LITTLE COLORADO RIVER BASIN

09398500 CLEAR CREEK BELOW WILLOW CREEK, NEAR WINSLOW, AZ

LOCATION.--Lat 34°40'03", long 111°00'25", in SW$^1/_4$SE$^1/_4$ sec.19, T.15 N., R.13 E., Coconino County, Hydrologic Unit 15020008, in Apache-Sitgreaves National Forest, on right bank 2 mi downstream from Willow Creek and 30 mi southwest of Winslow.

DRAINAGE AREA.--317 mi^2.

PERIOD OF RECORD.--June 1947 to September 1991 (discontinued).

REVISED RECORDS.--WDR AZ-88-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,957 ft above sea level, from Topographic Division by photogrammetry.

REMARKS.--No estimated daily discharges. Records good. Flow is partially controlled by Blue Ridge Reservoir (usable capacity, 15,000 acre-ft) about 20 mi upstream. (See sta 09398300.) Diversion to East Verde River from Blue Ridge Reservoir. (See sta 09507580.)

AVERAGE DISCHARGE (unadjusted for diversion or storage).--44 years, 82.0 ft^3/s, 59,410 acre-ft/yr; median of yearly mean discharges, 56 ft^3/s, 40,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,700 ft^3/s Dec. 18, 1978, gage height, 22.32 ft, from rating curve extended above 6,000 ft^3/s; no flow at times in most years.

Annual peak discharges

Water year	Date	Annual peak discharge (ft^3/s)	Discharge codes	Water year	Date	Annual peak discharge (ft^3/s)	Discharge codes
1948	04-12-48	1,810		1971	08-27-71	1,180	UR
1949	04-15-49	1,990		1972	12-26-71	5,840	UR
1950	02-28-50	1,090		1973	10-20-72	8,190	UR
1951	08-29-51	8,090		1974	03-21-74	589	UR
1952	01-18-52	16,400		1975	04-26-75	920	UR
1953	03-11-53	497		1976	02-09-76	4,170	UR
1954	03-23-54	5,730		1977	04-09-77	353	UR
1955	06-14-55	1,220		1978	03-01-78	10,500	UR
1956	03-26-56	198		1979	12-18-78	[1]19,700	UR
1957	01-10-57	8,880		1980	02-20-80	8,140	UR
1958	03-22-58	2,920		1981	04-08-81	250	UR
1959	08-20-59	296		1982	03-12-82	5,230	UR
1960	12-25-59	2,770		1983	04-25-83	2,020	UR
1961	04-05-61	1,080		1984	12-27-83	2,130	UR
1962	02-13-62	2,240		1985	03-12-85	4,750	UR
1963	02-11-63	403		1986	11-26-85	2,570	UR
1964	04-16-64	1,210		1987	04-12-87	1,070	UR
1965	01-07-65	5,600	UR	1988	11-01-87	1,270	UR
1966	12-30-65	13,100	UR	1989	03-11-89	602	UR
1967	12-07-66	9,970	UR	1990	04-06-90	194	UR
1968	04-02-68	1,840	UR	1991	04-08-91	2,770	UR
1969	01-26-69	5,550	UR	1993	01-08-93	29,100	UR
1970	09-06-70	15,800	UR				

[1]Highest since 1939

Discharge rating table developed March 1990

Gage height (ft)	Discharge (ft^3/s)	Gage height (ft)	Discharge (ft^3/s)
5.0	133	23.0	20,300
8.0	890	26.0	27,260
11.0	2,760	29.0	35,360
14.0	5,600	32.0	44,630
17.0	9,750	35.0	55,110
20.0	14,600	39.0	71,000

09398500 CLEAR CREEK BELOW WILLOW CREEK, NEAR WINSLOW, AZ--Continued

Basin characteristics

Main channel slope (ft/mi)	Stream length (mi)	Mean basin elevation (ft)	Forested area (percent)	Soil index	Mean annual precipitation (in)	Rainfall intensity, 24-hour	
						2-year (in)	50-year (in)
26.0	41.0	7,100	100	3.0	25.8	2.6	4.7

LITTLE COLORADO RIVER BASIN

09398500 CLEAR CREEK BELOW WILLOW CREEK, NEAR WINSLOW, AZ--Continued

MEAN MONTHLY AND ANNUAL DISCHARGES 1948-91

MONTH	MAXIMUM (FT3/S)	MINIMUM (FT3/S)	MEAN (FT3/S)	STANDARD DEVIATION (FT3/S)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	359	0.00	17	61	3.7	1.7
NOVEMBER	202	0.00	24	50	2.1	2.4
DECEMBER	720	0.00	71	148	2.1	7.2
JANUARY	576	0.00	60	129	2.1	6.1
FEBRUARY	721	0.00	89	138	1.6	9.0
MARCH	1,250	4.0	253	252	1.0	25.6
APRIL	1,330	0.00	370	372	1.0	37.5
MAY	1,050	0.00	76	176	2.3	7.7
JUNE	39	0.00	1.3	5.9	4.4	0.1
JULY	4.3	0.00	0.24	0.88	3.6	0.0
AUGUST	228	0.00	15	47	3.1	1.5
SEPTEMBER	218	0.00	11	40	3.7	1.1
ANNUAL	279	5.7	82	67	0.82	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1949-91

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN FT3/S, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10# 10%	20# 5%	50# 2%	100# 1%
1						
3						
7						
14						
30						
60						
90	0.00	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00
183	0.75	0.00	0.00	0.00	0.00	0.00

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD 1948-91

DISCHARGE, IN FT3/S, FOR INDICATED RECURRENCE INTERVAL IN YEARS, AND EXCEEDANCE PROBABILITY, IN PERCENT					
2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
2,360	6,820	11,700	20,400	29,000	39,700

WEIGHTED SKEW (LOGS)= -0.15
MEAN (LOGS)= 3.36
STANDARD DEV. (LOGS)= 0.56

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1948-91

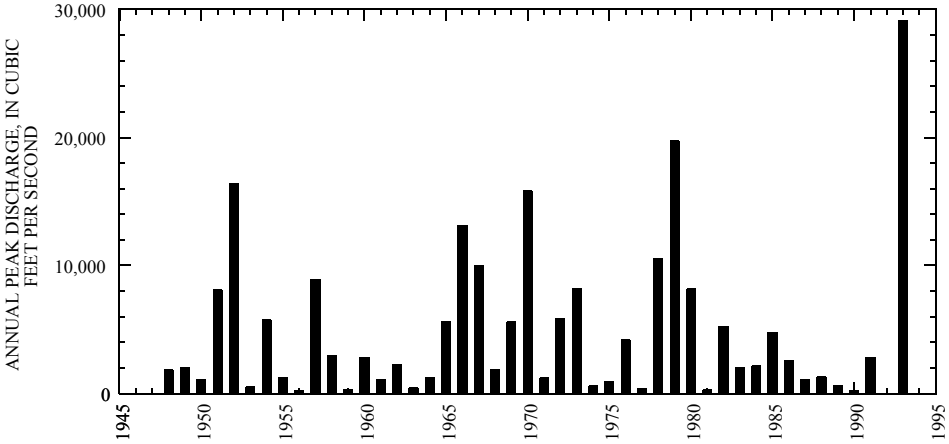
PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN FT3/S, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10# 10%	25# 4%	50# 2%	100# 1%
1	1,580	3,730	5,620	8,440	10,800	13,400
3	1,220	2,590	3,650	5,080	6,160	7,250
7	893	1,680	2,210	2,840	3,270	3,660
15	605	1,120	1,470	1,910	2,210	2,510
30	420	825	1,140	1,580	1,920	2,280
60	267	548	777	1,100	1,370	1,650
90	203	428	613	878	1,090	1,320

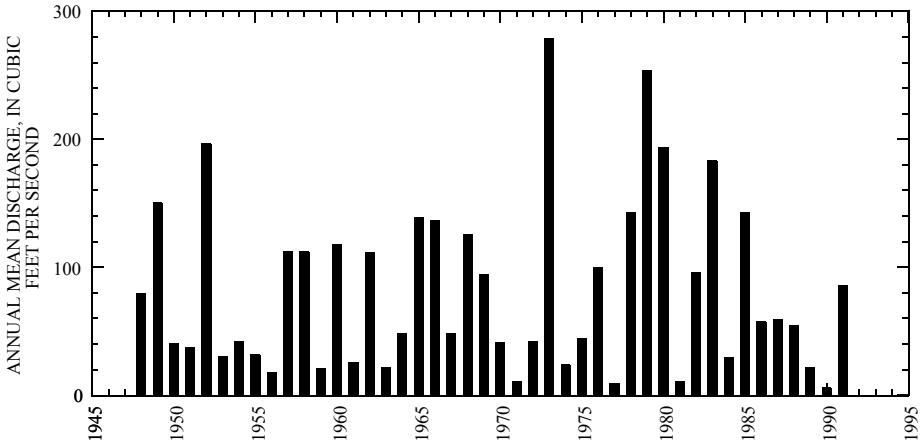
DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1948-91

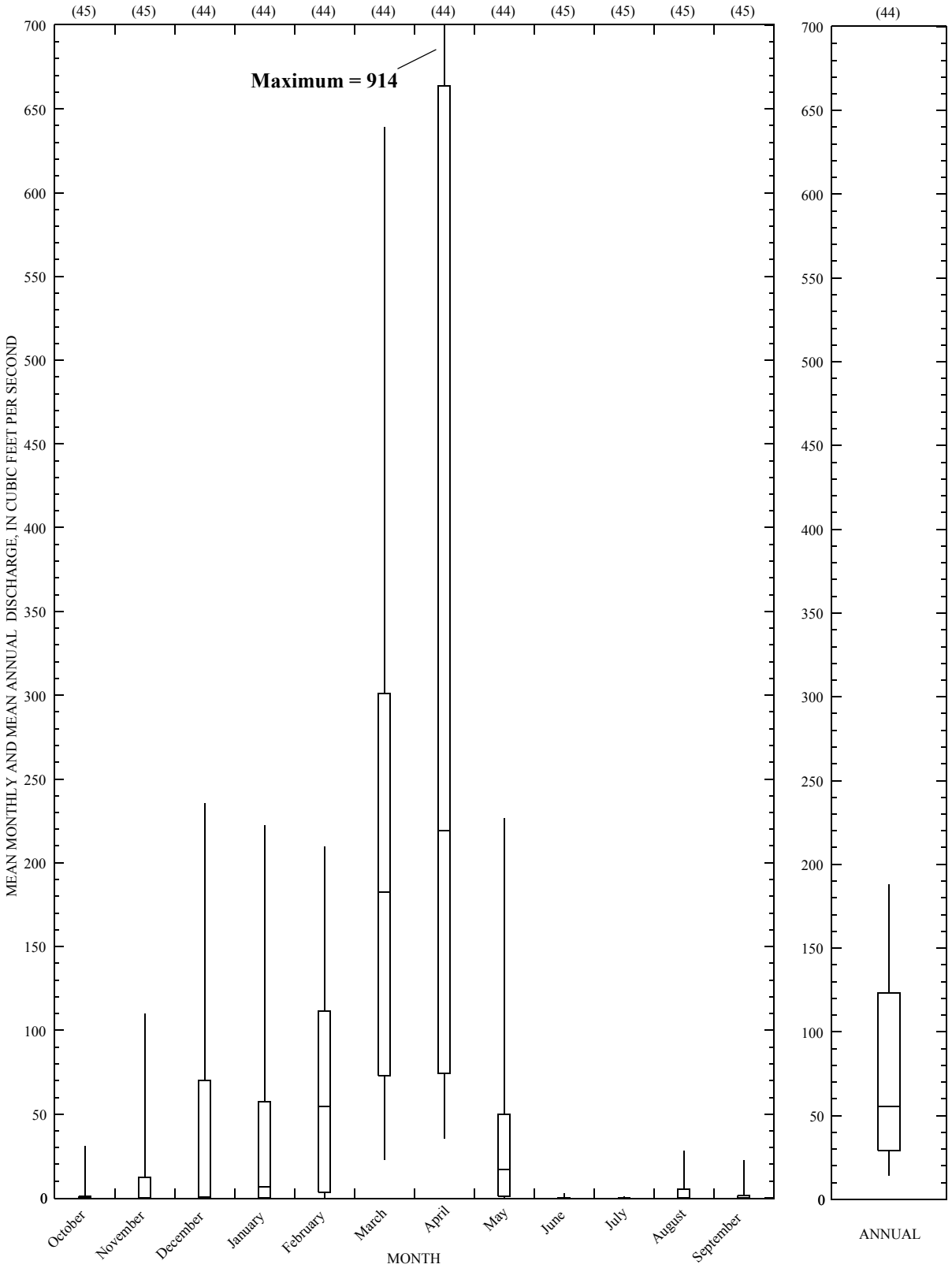
DISCHARGE, IN FT3/S, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
1,360	485	186	99	59	14	1.8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Reliability of values in column is uncertain, and potential errors are large.

09398500 CLEAR CREEK BELOW WILLOW CREEK, NEAR WINSLOW, AZ--Continued



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Maximum = 914
MEAN MONTHLY AND MEAN ANNUAL DISCHARGE, IN CUBIC FEET PER SECOND
0
50
100
150
200
250
300
350
400
450
500
550
600
650
700
October
November
December
January
February
March
April
May
June
July
August
September
MONTH
ANNUAL