstream side of bridge, on County Route 24/7, 0.7 mi southeast of Runa, 2 mi southeast of Pool, and 3 mi northeast of Nallen.	23.5	2001-2003	6-16-2003 6-16-2003	327 338

≠ Operated as a continuous-record gaging station.

Discharge measurements in the following table were made at partial-record stations and miscellaneous sites throughout the State.

Discharge measurements made at partial-record stations and miscellaneous sites--Continued

Station name and number	Location	Drainage area (mi²)	Measured Previously (water years)	Measurements Date	Measurements Discharge (ft³/s)
	KANAWHA RIVER BASIN--Continued				
Elk River at Clay, WV (03196800)	Lat 38°27’38", long 81°05’16", Clay County, Hydrologic Unit 05050007, on upstream side of right bank of highway bridge in the town of Clay, 0.9 mi downstream from Buffalo Creek, and 2.1 mi downstream from Lower Two Run Creek, and at mile 52.4. Datum of gage is 677.46 ft above NGVD of 1929.	992	1959-1978≠ 1979-1997 2002-2003	2-19-2003 6-16-2003	7,860 4,370
Ashleycamp Run near Lefthand, WV (03197150)	Lat 38°37’34", long 81°14’02", Roane County, Hydrologic Unit 05050007, on right upstream wingwall of culvert on State Route 36, 1.25 mi east of Lefthand. Elevation of gage is approximately 780 ft above NGVD of 1929, from topographic map.	2.01	1998 2003	6-16-2003	33.4
Rock Creek near Danville, WV (03199300)	Lat 38°06’00", long 81°49’48", Boone County, Hydrologic Unit 05050009, on right bank 20 ft upstream from bridge on US Route 119, 1.5 mi north of Danville. Datum of gage is 675.46 ft above NGVD of 1929.	12.2	1979-1984 2001 2003	2-24-2003	(d)535
	GUYANDOTTE RIVER BASIN				
Brier Creek at Fanrock, WV (03202480)	Lat 37°33’48", long 81°39’09", Wyoming County, Hydrologic Unit 05070101, on right bank on Secondary Route 14, 0.3 mi south of Fanrock, and 0.3 mi upstream from mouth. Elevation of gage is approximately 1,220 ft above NGVD of 1929, from topographic map.	7.34	1969-1977 1994-1995 2003	2-22-2003 6-18-2003	(d)1,010 58.1
Guyandotte River at Man, WV (03203000)	Lat 37°44’25", long 81°52’37", Logan County, Hydrologic Unit 05070101, on right bank at downstream side of highway bridge at Man, 500 ft upstream from Buffalo Creek, and 0.7 mi downstream form Huff Creek, and at mile 93.4. Datum of gage is 710.88 ft above NGVD of 1929, adjustment of 1912.	758	1928-1962≠ 1963-1993 1995-2000 2003	3-13-2003	2,810
Guyandotte River at Branchland, WV (03204000)	Lat 38°13’15", long 82°12’10", Lincoln County, Hydrologic Unit 05070102, on right bank at upstream side of highway bridge at Branchland, opposite mouth of Fourmile Creek, and at mile 35.3. Records include flow of Fourmile Creek. Datum of gage is 547.91 ft above NGVD of 1929.	1,224	1915-1917≠ 1917-1922 1929-1995≠ 1997-1999 2003	2-6-2003	3,610

≠ Operated as a continuous-record gaging station.
d Indirect measurement.

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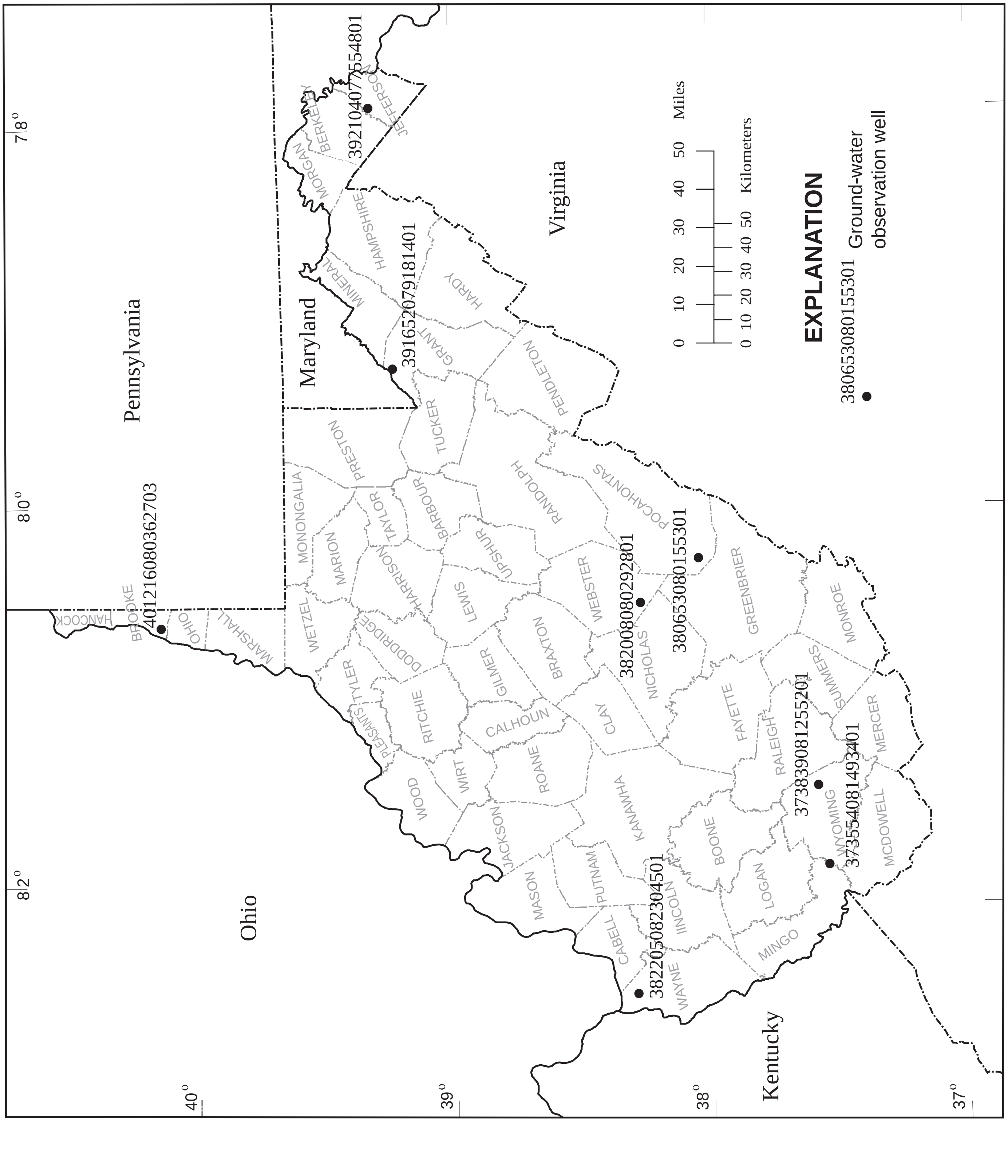


Figure 5. Map of West Virginia showing location of ground-water observation wells.

GROUND-WATER-QUALITY RECORDS

Remark Codes

The following remark codes may appear with the water-quality data in this section:

PRINTED OUTPUT	REMARK
E	Value is estimated.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
M	Presence of material verified, but not quantified.
N	Presumptive evidence of presence of material.
U	Material specifically analyzed for, but not detected.
A	Value is an average.
V	Analyte was detected in both the environmental sample and the associated blanks.
S	Most probable value.

Dissolved Trace-Element Concentrations

NOTE.--Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter (µg/L) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Data above the µg/L level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols at some stations in water year 1994.

Water-Quality Control Data

NOTE.--See information related to quality-control data on pages 23-25.

GROUND WATER LEVELS

BROOKE COUNTY

401216080362703. Local number, Brk-0066.

LOCATION.--Lat 40°12'16", long 80°36'27", NAD27, Hydrologic Unit 05030106, about 2.5 mi west of Bethany on hilltop about 1,700 ft west of Buffalo Creek.

AQUIFER.--Waynesburg coal in the Monongahela Group of Upper Pennsylvanian age.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 6 in., depth 50.5 ft, cased with steel to 46.5 ft and set in bentonite clay seal.

INSTRUMENTATION.--July 1982 to June 1999, continuous strip-chart water-level recorder. June 1999 to October 30, 2000, digital water-level recorder--60-minute punch. Electronic data logger at 60-minute interval, October 30, 2000 to present. Satellite telemetry installed at site on February 28, 2002.

DATUM.--Elevation of land-surface datum is about 1,150 ft above NGVD of 1929. Measuring point: Top of casing, 2.18 ft above land-surface datum. The measuring point was changed from 2.18 ft to 2.14 ft above land-surface datum on February 28, 2002.

REMARKS.--Aquifer test data available. No water-level record March 13-24 and April 13-29 due to recorder malfunction.

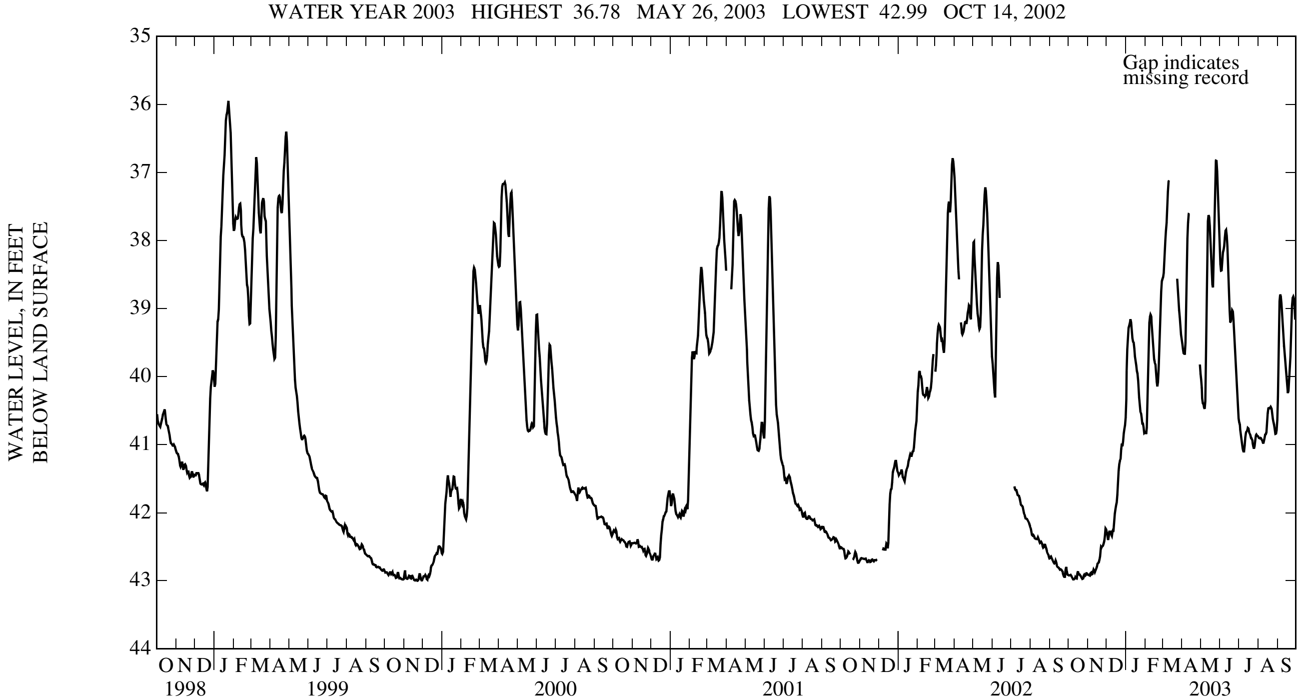
PERIOD OF RECORD.--July 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 34.87 ft below land-surface datum, Apr. 3, 1985; lowest, 43.15 ft below land-surface datum, Dec. 13, 1994.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	42.91	42.93	42.28	39.35	40.21	38.10	39.66	40.39	38.21	40.90	40.90	38.80
10	42.98	42.84	42.32	39.26	39.07	37.17	37.82	39.36	37.85	41.09	40.95	39.33
15	42.95	42.81	42.00	39.64	39.69	---	---	37.70	38.64	40.78	40.79	39.90
20	42.92	42.69	41.43	39.98	40.14	---	---	38.73	39.03	40.90	40.47	40.03
25	42.96	42.48	40.94	40.54	39.17	38.63	---	36.88	39.75	41.06	40.64	38.86
EOM	42.91	42.19	40.68	40.85	38.56	39.42	39.91	37.95	40.56	40.88	40.76	39.27

WATER YEAR 2003 HIGHEST 36.78 MAY 26, 2003 LOWEST 42.99 OCT 14, 2002



OCTOBER 1, 1998 THROUGH SEPTEMBER 30, 2003

NOTE.--Extremes for period of record for 2002 water year published in error. Highest water level published as 25.39 ft and lowest water level published as 36.78 ft were both in error and should have been the same as this year's extremes.

GROUND WATER LEVELS—Continued

GRANT COUNTY

391652079181401. Local number, Grt-0090.

LOCATION.--Lat 39°16'52", long 79°18'14", NAD27, Hydrologic Unit 02070002, about 200 ft north of U.S. Route 50, about 3.5 mi west of Mount Storm.

AQUIFER.--Thin bed of coal in the Conemaugh Group of Upper Pennsylvanian age.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 6 in., depth 24 ft, cased with plastic to 23 ft.

INSTRUMENTATION.--Digital water-level recorder--60-minute punch to May 16, 2000. Electronic data logger at 60-minute interval, May 16, 2000 to present. Satellite telemetry available at site August 4, 2003.

DATUM.--Elevation of land-surface datum is about 2,890 ft above NGVD of 1929. Measuring point: Top edge of recorder shelter base, 1.50 ft above land-surface datum.

REMARKS.--Well is near reclaimed surface mine. No water-level record November 4, 5, December 20-26, February 23, 24, 26-28, June 29 to July 9, and July 17 to August 1 due to recorder malfunction.

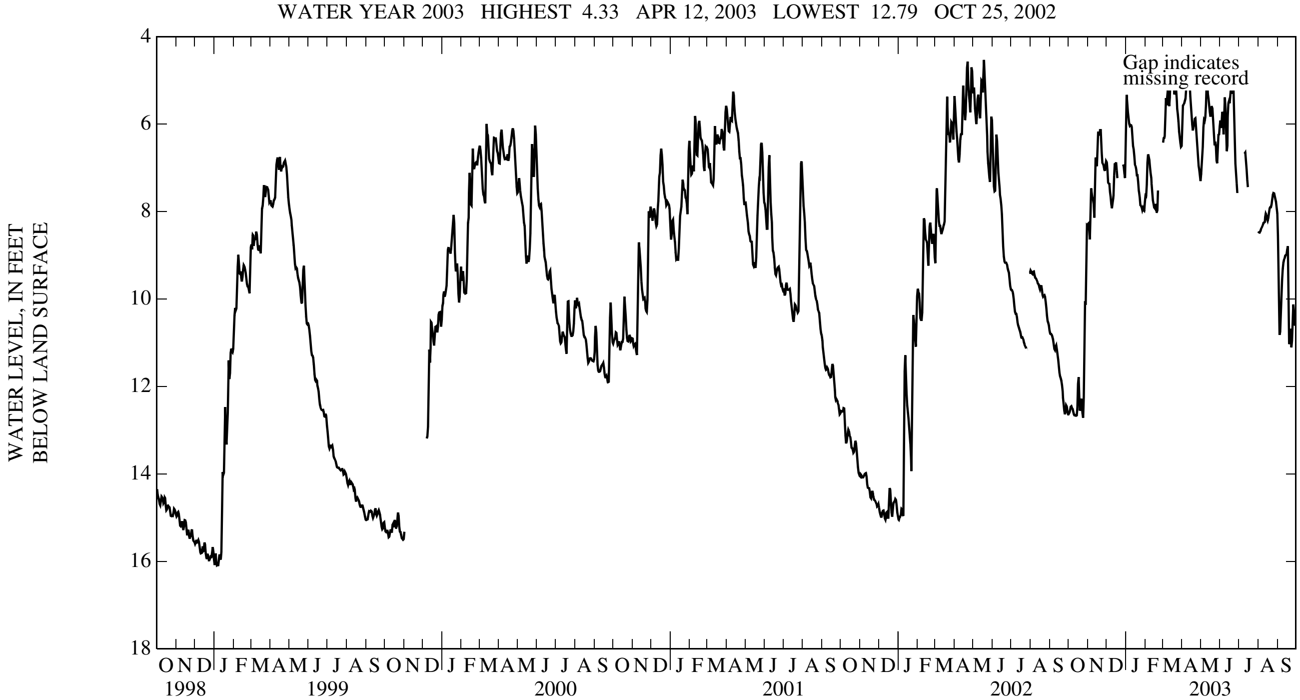
PERIOD OF RECORD.--June 1978 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.12 ft below land-surface datum, Apr. 22, 2002; lowest, 21.24 ft below land-surface datum, Nov. 28, 29, 1982.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	12.40	8.80	7.28	5.82	6.65	6.19	5.49	6.32	5.72	---	8.43	10.83
10	12.66	7.74	7.89	6.04	7.16	5.34	4.51	5.35	5.88	6.86	8.24	9.22
15	12.65	6.88	7.01	6.82	7.83	4.83	5.46	5.70	5.53	7.38	8.12	9.02
20	12.62	6.12	---	7.18	8.05	5.39	5.98	5.75	5.36	---	7.91	10.99
25	12.79	6.88	---	7.91	6.47	5.72	6.39	6.32	6.78	---	7.59	10.73
EOM	8.27	6.85	7.24	7.94	---	6.53	7.30	6.25	---	---	7.98	10.44

WATER YEAR 2003 HIGHEST 4.33 APR 12, 2003 LOWEST 12.79 OCT 25, 2002



OCTOBER 1, 1998 THROUGH SEPTEMBER 30, 2003

GROUND WATER LEVELS—Continued

JEFFERSON COUNTY

392104077554801. Local number, Jef-0526.

LOCATION.--Lat 39°21'04", long 77°55'48", NAD27, Hydrologic Unit 02070007, at Leetown Fish Research Station, Leetown.

AQUIFER.--Beekmantown Group of Lower Ordovician age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in., depth 155 ft, cased with steel to 36.7 ft, screened from 36.7 ft to 155 ft.

INSTRUMENTATION.--Digital water-level recorder--60-minute punch to August 3, 2000. Electronic data logger at 60-minute interval, August 3, 2000 to present. Satellite telemetry installed at site on about May 29, 2001.

DATUM.--Elevation of land-surface datum is about 480 ft above NGVD of 1929. Measuring point: Top edge of recorder shelter base, 1.68 ft above land-surface datum. Prior to May 23, 2001, measuring point was 2.20 ft above land-surface datum.

REMARKS.--Water-quality and well log data available. No water-level record August 2-4 due to equipment malfunction.

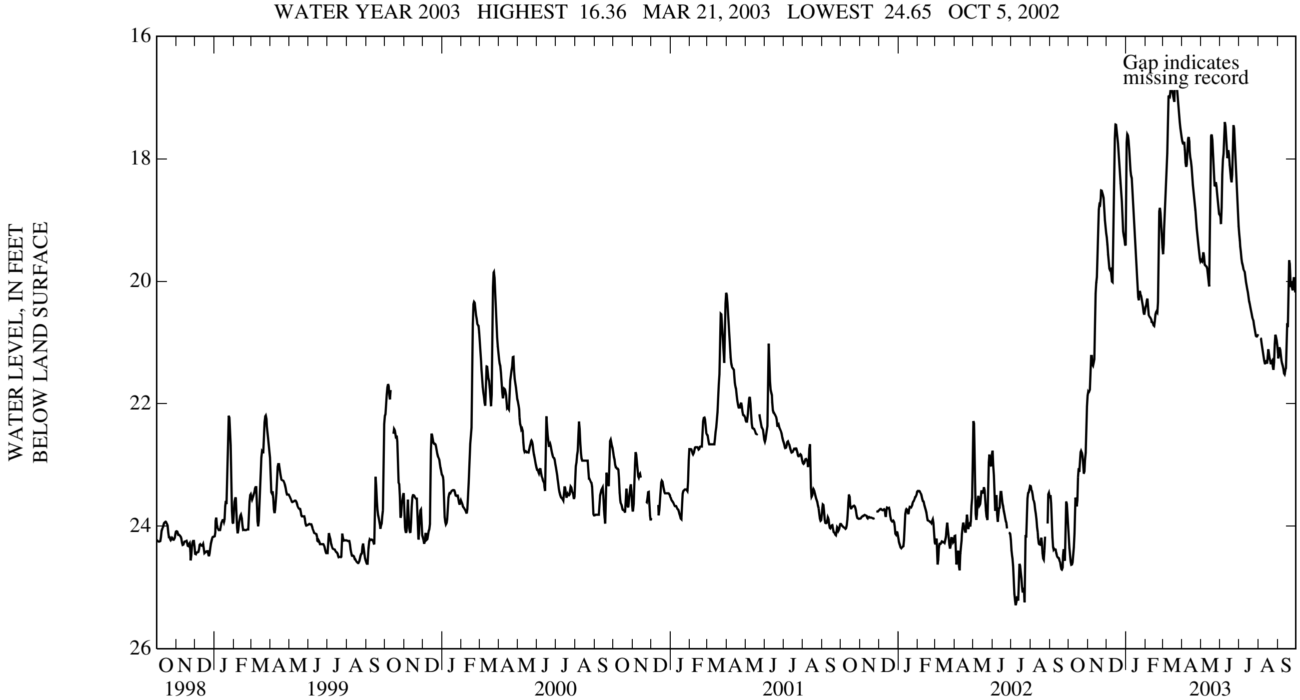
PERIOD OF RECORD.--March 1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.85 ft below land-surface datum, May 21, 22, 1988; lowest, 25.39 ft below land-surface datum, July 23, 2002.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	24.65	21.76	19.74	17.64	20.31	18.86	17.71	19.57	18.04	19.57	20.89	21.05
10	24.28	21.37	20.06	18.29	20.60	17.01	17.71	19.76	17.53	19.81	21.26	21.40
15	23.75	19.98	17.48	19.24	20.72	16.81	18.01	20.12	17.86	20.15	21.31	21.44
20	22.83	18.74	17.80	20.18	20.49	17.09	18.58	17.76	18.37	20.46	21.28	19.62
25	23.06	18.58	18.59	20.21	18.82	16.95	19.19	18.37	17.79	20.67	21.43	20.23
EOM	21.93	19.16	19.43	20.54	19.35	17.61	19.68	18.96	19.01	20.91	20.99	20.30

WATER YEAR 2003 HIGHEST 16.36 MAR 21, 2003 LOWEST 24.65 OCT 5, 2002



OCTOBER 1, 1998 THROUGH SEPTEMBER 30, 2003

GROUND WATER LEVELS—Continued

MINGO COUNTY

373554081493401. Local number, Mig-0131.

LOCATION.--Lat 37°35'54", long 81°49'34", NAD27, Hydrologic Unit 05070101, downstream of toe of R. D. Bailey Dam northeast of Justice.

AQUIFER.--New River Formation of Lower Pennsylvanian age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in., depth 66 ft, cased with steel.

INSTRUMENTATION.--Digital water-level recorder--60-minute punch to November 14, 2000. Electronic data logger at 60-minute interval, November 16, 2000 to present.

DATUM.--Elevation of land-surface datum is about 920 ft above NGVD of 1929. Measuring point is the top edge of recorder shelter. Land-surface datum correction changed from 1.06 ft to 1.57 ft when new recorder shelter was installed and casing repaired on November 18, 1999.

REMARKS.--At times, water level affected by Guyandotte River.

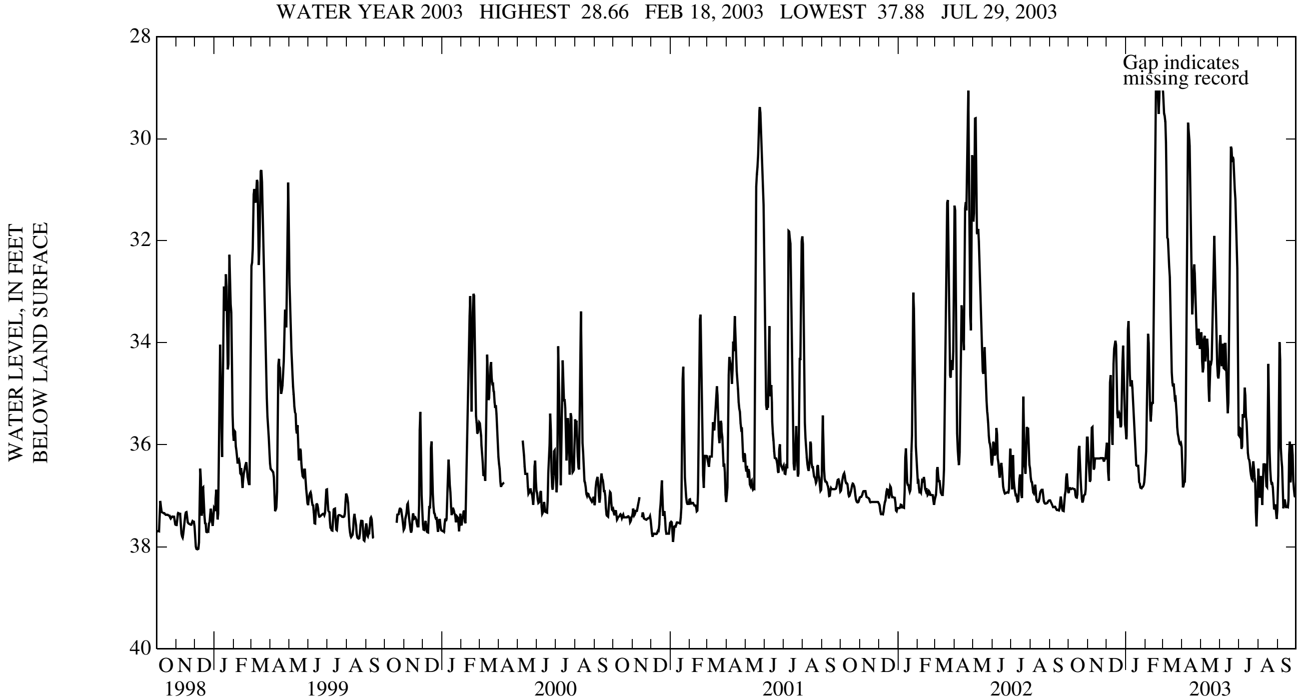
PERIOD OF RECORD.--March 1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 28.42 ft below land-surface datum, May 10, 1989; lowest, 44.29 ft below land-surface datum, Oct. 6, 1982.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	36.87	36.84	36.60	33.58	33.98	29.58	36.69	34.63	33.87	35.80	36.61	32.86
10	36.87	36.33	36.11	34.79	35.48	32.04	29.69	33.87	34.18	35.13	36.37	37.24
15	37.04	36.27	33.95	35.79	32.62	34.46	32.36	35.03	34.97	36.05	36.81	37.22
20	36.51	36.27	35.44	36.41	28.84	35.16	32.37	33.38	30.47	36.60	36.38	35.47
25	37.04	36.26	35.44	36.85	28.72	35.76	34.04	32.94	31.11	36.35	36.90	35.89
EOM	35.70	36.27	35.66	36.72	28.95	35.95	34.26	34.28	35.63	37.33	37.46	36.92

WATER YEAR 2003 HIGHEST 28.66 FEB 18, 2003 LOWEST 37.88 JUL 29, 2003



OCTOBER 1, 1998 THROUGH SEPTEMBER 30, 2003

GROUND WATER LEVELS—Continued

POCAHONTAS COUNTY

380653080155301. Local number, Poc-0256.

LOCATION.--Lat 38°06'53", long 80°15'53", NAD27, Hydrologic Unit 05050003, on Droop Mountain State Park north of Droop on U.S. Route 219.

AQUIFER.--Mauch Chunk Group of Upper Mississippian age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in., depth 86 ft, cased with steel.

INSTRUMENTATION.--Weekly measurement with chalked tape by observer, 1970-76; periodic measurement by USGS personnel, 1978-80; digital water-level recorder--60-minute punch, 1980 to September 11, 2000. Electronic data logger at 60-minute interval, September 11, 2000 to present.

DATUM.--Elevation of land-surface datum is about 3,000 ft above NGVD of 1929. Measuring point: Top edge of recorder shelter base at land-surface datum. May 28, 1980 to July 7, 1983, measuring point 0.65 ft above land-surface datum. Prior to May 28, 1980, measuring point was top of casing at land-surface datum.

PERIOD OF RECORD.--December 1970 to January 1976, April 1978 to current year. Published as local well number "44-4-1", 1973-78.

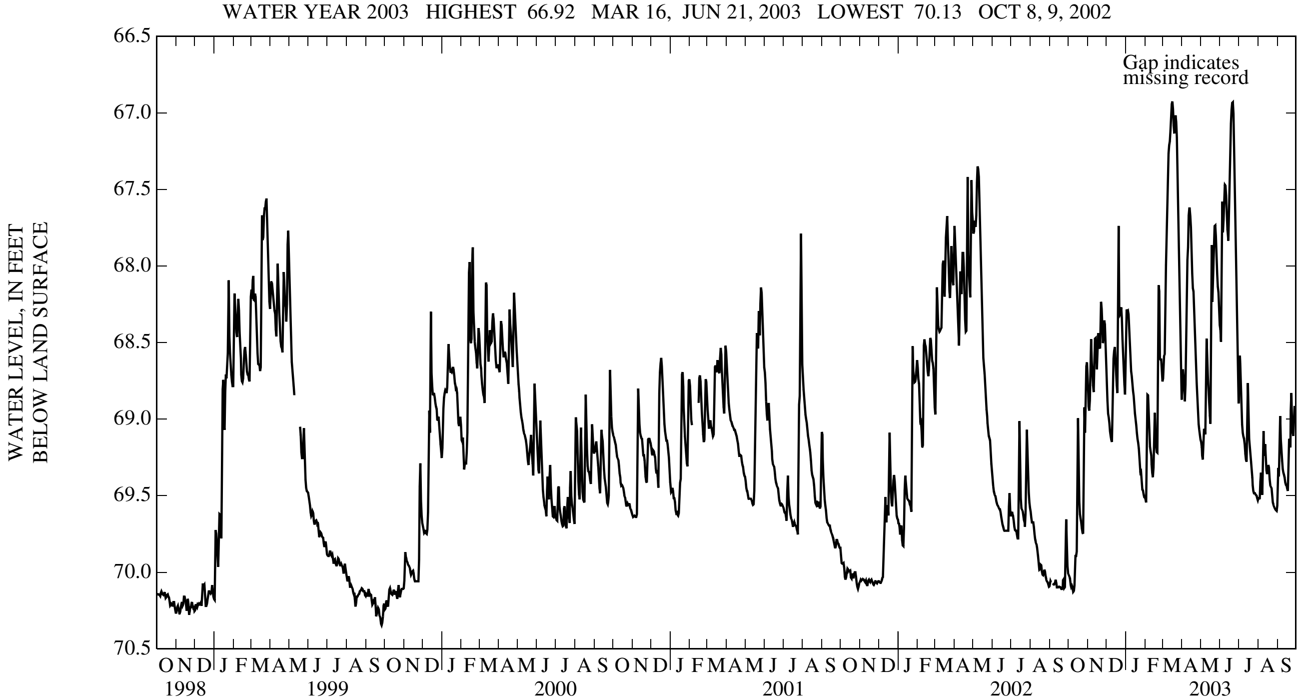
REVISED RECORDS.--WDR WV-79-1: Well location, well characteristics, and water levels. WDR WV-83-1: Station identification number and lowest water level.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 62.86 ft below land-surface datum, May 30, 1982; lowest, 70.37 ft below land-surface datum, July 22, 1997. (73.39 ft below land-surface datum, Oct. 25, 1984, due to pumping.)

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	70.10	68.83	68.99	68.29	68.82	68.57	68.82	69.27	67.81	68.88	69.30	68.85
10	70.12	68.81	69.15	68.70	69.21	67.31	68.06	68.50	67.48	69.14	69.18	69.34
15	69.87	68.64	68.56	68.95	69.25	66.97	67.71	68.95	67.91	68.66	69.36	69.43
20	69.65	68.54	67.20	69.14	69.22	67.13	68.20	68.26	66.95	69.26	69.42	69.14
25	69.75	68.47	68.24	69.35	68.62	67.37	68.80	67.75	67.39	69.48	69.55	69.07
EOM	68.68	68.53	68.86	69.51	68.73	68.80	69.13	68.38	68.79	69.53	69.60	69.04

WATER YEAR 2003 HIGHEST 66.92 MAR 16, JUN 21, 2003 LOWEST 70.13 OCT 8, 9, 2002



OCTOBER 1, 1998 THROUGH SEPTEMBER 30, 2003

GROUND WATER LEVELS—Continued

WAYNE COUNTY

382205082304501. Local number, Way-0144.

LOCATION.--Lat 38°22'05", long 82°30'45", NAD83, Hydrologic Unit 05090102. From Junction 152 and 75, just north of Lavalatte, follow 75 east 4.6 mi to Spring Valley Drive (Hwy 7). Then follow Spring Valley Drive 1.6 mi north to Camp Mad Anthony Wayne. Camp is on the right and does not have any type of sign, just two rock pillars with a gate.

AQUIFER.--Conemaugh Group of Upper Pennsylvanian age.

WELL CHARACTERISTICS.--Drilled unused water table well, diameter, 6 in, depth, 106 ft, cased with steel to 30 ft.

INSTRUMENTATION.--Electronic data logger at 60-minute interval, March 29, 2001 to present.

DATUM.--Elevation of land-surface datum is about 618 ft above NGVD of 1929. Measuring point: Top of extended casing, 3.14 ft above land-surface datum.

REMARKS.--No water-level record February 7 to March 26 and June 4, 5 due to equipment malfunction.

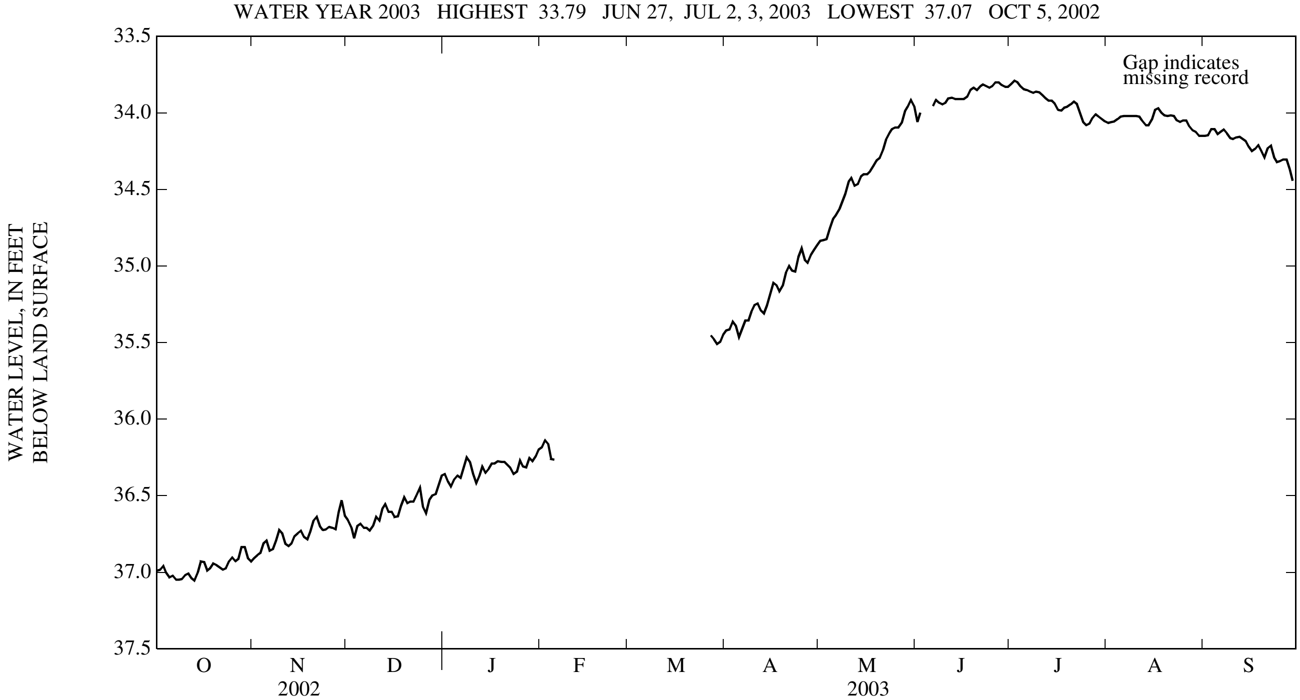
PERIOD OF RECORD.--May 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 33.76 ft below land-surface datum, June 26, 27, 2003; lowest, 37.15 ft below land-surface datum, Mar. 9, 10, 2002.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	37.07	36.75	36.65	36.34	36.30	---	35.44	34.70	---	33.84	34.03	34.14
10	37.04	36.68	36.66	36.32	---	---	35.27	34.51	33.95	33.85	34.02	34.17
15	36.96	36.75	36.57	36.39	---	---	35.22	34.39	33.91	33.92	34.08	34.19
20	36.95	36.72	36.52	36.27	---	---	35.10	34.30	33.85	33.96	34.02	34.29
25	36.90	36.72	36.49	36.30	---	---	34.86	34.09	33.84	34.08	34.05	34.32
EOM	36.94	36.54	36.41	36.20	---	35.50	34.88	33.85	33.83	34.04	34.15	34.46

WATER YEAR 2003 HIGHEST 33.79 JUN 27, JUL 2, 3, 2003 LOWEST 37.07 OCT 5, 2002



OCTOBER 1, 2002 THROUGH SEPTEMBER 30, 2003

GROUND WATER LEVELS—Continued

WEBSTER COUNTY

382008080292801. Local number, Web-0167.

LOCATION.--Lat 38°20'08", long 80°29'28", NAD27, Hydrologic Unit 05050005, at Bishop Knob Campground about 0.50 mi from junction of U.S. Forest Service Roads 81 and 82 and about 4 mi from Dyer.

AQUIFER.--Kanawha Formation of Lower Pennsylvanian age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in., depth 80 ft, cased with galvanized iron to 60 ft.

INSTRUMENTATION.--Periodic measurement with chalked tape by USGS personnel, 1980-82. Digital water-level recorder--60-minute punch, 1982 to November 1, 2000. Electronic data logger at 60-minute interval, November 1, 2000 to present.

DATUM.--Elevation of land-surface datum is about 3,100 ft above NGVD of 1929. Measuring point: Top of extended casing, 2.00 ft above land-surface datum.

REMARKS.--No water-level record October 20-23 due to equipment malfunction.

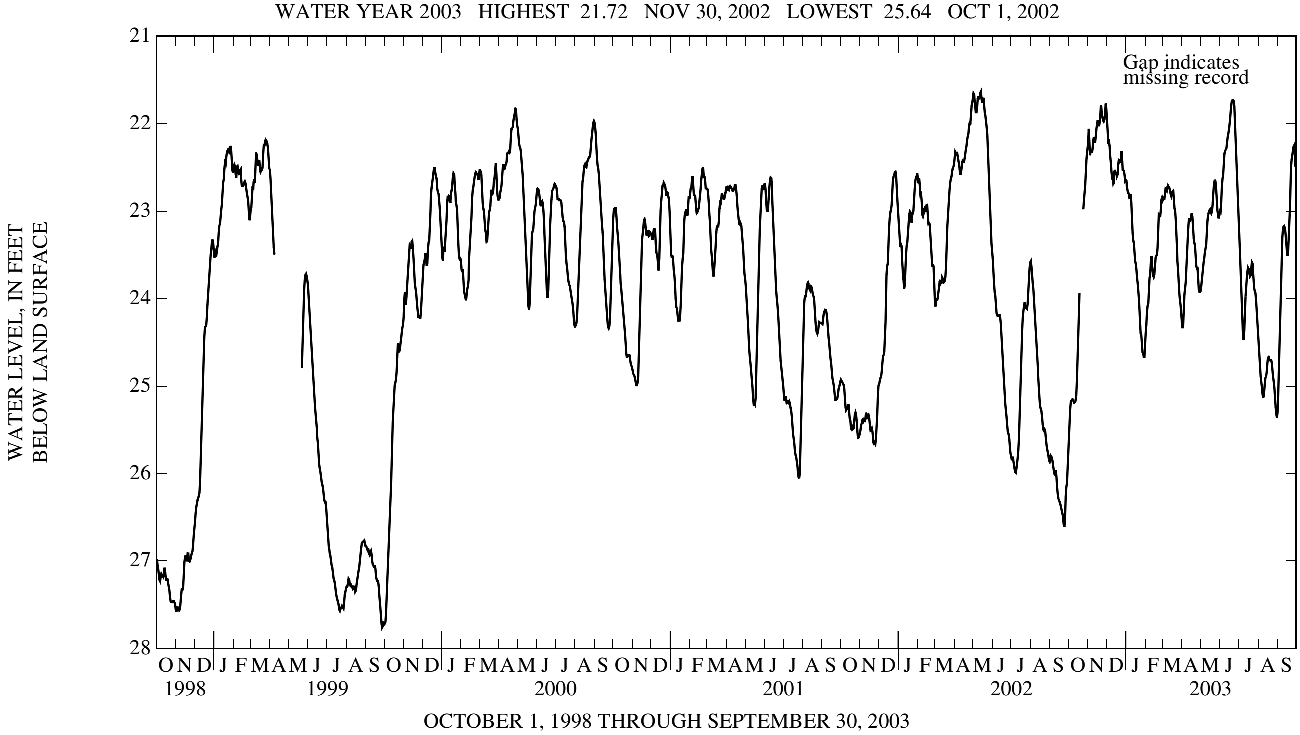
PERIOD OF RECORD.--March 1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 21.00 ft below land-surface datum, Dec. 5, 1996; lowest, 28.01 ft below land-surface datum, Oct. 17, 1995.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	25.17	22.36	22.16	22.79	24.10	22.76	23.87	23.60	22.61	24.09	24.92	24.01
10	25.20	22.12	22.62	22.98	23.48	22.72	23.26	23.36	22.30	24.28	25.09	23.18
15	24.80	22.02	22.57	23.55	23.75	22.82	23.08	22.98	22.06	23.66	24.81	23.39
20	---	21.98	22.38	23.85	23.50	22.99	23.37	22.87	21.74	23.71	24.71	23.06
25	22.95	21.94	22.25	24.41	23.08	23.62	23.63	22.69	21.95	23.85	24.92	22.33
EOM	22.31	21.72	22.69	24.62	22.86	24.23	23.93	22.98	23.07	24.34	25.36	22.58

WATER YEAR 2003 HIGHEST 21.72 NOV 30, 2002 LOWEST 25.64 OCT 1, 2002



GROUND WATER LEVELS—Continued

WYOMING COUNTY

373839081255201. Local number, Wyo-0148.

LOCATION.--Lat 37°38'39", long 81°25'52", NAD27, Hydrologic Unit 05070101, at Twin Falls State Park. .

AQUIFER.--New River Formation of Lower Pennsylvanian age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in., depth 80 ft, cased with steel to 28 ft.

INSTRUMENTATION.--Digital water-level recorder--60-minute punch to September 27, 2000. Electronic data logger and satellite telemetry at 60-minute interval, October 2, 2000 to present.

DATUM.--Elevation of land-surface datum is about 2,015 ft above NGVD of 1929. New measuring point established on September 27, 2000: Top of recorder shelter floor, 3.39 ft above land-surface datum.

REMARKS.--Aquifer test data available. Water-level record affected by nearby pumping at times. No water-level record July 4, 5, 12-24 due to equipment malfunction.

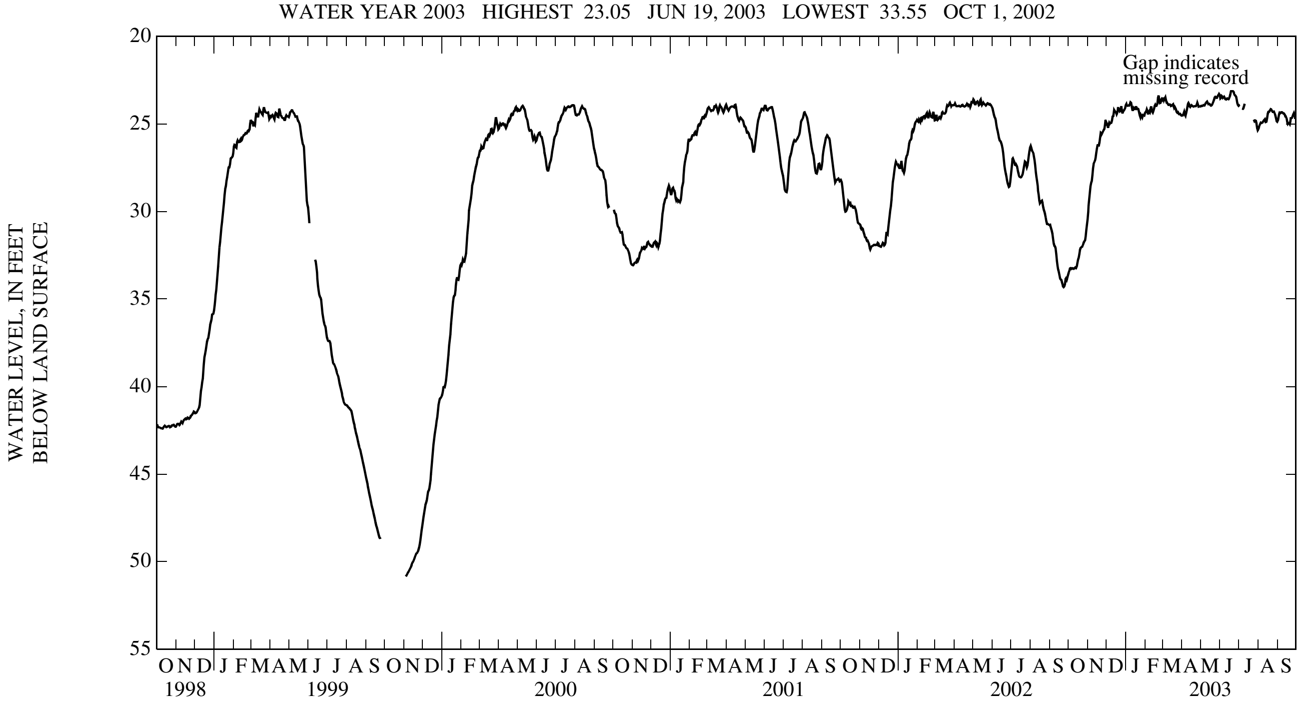
PERIOD OF RECORD.--December 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 19.19 ft below land-surface datum, Mar. 13, 1980; lowest, 52.40 ft below land-surface datum, Nov. 24, 1987.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	33.30	28.78	24.82	23.94	24.45	23.47	24.29	23.92	23.48	---	24.93	24.39
10	33.27	27.31	24.72	23.89	23.92	23.94	23.92	23.80	23.64	23.91	24.81	24.37
15	33.06	26.51	24.35	24.20	24.13	23.97	23.99	23.84	23.60	---	24.82	24.56
20	32.12	25.97	23.93	24.10	23.97	24.06	24.01	23.87	23.09	---	24.26	25.02
25	31.85	25.48	23.91	24.57	23.89	24.34	23.81	23.45	23.38	24.66	24.31	24.60
EOM	30.65	24.64	24.09	24.48	23.60	24.57	24.00	23.18	23.95	25.38	24.89	24.78

WATER YEAR 2003 HIGHEST 23.05 JUN 19, 2003 LOWEST 33.55 OCT 1, 2002



OCTOBER 1, 1998 THROUGH SEPTEMBER 30, 2003

GROUND-WATER QUALITY

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL, AND MISCELLANEOUS SITES

Site Descriptions for Ambient Ground-Water-Quality Network
Multiple Sites

REMARKS.--During 2003, 30 wells were sampled as part of an ongoing study of the ambient ground-water quality in West Virginia. Samples included field determinations, major ions, nutrients, bacteria, metals, volatile organic compounds, radon, and at selected sites, pesticides. No pesticides were detected at the 4 sites sampled as indicated by an asterisk (*), but one or more volatile organic compounds were detected at 3 of 30 sites. Values in the table that report detections of VOC are **shown in bold.**

Station Number	Site Name	Latitude	Longitude	County
381950081104601	Cla-0143	Lat 38°19'50",	long 81°10'46",	Clay County.
380954081552001	Lin-0047	Lat 38°09'54",	long 81°55'20",	Lincoln County.
384511081591701*	Mas-0960	Lat 38°45'11",	long 81°59'17",	Mason County.
384449082010301	Mas-0961	Lat 38°44'49",	long 82°01'03",	Mason County.
384322081580101*	Mas-0962	Lat 38°43'22",	long 81°58'01",	Mason County.
384359081582401*	Mas-0963	Lat 38°43'59",	long 81°58'24",	Mason County.
383807080343801	Brx-0271	Lat 38°38'07",	long 80°34'38",	Braxton County.
383907080232101	Web-0239	Lat 38°39'07",	long 80°23'21",	Webster County.
385619079573801	Ran-0275	Lat 38°56'19",	long 79°57'38",	Randolph County.
390131080032201	Ups-0177	Lat 39°01'31",	long 80°03'22",	Upshur County.
383007080030101	Ran-0276	Lat 38°30'07",	long 80°03'01",	Randolph County.
383754080050501	Ran-0277	Lat 38°37'54",	long 80°05'05",	Randolph County.
392538078510301	Min-0168	Lat 39°25'38",	long 78°51'04",	Mineral County.
392014078551801	Min-0169	Lat 39°20'14",	long 78°55'18",	Mineral County.
392304078512901	Min-0170	Lat 39°23'04",	long 78°51'28",	Mineral County.
391137079160401	Grt-0106	Lat 39°11'37",	long 79°16'04",	Grant County.
393106078513401*	Min-0171	Lat 39°31'06",	long 78°51'34",	Mineral County.
393258078505301	Min-0172	Lat 39°32'58",	long 78°50'53",	Mineral County.
384009081530401	Mas-0964	Lat 38°40'09",	long 81°53'05",	Mason County.
383414081154901	Roa-0191	Lat 38°34'14",	long 81°15'49",	Roane County.
383258081080901	Cla-0144	Lat 38°32'58",	long 81°08'09",	Clay County.
384530080140801	Ups-0178	Lat 38°45'30",	long 80°14'08",	Upshur County.
382525080005601	Poc-0263	Lat 38°25'25",	long 80°00'56",	Pocahontas County.
382324080014101	Poc-0264	Lat 38°23'24",	long 80°01'41",	Pocahontas County.
382435080072301	Poc-0265	Lat 38°24'35",	long 80°07'23",	Pocahontas County.
383235080020701	Ran-0278	Lat 38°32'35",	long 80°02'07",	Randolph County.
375509081494301	Log-0220	Lat 37°55'09",	long 81°49'43",	Logan County.
381106081504601	Boo-0261	Lat 38°11'06",	long 81°50'46",	Boone County.
375704081263101	Ral-0126	Lat 37°57'04",	long 81°26'31",	Raleigh County.
375545081212701	Ral-0222	Lat 37°55'45",	long 81°21'27",	Raleigh County.

GROUND-WATER QUALITY

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL, AND MISCELLANEOUS SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Station number	Date	Time	County	Geo- logic unit	Depth of well, feet below LSD (72008)	Alti- tude of land surface feet (72000)	Oxi- dation re- duction poten- tial, mV (00090)	Tur- bidity, NTU (00076)	Baro- metric pres- sure, mm Hg (00025)	Carbon dioxide water, unfltrd mg/L (00405)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)
381950081104601	06-09-03	1400	CLAY	327KNWH	58	1020	241	4.6	735	44	1.5	15
380954081552001	06-10-03	1315	LINCOLN	327KNWH	107	740	102	13	746	34	<1.0	--
384511081591701	06-11-03	1045	MASON	321MNGL	90	600	127	5.9	748	117	1.4	14
384449082010301	06-11-03	1415	MASON	321MNGL	96	620	173	13	744	24	<1.0	--
384322081580101	06-12-03	1015	MASON	111ALVM	50	570	108	3.9	747	19	1.3	13
384359081582401	06-12-03	1345	MASON	111ALVM	80	575	97	1.1	746	20	<1.0	--
383807080343801	06-17-03	1020	BRAXTON	327KNWH	120	1040	238	1.7	741	68	1.6	16
383907080232101	06-17-03	1520	WEBSTER	327KNWH	130	1480	117	.7	727	28	<1.0	--
385619079573801	06-18-03	0945	RANDOLPH	327KNWH	500	1870	140	1.4	718	20	<1.0	--
390131080032201	06-18-03	1330	UPSHUR	327NEWR	120	1740	122	1.1	718	37	<1.0	--
383007080030101	06-19-03	0840	RANDOLPH	341DVNUM	320	2620	-51	1.4	695	.6	<1.0	--
383754080050501	06-19-03	1250	RANDOLPH	327NEWR	220	3220	165	18	680	32	<1.0	--
392538078510301	06-24-03	1015	MINERAL	341DVNUM	75	700	168	1.6	749	87	<1.0	--
392014078551801	06-24-03	1330	MINERAL	341DVNUM	150	750	153	1.8	748	58	<1.0	--
392304078512901	06-25-03	1015	MINERAL	341DVNUM	150	690	151	78	746	73	1.0	10
391137079160401	06-25-03	1430	GRANT	321CNMG	197	3260	184	1.9	682	31	<1.0	--
393106078513401	06-26-03	0920	MINERAL	347ORSK	420	1500	363	1.2	729	34	7.8	77
393258078505301	06-26-03	1240	MINERAL	341DVNUM	560	790	395	2.4	744	66	12.2	117
384009081530401	07-01-03	1100	MASON	317DKRD	50	690	271	5.2	747	16	9.5	95
383414081154901	07-02-03	0945	ROANE	321CNMG	110	670	84	2.1	741	38	<1.0	--
383258081080901	07-02-03	1230	CLAY	321CNMG	56	800	96	1.7	740	50	1.0	10
384530080140801	07-07-03	1430	UPSHUR	327KNWH	158	1920	98	1.8	715	6.2	<1.0	--
382525080005601	07-08-03	0945	POCAHONTAS	331MCCK	140	3260	151	2.1	685	7.0	<1.0	--
382324080014101	07-08-03	1350	POCAHONTAS	331MCCK	460	3200	738	1.7	683	6.7	<1.0	--
382435080072301	07-09-03	0920	POCAHONTAS	334GRBR	50	2700	346	1.7	697	1.7	4.3	43
383235080020701	07-09-03	1330	RANDOLPH	341DVNUM	100	2380	-20	2.0	702	1.2	<1.0	--
375509081494301	07-10-03	0945	LOGAN	327KNWH	87	860	90	1.9	741	23	<1.0	--
381106081504601	07-10-03	1430	BOONE	324ALGN	140	630	23	3.9	739	15	<1.0	--
375704081263101	07-15-03	0945	RALEIGH	327KNWH	84	1020	112	1.8	739	32	<1.0	--
375545081212701	07-15-03	1215	RALEIGH	327NEWR	180	1350	150	2.8	730	66	1.1	11

GROUND-WATER QUALITY

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL, AND MISCELLANEOUS SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Station number	Date	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Noncarb hardness, wat unf lab, mg/L as CaCO3 (00903)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)	Potassium, water, unfltrd recover -able, mg/L (00937)	Sodium, water, unfltrd recover -able, mg/L (00929)	Acidity water, unfltrd heated, mg/L as H+ (71825)	Acidity water, unfltrd mg/L as CaCO3 (00435)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)
381950081104601	06-09-03	6.4	165	14.6	--	11	3.6	1.5	13	.1	5.0	71
380954081552001	06-10-03	6.7	363	14.4	--	20	4.0	2.4	42	.5	25	92
384511081591701	06-11-03	6.7	764	13.8	--	44	12	2.1	110	1.1	55	305
384449082010301	06-11-03	7.5	920	15.1	--	17	4.1	1.3	200	.4	20	399
384322081580101	06-12-03	6.4	395	15.6	48	22	4.1	1.3	18	1.5	74	95
384359081582401	06-12-03	7.3	616	14.1	--	33	6.1	1.8	95	.5	25	210
383807080343801	06-17-03	5.6	108	13.4	16	6.9	3.2	1.1	2.0	.6	30	28
383907080232101	06-17-03	6.7	221	13.4	--	19	5.2	1.4	13	.2	9.9	76
385619079573801	06-18-03	6.7	226	12.3	19	20	5.0	2.5	11	2.2	109	56
390131080032201	06-18-03	6.7	227	12.3	--	13	2.3	1.7	31	.2	9.9	94
383007080030101	06-19-03	9.0	1040	12.4	--	.92	.16	1.2	230	<.1	--	334
383754080050501	06-19-03	6.5	122	10.3	--	12	3.9	1.6	4.2	.2	9.9	54
392538078510301	06-24-03	6.7	878	13.2	213	128	29	1.1	22	.5	25	213
392014078551801	06-24-03	6.7	631	13.0	137	83	19	.7	17	.5	25	147
392304078512901	06-25-03	6.7	1600	13.3	551	202	57	1.1	68	.8	40	182
391137079160401	06-25-03	7.0	321	9.7	10	52	9.3	2.4	.5	.3	15	142
393106078513401	06-26-03	7.0	399	12.7	39	67	12	.7	1.5	.3	15	166
393258078505301	06-26-03	6.9	618	12.3	60	105	17	1.3	5.8	.4	20	260
384009081530401	07-01-03	7.4	475	14.3	--	39	7.9	1.4	53	<.1	--	205
383414081154901	07-02-03	7.0	796	15.4	--	29	6.2	3.5	120	.5	25	188
383258081080901	07-02-03	6.9	616	14.5	--	48	9.1	2.7	56	.5	25	157
384530080140801	07-07-03	7.6	377	12.2	--	11	2.7	2.4	67	<.1	--	161
382525080005601	07-08-03	7.5	267	9.5	14	44	4.7	.4	4.2	.1	5.0	107
382324080014101	07-08-03	7.7	359	13.0	--	29	12	.5	32	<.1	--	174
382435080072301	07-09-03	7.9	150	11.5	--	22	3.2	.6	2.5	.2	9.9	63
383235080020701	07-09-03	8.3	381	14.2	--	4.5	.92	1.2	79	<.1	--	118
375509081494301	07-10-03	7.2	428	14.0	--	25	7.8	1.5	57	.2	9.9	202
381106081504601	07-10-03	7.4	1080	16.6	--	9.7	2.9	2.8	210	.2	9.9	184
375704081263101	07-15-03	6.8	270	13.9	--	21	6.2	1.3	26	1.0	50	98
375545081212701	07-15-03	6.0	213	15.0	12	9.9	5.2	1.4	10	.2	9.9	54

GROUND-WATER QUALITY

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL, AND MISCELLANEOUS SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Station number	Date	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Carbon-ate, wat flt incrm. titr., field, mg/L (00452)	Bromide water, fltrd, mg/L (71870)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat unf mg/L (00500)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia water unfltrd mg/L (71845)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water unfltrd mg/L as N (00630)
381950081104601	06-09-03	87	<1	.1	9.9	.2	1.6	46	89	.31	.24	<.02
380954081552001	06-10-03	112	<1	.2	54	.1	1.3	199	200	.63	.49	<.02
384511081591701	06-11-03	372	<1	.4	63	.2	16	463	451	1.42	1.10	<.02
384449082010301	06-11-03	486	<1	.3	48	.8	27	570	551	.27	.21	<.02
384322081580101	06-12-03	116	<1	.1	47	<.1	30	208	175	.41	.32	<.02
384359081582401	06-12-03	256	<1	.2	50	.3	45	374	374	1.06	.82	<.02
383807080343801	06-17-03	34	<1	<.1	1.4	<.1	23	64	58	.31	.24	<.02
383907080232101	06-17-03	93	<1	.1	18	.1	6.4	122	120	.50	.39	<.02
385619079573801	06-18-03	68	<1	<.1	18	<.1	23	136	131	.50	.39	<.02
390131080032201	06-18-03	115	<1	.1	14	.2	.1	135	126	.24	.19	<.02
383007080030101	06-19-03	321	43	1.4	129	2.2	3.0	616	614	.19	.15	<.02
383754080050501	06-19-03	66	<1	<.1	.6	<.1	8.0	90	88	.27	.21	<.02
392538078510301	06-24-03	260	<1	<.1	6.9	.2	248	654	613	.13	.10	<.02
392014078551801	06-24-03	179	<1	<.1	11.0	.2	165	473	448	--	<.01	<.02
392304078512901	06-25-03	222	<1	<.2	8.6	.2	659	1240	1240	.44	.34	<.02
391137079160401	06-25-03	173	<1	.4	5.4	.2	7.9	210	187	.23	.18	.09
393106078513401	06-26-03	202	<1	<.1	2.1	<.1	31	285	264	--	<.01	2.60
393258078505301	06-26-03	317	<1	<.1	11	.2	62	421	427	--	<.01	.57
384009081530401	07-01-03	250	<1	.1	21	.2	19	291	286	.09	.07	<.02
383414081154901	07-02-03	229	<1	.8	130	.3	<.1	433	438	.59	.46	<.02
383258081080901	07-02-03	191	<1	.5	66	.2	<.1	334	344	.77	.60	<.02
384530080140801	07-07-03	196	<1	.5	47	.4	.1	230	227	.45	.35	<.02
382525080005601	07-08-03	130	<1	<.1	7.2	<.1	18	168	168	.04	.03	<.02
382324080014101	07-08-03	212	<1	.1	6.5	.1	17	220	218	--	<.01	.14
382435080072301	07-09-03	77	<1	<.1	2.3	<.1	7.3	110	96	--	<.01	.49
383235080020701	07-09-03	144	<1	.4	44	.2	.1	230	228	.17	.13	<.02
375509081494301	07-10-03	246	<1	.2	28	.3	.1	271	252	.44	.34	<.02
381106081504601	07-10-03	224	<1	.9	167	.7	80	655	632	.85	.66	<.02
375704081263101	07-15-03	119	<1	.1	23	.1	3.2	184	157	.26	.20	<.02
375545081212701	07-15-03	66	<1	<.1	17	<.1	20	127	114	.09	.07	<.02

GROUND-WATER QUALITY

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL, AND MISCELLANEOUS SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Station number	Date	Nitrite water, unfltrd mg/L as N (00615)	Phos- phorus, water, unfltrd mg/L (00665)	Organic carbon, water, unfltrd mg/L (00680)	E coli, NA-MUG MF, water, col/ 100 mL (50278)	Fecal coli- form, M-FC 0.7u MF col/ 100 mL (31625)	Total coli- form, M-Endo, immed, col/ 100 mL (31501)	Alum- inum, water, unfltrd recover -able, ug/L (01105)	Anti- mony, water, unfltrd ug/L (01097)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryll- ium, water, unfltrd recover -able, ug/L (01012)
381950081104601	06-09-03	<.01	.13	.2	10	E6	32	<3	<1	<4	190	<1
380954081552001	06-10-03	<.01	.05	.6	<1	<1	E4	<3	<1	<4	440	<1
384511081591701	06-11-03	<.01	.54	1.4	4	E6	82	16	<1	24	810	<1
384449082010301	06-11-03	<.01	<.02	1.2	<1	<1	97	117	<1	4	140	<1
384322081580101	06-12-03	<.01	.25	.2	<1	<1	<1	<3	<1	<4	210	<1
384359081582401	06-12-03	<.01	.06	.5	<1	<1	E2	3	<1	8	190	<1
383807080343801	06-17-03	<.01	.06	.4	<1	<1	E6	23	<1	<4	100	<1
383907080232101	06-17-03	<.01	.10	.4	<1	<1	<1	<3	<1	<4	500	<1
385619079573801	06-18-03	<.01	.05	.6	<1	<1	E1	<3	<1	<4	760	<1
390131080032201	06-18-03	<.01	.05	.5	<1	<1	<1	<3	<1	<4	430	<1
383007080030101	06-19-03	<.01	.08	.3	<1	<1	E5	9	<1	6	180	<1
383754080050501	06-19-03	<.01	<.02	.4	<1	<1	<1	<3	<1	<4	160	<1
392538078510301	06-24-03	<.01	<.02	.7	<1	<1	<1	<3	<1	<4	19	<1
392014078551801	06-24-03	<.01	.03	.5	<1	<1	44	<3	<1	<4	16	<1
392304078512901	06-25-03	<.01	<.02	.9	<1	<1	<1	<3	<1	<4	15	<1
391137079160401	06-25-03	<.01	<.02	.8	<1	<1	E2	<3	<1	<4	270	<1
393106078513401	06-26-03	<.01	<.02	.3	<1	<1	<1	<3	<1	<4	35	<1
393258078505301	06-26-03	<.01	<.02	.8	<1	<1	21	25	<1	<4	45	<1
384009081530401	07-01-03	<.01	<.02	.5	<1	<1	E10	12	<1	5	500	<1
383414081154901	07-02-03	<.01	.06	1.1	<1	<1	<1	<3	<1	<4	2770	<1
383258081080901	07-02-03	<.01	.11	1.5	<1	<1	<1	<3	<1	<4	1750	<1
384530080140801	07-07-03	<.01	.05	.6	<1	<1	<1	<3	<1	<4	430	<1
382525080005601	07-08-03	<.01	<.02	.5	<1	<1	E3	<3	<1	<4	61	<1
382324080014101	07-08-03	<.01	<.02	.3	<1	<1	<1	<3	<1	<4	130	<1
382435080072301	07-09-03	<.01	<.02	.6	1	<1	220	18	<1	<4	38	<1
383235080020701	07-09-03	<.01	.08	.9	<1	<1	<1	3	<1	<4	230	<1
375509081494301	07-10-03	<.01	.04	1.0	<1	<1	<1	<3	<1	<4	460	<1
381106081504601	07-10-03	<.01	.07	.8	<1	<1	E16	88	<1	<4	450	<1
375704081263101	07-15-03	<.01	.08	.7	<1	<1	<1	<3	<1	<4	560	<1
375545081212701	07-15-03	.03	.07	.3	<1	<1	<1	<3	<1	<4	200	<1

GROUND-WATER QUALITY

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL, AND MISCELLANEOUS SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Station number	Date	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recover -able, ug/L (01034)	Cyanide water unfltrd mg/L (00720)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)	Manganese, water, unfltrd recover -able, ug/L (01055)	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selenium, water, unfltrd ug/L (01147)	Thallium, water, unfltrd ug/L (01059)	Zinc, water, unfltrd recover -able, ug/L (01092)
381950081104601	06-09-03	<.5	<1	<.01	8250	<2	249	<.1	<1	<4	<2	23
380954081552001	06-10-03	<.5	<1	<.01	4750	4	207	<.1	<1	<4	<2	176
384511081591701	06-11-03	<.5	<1	<.01	3540	<2	284	<.1	<1	<4	<2	56
384449082010301	06-11-03	<.5	<1	<.01	611	<2	199	<.1	<1	<4	<2	4
384322081580101	06-12-03	.8	<1	<.01	40000	<2	2860	<.1	<1	<4	<2	31
384359081582401	06-12-03	<.5	<1	<.01	599	<2	129	<.1	<1	<4	<2	7
383807080343801	06-17-03	<.5	<1	<.01	9370	<2	306	<.1	12	<4	<2	74
383907080232101	06-17-03	<.5	<1	<.01	1750	<2	153	<.1	<1	<4	<2	<2
385619079573801	06-18-03	<.5	<1	<.01	4800	<2	373	<.1	<1	<4	<2	<2
390131080032201	06-18-03	<.5	<1	<.01	809	<2	46	<.1	<1	<4	<2	<2
383007080030101	06-19-03	<.5	<1	<.01	18	<2	6	.1	<1	<4	<2	4
383754080050501	06-19-03	<.5	<1	<.01	2700	<2	252	<.1	<1	<4	<2	14
392538078510301	06-24-03	<.5	<1	<.01	1140	<2	517	<.1	7	<4	<2	53
392014078551801	06-24-03	<.5	<1	<.01	1240	<2	592	<.1	2	<4	<2	12
392304078512901	06-25-03	.6	<1	<.01	9220	2	1800	<.1	<1	<4	<2	457
391137079160401	06-25-03	<.5	<1	<.01	433	<2	58	<.1	<1	<4	<2	3
393106078513401	06-26-03	<.5	<1	<.01	4	<2	<1	<.1	<1	<4	<2	32
393258078505301	06-26-03	<.5	<1	<.01	22	2	<1	<.1	<1	<4	<2	313
384009081530401	07-01-03	<.5	<1	<.01	314	2	202	<.1	<1	<4	<2	69
383414081154901	07-02-03	<.5	<1	<.01	2860	<2	191	<.1	<1	<4	<2	35
383258081080901	07-02-03	<.5	<1	<.01	4480	<2	393	<.1	<1	<4	<2	29
384530080140801	07-07-03	<.5	<1	<.01	169	<2	19	<.1	<1	<4	<2	<2
382525080005601	07-08-03	<.5	<1	<.01	103	<2	74	<.1	<1	<4	<2	8
382324080014101	07-08-03	<.5	<1	<.01	4	<2	2	<.1	<1	<4	<2	82
382435080072301	07-09-03	<.5	<1	<.01	15	<2	<1	<.1	8	<4	<2	5
383235080020701	07-09-03	<.5	<1	<.01	97	3	17	<.1	<1	<4	<2	11
375509081494301	07-10-03	<.5	<1	<.01	816	<2	73	<.1	<1	<4	<2	15
381106081504601	07-10-03	<.5	<1	<.01	903	<2	63	<.1	<1	<4	<2	12
375704081263101	07-15-03	<.5	<1	<.01	424	<2	147	<.1	<1	<4	<2	2
375545081212701	07-15-03	<.5	<1	<.01	15700	<2	1000	<.1	<1	<4	<2	3

GROUND-WATER QUALITY

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL, AND MISCELLANEOUS SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Station number	Date	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atrazine, water, fltrd, ug/L (39632)	Azinphos-methyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	Butylate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)
381950081104601	06-09-03	--	--	--	--	--	--	--	--	--	--	--
380954081552001	06-10-03	--	--	--	--	--	--	--	--	--	--	--
384511081591701	06-11-03	<.006	<.006	<.006	<.004	<.005	<.007	<.050	<.010	<.002	<.041	<.020
384449082010301	06-11-03	--	--	--	--	--	--	--	--	--	--	--
384322081580101	06-12-03	<.006	<.006	<.006	<.004	<.005	<.007	<.050	<.010	<.002	<.041	<.020
384359081582401	06-12-03	<.006	<.006	<.006	<.004	<.005	<.007	<.050	<.010	<.002	<.041	<.020
383807080343801	06-17-03	--	--	--	--	--	--	--	--	--	--	--
383907080232101	06-17-03	--	--	--	--	--	--	--	--	--	--	--
385619079573801	06-18-03	--	--	--	--	--	--	--	--	--	--	--
390131080032201	06-18-03	--	--	--	--	--	--	--	--	--	--	--
383007080030101	06-19-03	--	--	--	--	--	--	--	--	--	--	--
383754080050501	06-19-03	--	--	--	--	--	--	--	--	--	--	--
392538078510301	06-24-03	--	--	--	--	--	--	--	--	--	--	--
392014078551801	06-24-03	--	--	--	--	--	--	--	--	--	--	--
392304078512901	06-25-03	--	--	--	--	--	--	--	--	--	--	--
391137079160401	06-25-03	--	--	--	--	--	--	--	--	--	--	--
393106078513401	06-26-03	<.006	<.006	<.006	<.004	<.005	<.007	<.050	<.010	<.002	<.041	<.020
393258078505301	06-26-03	--	--	--	--	--	--	--	--	--	--	--
384009081530401	07-01-03	--	--	--	--	--	--	--	--	--	--	--
383414081154901	07-02-03	--	--	--	--	--	--	--	--	--	--	--
383258081080901	07-02-03	--	--	--	--	--	--	--	--	--	--	--
384530080140801	07-07-03	--	--	--	--	--	--	--	--	--	--	--
382525080005601	07-08-03	--	--	--	--	--	--	--	--	--	--	--
382324080014101	07-08-03	--	--	--	--	--	--	--	--	--	--	--
382435080072301	07-09-03	--	--	--	--	--	--	--	--	--	--	--
383235080020701	07-09-03	--	--	--	--	--	--	--	--	--	--	--
375509081494301	07-10-03	--	--	--	--	--	--	--	--	--	--	--
381106081504601	07-10-03	--	--	--	--	--	--	--	--	--	--	--
375704081263101	07-15-03	--	--	--	--	--	--	--	--	--	--	--
375545081212701	07-15-03	--	--	--	--	--	--	--	--	--	--	--

GROUND-WATER QUALITY

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL, AND MISCELLANEOUS SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Station number	Date	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)
381950081104601	06-09-03	--	--	--	--	--	--	--	--	--	--	--
380954081552001	06-10-03	--	--	--	--	--	--	--	--	--	--	--
384511081591701	06-11-03	<.005	<.006	<.018	<.003	<.005	<.005	<.02	<.002	<.009	<.005	<.003
384449082010301	06-11-03	--	--	--	--	--	--	--	--	--	--	--
384322081580101	06-12-03	<.005	<.006	<.018	<.003	<.005	<.005	<.02	<.002	<.009	<.005	<.003
384359081582401	06-12-03	<.005	<.006	<.018	<.003	<.005	<.005	<.02	<.002	<.009	<.005	<.003
383807080343801	06-17-03	--	--	--	--	--	--	--	--	--	--	--
383907080232101	06-17-03	--	--	--	--	--	--	--	--	--	--	--
385619079573801	06-18-03	--	--	--	--	--	--	--	--	--	--	--
390131080032201	06-18-03	--	--	--	--	--	--	--	--	--	--	--
383007080030101	06-19-03	--	--	--	--	--	--	--	--	--	--	--
383754080050501	06-19-03	--	--	--	--	--	--	--	--	--	--	--
392538078510301	06-24-03	--	--	--	--	--	--	--	--	--	--	--
392014078551801	06-24-03	--	--	--	--	--	--	--	--	--	--	--
392304078512901	06-25-03	--	--	--	--	--	--	--	--	--	--	--
391137079160401	06-25-03	--	--	--	--	--	--	--	--	--	--	--
393106078513401	06-26-03	<.005	<.006	<.018	<.003	<.010	<.005	<.02	<.002	<.009	<.005	<.003
393258078505301	06-26-03	--	--	--	--	--	--	--	--	--	--	--
384009081530401	07-01-03	--	--	--	--	--	--	--	--	--	--	--
383414081154901	07-02-03	--	--	--	--	--	--	--	--	--	--	--
383258081080901	07-02-03	--	--	--	--	--	--	--	--	--	--	--
384530080140801	07-07-03	--	--	--	--	--	--	--	--	--	--	--
382525080005601	07-08-03	--	--	--	--	--	--	--	--	--	--	--
382324080014101	07-08-03	--	--	--	--	--	--	--	--	--	--	--
382435080072301	07-09-03	--	--	--	--	--	--	--	--	--	--	--
383235080020701	07-09-03	--	--	--	--	--	--	--	--	--	--	--
375509081494301	07-10-03	--	--	--	--	--	--	--	--	--	--	--
381106081504601	07-10-03	--	--	--	--	--	--	--	--	--	--	--
375704081263101	07-15-03	--	--	--	--	--	--	--	--	--	--	--
375545081212701	07-15-03	--	--	--	--	--	--	--	--	--	--	--

GROUND-WATER QUALITY

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL, AND MISCELLANEOUS SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Station number	Date	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)
381950081104601	06-09-03	--	--	--	--	--	--	--	--	--	--	--
380954081552001	06-10-03	--	--	--	--	--	--	--	--	--	--	--
384511081591701	06-11-03	<.004	<.035	<.027	<.006	<.013	<.006	<.002	<.007	<.003	<.010	<.004
384449082010301	06-11-03	--	--	--	--	--	--	--	--	--	--	--
384322081580101	06-12-03	<.004	<.035	<.027	<.006	<.013	<.006	<.002	<.007	<.003	<.010	<.004
384359081582401	06-12-03	<.004	<.035	<.027	<.006	<.013	<.006	<.002	<.007	<.003	<.010	<.004
383807080343801	06-17-03	--	--	--	--	--	--	--	--	--	--	--
383907080232101	06-17-03	--	--	--	--	--	--	--	--	--	--	--
385619079573801	06-18-03	--	--	--	--	--	--	--	--	--	--	--
390131080032201	06-18-03	--	--	--	--	--	--	--	--	--	--	--
383007080030101	06-19-03	--	--	--	--	--	--	--	--	--	--	--
383754080050501	06-19-03	--	--	--	--	--	--	--	--	--	--	--
392538078510301	06-24-03	--	--	--	--	--	--	--	--	--	--	--
392014078551801	06-24-03	--	--	--	--	--	--	--	--	--	--	--
392304078512901	06-25-03	--	--	--	--	--	--	--	--	--	--	--
391137079160401	06-25-03	--	--	--	--	--	--	--	--	--	--	--
393106078513401	06-26-03	<.004	<.035	<.027	<.006	<.013	<.006	<.002	<.007	<.003	<.010	<.004
393258078505301	06-26-03	--	--	--	--	--	--	--	--	--	--	--
384009081530401	07-01-03	--	--	--	--	--	--	--	--	--	--	--
383414081154901	07-02-03	--	--	--	--	--	--	--	--	--	--	--
383258081080901	07-02-03	--	--	--	--	--	--	--	--	--	--	--
384530080140801	07-07-03	--	--	--	--	--	--	--	--	--	--	--
382525080005601	07-08-03	--	--	--	--	--	--	--	--	--	--	--
382324080014101	07-08-03	--	--	--	--	--	--	--	--	--	--	--
382435080072301	07-09-03	--	--	--	--	--	--	--	--	--	--	--
383235080020701	07-09-03	--	--	--	--	--	--	--	--	--	--	--
375509081494301	07-10-03	--	--	--	--	--	--	--	--	--	--	--
381106081504601	07-10-03	--	--	--	--	--	--	--	--	--	--	--
375704081263101	07-15-03	--	--	--	--	--	--	--	--	--	--	--
375545081212701	07-15-03	--	--	--	--	--	--	--	--	--	--	--

GROUND-WATER QUALITY

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL, AND MISCELLANEOUS SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Station number	Date	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome-ton, water, fltrd, ug/L (04037)	Pron-amide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)
381950081104601	06-09-03	--	--	--	--	--	--	--	--	--	--	--
380954081552001	06-10-03	--	--	--	--	--	--	--	--	--	--	--
384511081591701	06-11-03	<.022	<.011	<.01	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02
384449082010301	06-11-03	--	--	--	--	--	--	--	--	--	--	--
384322081580101	06-12-03	<.022	<.011	<.01	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02
384359081582401	06-12-03	<.022	<.011	<.01	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02
383807080343801	06-17-03	--	--	--	--	--	--	--	--	--	--	--
383907080232101	06-17-03	--	--	--	--	--	--	--	--	--	--	--
385619079573801	06-18-03	--	--	--	--	--	--	--	--	--	--	--
390131080032201	06-18-03	--	--	--	--	--	--	--	--	--	--	--
383007080030101	06-19-03	--	--	--	--	--	--	--	--	--	--	--
383754080050501	06-19-03	--	--	--	--	--	--	--	--	--	--	--
392538078510301	06-24-03	--	--	--	--	--	--	--	--	--	--	--
392014078551801	06-24-03	--	--	--	--	--	--	--	--	--	--	--
392304078512901	06-25-03	--	--	--	--	--	--	--	--	--	--	--
391137079160401	06-25-03	--	--	--	--	--	--	--	--	--	--	--
393106078513401	06-26-03	<.022	<.011	<.01	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02
393258078505301	06-26-03	--	--	--	--	--	--	--	--	--	--	--
384009081530401	07-01-03	--	--	--	--	--	--	--	--	--	--	--
383414081154901	07-02-03	--	--	--	--	--	--	--	--	--	--	--
383258081080901	07-02-03	--	--	--	--	--	--	--	--	--	--	--
384530080140801	07-07-03	--	--	--	--	--	--	--	--	--	--	--
382525080005601	07-08-03	--	--	--	--	--	--	--	--	--	--	--
382324080014101	07-08-03	--	--	--	--	--	--	--	--	--	--	--
382435080072301	07-09-03	--	--	--	--	--	--	--	--	--	--	--
383235080020701	07-09-03	--	--	--	--	--	--	--	--	--	--	--
375509081494301	07-10-03	--	--	--	--	--	--	--	--	--	--	--
381106081504601	07-10-03	--	--	--	--	--	--	--	--	--	--	--
375704081263101	07-15-03	--	--	--	--	--	--	--	--	--	--	--
375545081212701	07-15-03	--	--	--	--	--	--	--	--	--	--	--

GROUND-WATER QUALITY

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL, AND MISCELLANEOUS SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Station number	Date	Thio- bencarb water fltrd 0.7u GF ug/L (82681)	Tri- allate, water, fltrd 0.7u GF ug/L (82678)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)	1,1,1- Tri- chloro- ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di- chloro- ethane, water unfltrd ug/L (34496)	1,1-Di- chloro- ethene, water, unfltrd ug/L (34501)	1,2-Di- chloro- benzene water unfltrd ug/L (34536)	1,2-Di- chloro- ethane, water, unfltrd ug/L (32103)	1,2-Di- chloro- propane water unfltrd ug/L (34541)	1,3-Di- chloro- benzene water unfltrd ug/L (34566)
381950081104601	06-09-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
380954081552001	06-10-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
384511081591701	06-11-03	<.005	<.002	<.009	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
384449082010301	06-11-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
384322081580101	06-12-03	<.005	<.002	<.009	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
384359081582401	06-12-03	<.005	<.002	<.009	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
383807080343801	06-17-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
383907080232101	06-17-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
385619079573801	06-18-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
390131080032201	06-18-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
383007080030101	06-19-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
383754080050501	06-19-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
392538078510301	06-24-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
392014078551801	06-24-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
392304078512901	06-25-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
391137079160401	06-25-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
393106078513401	06-26-03	<.005	<.002	<.009	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
393258078505301	06-26-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
384009081530401	07-01-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
383414081154901	07-02-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
383258081080901	07-02-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
384530080140801	07-07-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
382525080005601	07-08-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
382324080014101	07-08-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
382435080072301	07-09-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
383235080020701	07-09-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
375509081494301	07-10-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
381106081504601	07-10-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
375704081263101	07-15-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1
375545081212701	07-15-03	--	--	--	<.1	<.1	<.1	<.1	<.1	<.2	<.1	<.1

GROUND-WATER QUALITY

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL, AND MISCELLANEOUS SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Station number	Date	1,4-Di-chloro-benzene water unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unf ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water unfltrd ug/L (34371)
381950081104601	06-09-03	<.1	<.1	**.2**	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
380954081552001	06-10-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
384511081591701	06-11-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
384449082010301	06-11-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
384322081580101	06-12-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
384359081582401	06-12-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
383807080343801	06-17-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
383907080232101	06-17-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
385619079573801	06-18-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
390131080032201	06-18-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
383007080030101	06-19-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
383754080050501	06-19-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
392538078510301	06-24-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
392014078551801	06-24-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
392304078512901	06-25-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
391137079160401	06-25-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
393106078513401	06-26-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
393258078505301	06-26-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
384009081530401	07-01-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
383414081154901	07-02-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	**2.0**	<.1
383258081080901	07-02-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
384530080140801	07-07-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
382525080005601	07-08-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
382324080014101	07-08-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
382435080072301	07-09-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
383235080020701	07-09-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
375509081494301	07-10-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
381106081504601	07-10-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
375704081263101	07-15-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1
375545081212701	07-15-03	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<.2	<.2	<.1

GROUND-WATER QUALITY

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL, AND MISCELLANEOUS SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Station number	Date	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta- + para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)
381950081104601	06-09-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
380954081552001	06-10-03	<.2	<.2	<.1	<.1	<.1	**3.5**	<.1	<.2	<.1	<.1	<.2
384511081591701	06-11-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
384449082010301	06-11-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
384322081580101	06-12-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
384359081582401	06-12-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
383807080343801	06-17-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
383907080232101	06-17-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
385619079573801	06-18-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
390131080032201	06-18-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
383007080030101	06-19-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
383754080050501	06-19-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
392538078510301	06-24-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
392014078551801	06-24-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
392304078512901	06-25-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
391137079160401	06-25-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
393106078513401	06-26-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
393258078505301	06-26-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
384009081530401	07-01-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
383414081154901	07-02-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
383258081080901	07-02-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
384530080140801	07-07-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
382525080005601	07-08-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
382324080014101	07-08-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
382435080072301	07-09-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
383235080020701	07-09-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
375509081494301	07-10-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
381106081504601	07-10-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
375704081263101	07-15-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2
375545081212701	07-15-03	<.2	<.2	<.1	<.1	<.1	<.2	<.1	<.2	<.1	<.1	<.2

GROUND-WATER QUALITY

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL, AND MISCELLANEOUS SITES--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Station number	Date	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)	Rn-222, water, unfltrd pCi/L (82303)
381950081104601	06-09-03	<.1	<.2	.8	<.2	110
380954081552001	06-10-03	<.1	<.2	<.1	<.2	70
384511081591701	06-11-03	<.1	<.2	<.1	<.2	940
384449082010301	06-11-03	<.1	<.2	<.1	<.2	3200
384322081580101	06-12-03	<.1	<.2	<.1	<.2	90
384359081582401	06-12-03	<.1	<.2	<.1	<.2	3100
383807080343801	06-17-03	<.1	<.2	<.1	<.2	70
383907080232101	06-17-03	<.1	<.2	<.1	<.2	20
385619079573801	06-18-03	<.1	<.2	<.1	<.2	30
390131080032201	06-18-03	<.1	<.2	<.1	<.2	40
383007080030101	06-19-03	<.1	<.2	<.1	<.2	380
383754080050501	06-19-03	<.1	<.2	<.1	<.2	70
392538078510301	06-24-03	<.1	<.2	<.1	<.2	60
392014078551801	06-24-03	<.1	<.2	<.1	<.2	70
392304078512901	06-25-03	<.1	<.2	<.1	<.2	90
391137079160401	06-25-03	<.1	<.2	<.1	<.2	320
393106078513401	06-26-03	<.1	<.2	<.1	<.2	800
393258078505301	06-26-03	<.1	<.2	<.1	<.2	700
384009081530401	07-01-03	<.1	<.2	<.1	<.2	590
383414081154901	07-02-03	<.1	<.2	<.1	<.2	790
383258081080901	07-02-03	<.1	<.2	<.1	<.2	260
384530080140801	07-07-03	<.1	<.2	<.1	<.2	50
382525080005601	07-08-03	<.1	<.2	<.1	<.2	220
382324080014101	07-08-03	<.1	<.2	<.1	<.2	210
382435080072301	07-09-03	<.1	<.2	<.1	<.2	1100
383235080020701	07-09-03	<.1	<.2	<.1	<.2	110
375509081494301	07-10-03	<.1	<.2	<.1	<.2	60
381106081504601	07-10-03	<.1	<.2	<.1	<.2	40
375704081263101	07-15-03	<.1	<.2	<.1	<.2	70
375545081212701	07-15-03	<.1	<.2	<.1	<.2	80

< Actual value is known to be less than the value shown
E Estimated value

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A

B

C

D

E

F

G

Conversion Factors

Multiply	By	To obtain
	Length	
inch (in.)	2.54×10^{1}	millimeter (mm)
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter (m)
mile (mi)	1.609×10^{0}	kilometer (km)
	Area	
acre	4.047×10^{3}	square meter (m^2)
	4.047×10^{-1}	square hectometer (hm^2)
	4.047×10^{-3}	square kilometer (km^2)
square mile (mi^2)	2.590×10^{0}	square kilometer (km^2)
	Volume	
gallon (gal)	3.785×10^{0}	liter (L)
	3.785×10^{-3}	cubic meter (m^3)
	3.785×10^{0}	cubic decimeter (dm^3)
million gallons (Mgal)	3.785×10^{3}	cubic meter (m^3)
	3.785×10^{-3}	cubic hectometer (hm^3)
cubic foot (ft^3)	2.832×10^{-2}	cubic meter (m^3)
	2.832×10^{1}	cubic decimeter (dm^3)
cubic-foot-per-second-per-day [(ft^3/s/d]	2.447×10^{3}	cubic meter (m^3)
	2.447×10^{-3}	cubic hectometer (hm^3)
acre-foot (acre-ft)	1.223×10^{3}	cubic meter (m^3)
	1.223×10^{-3}	cubic hectometer (hm^3)
	1.223×10^{-6}	cubic kilometer (km^3)
	Flow rate	
cubic foot per second (ft^3/s)	2.832×10^{1}	liter (L/s)
	2.832×10^{-2}	cubic meter per second (m^3/s)
	2.832×10^{1}	cubic decimeter per second (dm^3/s)
gallon per minute (gal/min)	6.309×10^{-2}	liter per second (L/s)
	6.309×10^{-5}	cubic meter per second (m^3/s)
	6.309×10^{-2}	cubic decimeter per second (dm^3/s)
million gallons per day (Mgal/d)	4.381×10^{-2}	cubic meter per second
	4.381×10^{1}	cubic decimeter per second (dm^3/s)
	Mass	
ton, short (2,000 lb)	9.072×10^{-1}	megagram (Mg) or metric ton

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$°F = (1.8 \times °C) + 32$$

Ward and others—**Water Resources Data, West Virginia, Water Year 2003**—WV-03-1

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