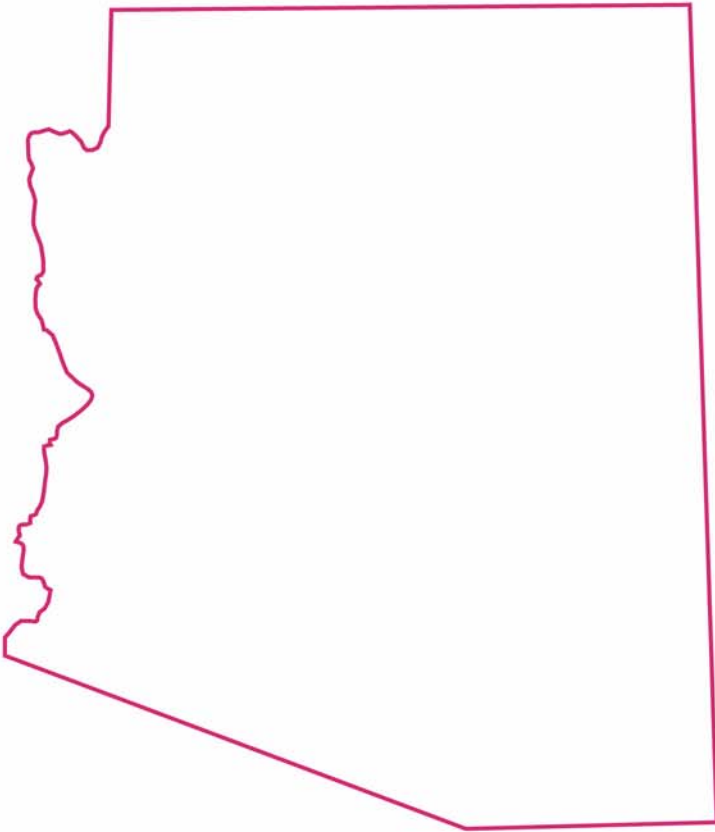


Water Resources Data Arizona Water Year 2002

Water-Data Report AZ-02-1



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



Prepared in cooperation with the
State of Arizona
and with other agencies

CALENDAR FOR WATER YEAR 2002

2001

OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22
28	29	30	31				25	26	27	28	29	30		23	24	25	26	27	28	29
														30	31					

2002

JANUARY							FEBRUARY							MARCH						
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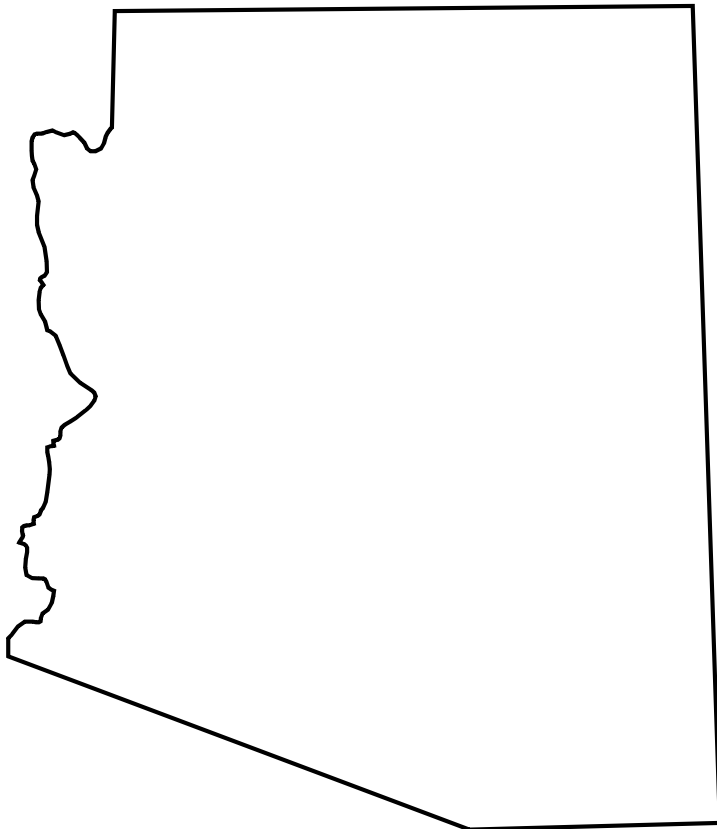
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14	15	16	17	18	19	20	11	12	13	14	15	16	17	15	16	17	18	19	20	21
21	22	23	24	25	26	27	18	19	20	21	22	23	24	22	23	24	25	26	27	28
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U.S. Department of the Interior
U.S. Geological Survey

Water Resources Data Arizona Water Year 2002

By H.F. McCormack, G.G. Fisk, N.R. Duet, D.W. Evans,
W.P. Roberts, and N.K. Castillo

Water-Data Report AZ-02-1



Prepared in cooperation with the
State of Arizona and with other agencies



UNITED STATES DEPARTMENT OF THE INTERIOR

GALE A. NORTON, Secretary

U.S. GEOLOGICAL SURVEY

Charles G. Groat, Director

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U.S. Geological Survey
520 North Park Avenue, Suite 221
Tucson, Arizona 85719-5035

2003

PREFACE

This volume of the annual hydrologic data report of Arizona is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water 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 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 Survey policy and established guidelines. The following individuals contributed significantly to the collection, processing, and tabulation of the data:

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This report was prepared in cooperation with the State of Arizona and with other agencies, under the general supervision of Christopher F. Smith, Data Chief, Arizona.

REPORT DOCUMENTATION PAGE*Form Approved*
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE April 2003	3. REPORT TYPE AND DATES COVERED Annual--Oct 1, 2001 to Sept. 30, 2002	
4. TITLE AND SUBTITLE Water Resources Data for Arizona, Water Year 2002			5. FUNDING NUMBERS	
6. AUTHOR(S) H.F. McCormack, G.G. Fisk, N.R. Duet, D.W. Evans, W.P. Roberts and N.K. Castillo				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Geological Survey, WRD 520 North Park Avenue, Suite 221 Tucson, Arizona 85719			8. PERFORMING ORGANIZATION REPORT NUMBER USGS-WDR-AZ-02-1	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Geological Survey, WRD 520 North Park Avenue, Suite 221 Tucson, Arizona 85719			10. SPONSORING / MONITORING AGENCY REPORT NUMBER USGS-WDR-AZ-02-1	
11. SUPPLEMENTARY NOTES Prepared in cooperation with the State of Arizona and with other agencies.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT No restriction on distribution. This report may be purchased from: National Technical Information Service, Springfield, VA 22161			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) The Arizona District water data report includes records on both surface water and ground water in the State for water year 2002. Specifically, it contains: (1) discharge records for 201 streamflow-gaging stations, for 29 crest-stage, partial-record streamflow stations, and 48 miscellaneous sites; (2) stage and (or) content only records for 10 lakes and reservoirs; (3) water-quality records for 21 streamflow-gaging stations and 65 wells; and (4) water levels for 18 wells.				
14. SUBJECT TERMS *Arizona, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediment, Water Temperatures, Sampling sites, Water levels, Water analyses.			15. NUMBER OF PAGES 337 pages	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT UNCLASSIFIED	

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SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS
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[Letters after station name designate type of data: (c) chemical; (d) discharge; (e) elevation; (g) gage height; (m) microbiological (bacteria); (n) turbidity; (p) pesticide; (q) specific conductance (daily); (r) radiochemical; (s) suspended sediment; (t) water temperature (daily); (v) contents]

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DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

The following continuous-record streamflow stations in Arizona have been discontinued or converted to partial-record stations. Daily streamflow records were collected and published for the period of record shown for each station.

Station name	Station number	Drainage area, in square miles	Period of record (water years)
Lee Valley Creek above Lee Valley Reservoir, near Greer, AZ	09383200	a1.3	1966–72
Lee Valley tributary near Greer, AZ.....	09383220	a.5	1966–72
Lee Valley Creek below Lee Valley Reservoir, near Greer, AZ.....	09383250	a1.9	1966–72
Filler ditch at Greer, AZ	09383300	---	1960–77
Little Colorado River at Greer, AZ	09383400	29.1	1960–82
Nutrioso Creek above Nelson Reservoir, near Springerville, AZ	09383500	83.3	1967–82
Nutrioso Creek below Nelson Reservoir, near Springerville, AZ.....	09383550	86.7	1967–82
Lyman Reservoir near St. Johns, AZ.....	09384500	b811	1940–78
Lyman Canal below Lyman Reservoir, near St. Johns, AZ.....	09385000	---	1950–80
Little Colorado River below Lyman Reservoir, near St. Johns, AZ.....	09385500	b811	1941–80
Little Colorado River at St. Johns, AZ.....	09386000	b964	1906–7, 1909, 1929–33, 1935–40
Little Colorado River above Zuni River, near Hunt, AZ.....	09386500	b3,741	1940–72
Colorado River above Little Colorado River near Desert View, AZ.....	09383100	114,272	1983, 1985–86, 1989–2001
Little Colorado River near Hunt, AZ	09388000	b6,383	1929–33, 1940–72
Silver Creek near Shumway, AZ.....	09390000	b172	1942–55
Show Low Creek at Show Low, AZ.....	09392500	90.2	1944–55
Silver Creek at Snowflake, AZ.....	09393000	b488	1906
Cottonwood Wash at Snowflake, AZ	09393400	262	1981–84
Silver Creek near Snowflake, AZ.....	09393500	925	1950–95
Silver Creek near Woodruff, AZ	09394000	b966	1929–33, 1935–52
Puerco River near Church Rock, NM	09395350	205	1977–82, 1989–91
Puerco River near Lupton, AZ	09395650	a1,050	1971–72
Black Creek near Lupton, AZ	09395900	494	1964–72, 1974–82
Black Creek below West Fork Black Creek, near Houck, AZ	09395990	628	1989–91
Puerco River near Adamana, AZ	09396500	b2,654	1940–49
Little Colorado River at Holbrook, AZ.....	09397000	b11,462	1905–7, 1949–73
Chevelon Creek near Winslow, AZ.....	09398000	b785	1905–6, 1915–19, 1929–72
Clear Creek below Willow Creek, near Winslow, AZ.....	09398500	317	1947–91
Clear Creek near Winslow, AZ.....	09399000	621	1906, 1929–82
Jacks Canyon Creek near Winslow, AZ.....	09399400	295	1969–72

See footnotes at end of table.

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS—Continued

Station name	Station number	Drainage area, in square miles	Period of record (water years)
Salt Creek near Winslow, AZ.....	09399500	287	1939–41
Little Colorado River near Winslow, AZ.....	09400000	a16,100	1954–56
Rio de Flag at Flagstaff, AZ.....	09400600	51.0	1955–60
Little Colorado River at Grand Falls, AZ.....	09401000	b21,068	1925–60, 1989–94
Coal Mine Wash tributary near Kayenta, AZ.....	09401226	.62	1977–81
Coal Mine Wash tributary No. 2 near Kayenta, AZ.....	09401229	.06	1977–79
Coal Mine Wash at mouth, near Shonto, AZ.....	09401239	137	1978–82
Moenkopi Wash near Moenkopi, AZ.....	09401250	a1,650	1973–76
Moenkopi Wash near Tuba City, AZ.....	09401280	1,904	1926–41
Moenkopi Wash near Tuba City, AZ.....	09401400	2,492	1941–53, 1965–78
Moenkopi Wash near Cameron, AZ.....	09401500	2,662	1953–65
Little Colorado above mouth near Desert View, AZ.....	09402300	---	1990–93
Bright Angel Creek near Grand Canyon, AZ.....	09403000	101	1923–74
Pipe Springs above Tonto Trail near Grand Canyon, AZ.....	09403010	1.70	1994–96
Sediment Tank at Indian Garden near Grand Canyon, AZ.....	09403012	---	1994–06
Garden Creek below Indian Garden near Grand Canyon, AZ.....	09403015	---	1994–96
Kanab Creek near Fredonia, AZ.....	09403780	1,085	1963–80
Kanab Creek above mouth near Supai, AZ.....	09403850	---	1990–93
Dogtown Wash above Dogtown Reservoir near Williams, AZ.....	09403990	4.69	1964–66
Dogtown Wash above Kaibab Reservoir, near Williams, AZ.....	09404020	15.4	1964–66
Cataract Creek near Williams, AZ.....	09404040	46.4	1965–72
Havasu Creek above Havasu Falls near Supai, AZ.....	09404112	2,898	1995–2000
Havasu Creek above mouth near Supai, AZ.....	09404115	---	1990–97
Colorado River above National Canyon near Supai, AZ.....	09404120	147,931	1983–96
Beaver Dam Wash at Beaver Dam, AZ.....	09414900	579	1993–98
Colorado River near Topock, AZ.....	09424000	ab176,300	1917–82
Cottonwood Wash No. 1 near Kingman, AZ.....	09424200	143	1964–78
Francis Creek near Bagdad, AZ.....	09424432	134	1985–93
Burro Creek at old U.S. 93 bridge near Bagdad, AZ.....	09424447	b611	1980–93
Kirkland Creek near Kirkland, AZ.....	09424470	109	1973–83
Date Creek near Congress, AZ.....	09425000	127	1939–43
Santa Maria River near Alamo, AZ.....	09425500	1,439	1939–66
Bill Williams River at Planet, AZ.....	09426500	5,054	1913–15, 1928–46
Tyson Wash at Quartzsite, AZ.....	09428900	421	1973–74
Colorado River at Palo Verde Dam, AZ–CA.....	09429010	ab186,200	1969–88
Cibola Lake inlet near Cibola, AZ.....	09429280	---	1975–89
Cibola Lake outlet near Cibola, AZ.....	09429290	---	1975–89
Colorado River below Cibola Valley, AZ.....	09429300	ab187,800	1956–88
Gila River at New Mexico–Arizona State Line, near Virden, NM.....	09438000	3,349	1939–49
Blue River near Clifton, AZ.....	09444200	506	1967–91
Willow Creek near Point of Pines, near Morenci, AZ.....	09445500	102	1944–67
Willow Creek near Double Circle Ranch, near Morenci, AZ.....	09446000	149	1944–67
Eagle Creek near Double Circle Ranch, near Morenci, AZ.....	09446500	377	1944–67
Brown Canal St. Head of Safford Valley, near Solomon, AZ.....	09449500	---	1920–32
Gila River near Solomon, AZ.....	09451000	7,896	1914–32 1940–50

See footnotes at end of table.

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS—Continued

Station name	Station number	Drainage area, in square miles	Period of record (water years)
Cave Creek near Paradise, AZ	09454500	a39	1919–25
Cave Creek Canal near Paradise, AZ	09455000	---	1919–25
East Turkey Creek at Paradise, AZ	09455500	a8.2	1919–25
San Simon River near San Simon, AZ	09456000	814	1919–25, 1931–33, 1935–41
San Simon River below fandrop detention dam, near Bowie, AZ	09456200	1,400	1955–59
Gold Gulch below Creighton detention dam, near Bowie, AZ	09456600	104	1956–59
Gold Gulch below H–X detention dam, near Bowie, AZ	09456700	144	1956–59
San Simon River at Tanque, AZ	09456800	1,953	1957–59
Goat Well Wash below drop structure, near Solomon, AZ	09456900	77.2	1956–59
San Simon River near Solomon, AZ	09457000	2,192	1931–32, 1935–82
Marijilda Wash near Safford, AZ	09458050	10.9	1971–78
Deadman Creek near Safford, AZ	09458200	4.78	1989–93
Gila River at Safford, AZ	09458500	10,459	1940–49, 1956–65
Frye Creek at Thatcher, AZ	09460200	24.3	1963–74
Gila River at Black Point, near Geronimo, AZ	09466000	11,329	1943–45
Gila River near Bylas, AZ	09466300	11,380	1965–70
Gila River near Calva, AZ	09467100	11,550	1965–70
Gila River at Winkelman, AZ	09470000	13,268	1917–18, 1941–80, 1984–94
Huachuca Canyon near Fort Huachuca, AZ	09471300	3.24	1961–64
San Pedro River at Fairbank, AZ	09471500	1,672	1926–28
St. David ditch near St. David, AZ	09471560	---	1967–72
Pomerene Canal near St. David, AZ	09471590	---	1967–72
San Pedro River near Benson, AZ	09471800	2,490	1966–76
San Pedro River near Redington, AZ	09472000	2,927	1943–47, 1950–98
Peck Canyon tributary near Redington, AZ	09472100	8.02	1967–72
San Pedro River near Mammoth, AZ	09472500	3,583	1931–41
Aravaipa Creek near Feldman, AZ	09473020	557	1919–21
San Pedro River below Aravaipa Creek, near Mammoth, AZ	09473100	4,343	1979–83
San Pedro River near Winkelman, AZ	09473400	4,430	1962–65
San Pedro River at Winkelman, AZ	09473500	4,453	1966–78
Gila River at the Buttes, AZ	09474500	a18,300	1898–99
Gila River near Sacaton, AZ	09478350	---	1995–98
Queen Creek at Whitlow Dam site (Whitlow's Ranch), near Superior, AZ	09478500	144	1948–59
Queen Creek near Florence Junction, AZ	09479000	192	1939–41
Queen Creek tributary at Apache Junction, AZ	09479200	.51	1961–68
Gila River near Laveen, AZ	09479500	20,615	1940–95
Nogales Wash at Nogales, AZ	09481000	a37	1932–34
Sonoita Creek near Patagonia, AZ	09481500	209	1930–33, 1935–72
Airport Wash at Tucson, AZ	09482400	23.0	1965–81

See footnotes at end of table.

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS—Continued

Station name	Station number	Drainage area, in square miles	Period of record (water years)
Railroad Wash at Tucson, AZ	09482950	2.3	1975–83
Tucson Arroyo at Vine Avenue, Tucson, AZ	09483000	8.2	1944–81
High School Wash at Tucson, AZ	09483010	.95	1973–83
Tanque Verde Creek near Tucson, AZ	09483100	43.0	1959–74
Sabino Creek near Mount Lemmon, AZ.....	09483300	3.19	1951–59
Bear Creek near Tucson, AZ.....	09484200	16.3	1959–74
Cienega Creek near Pantano, AZ	09484560	289	1968–75
Davidson Canyon Wash near Vail, AZ.....	09484590	50.5	1968–75
Atterbury West tributary at Tucson, AZ.....	09485390	4.97	1975–83
Pantano Wash at (near) Tucson, AZ.....	09485500	602	1940–41
Arcadia Wash at Tucson, AZ	09485550	2.72	1975–83
Rillito Creek near Tucson, AZ	09485850	892	1913–75
Cañada del Oro near Oracle Junction, AZ.....	09486100	42.3	1985–91
Cañada del Oro near Tucson, AZ.....	09486300	250	1965–78
Santa Cruz River at Ina Road, near Tucson, AZ	09486490	3,489	1991–93
Santa Cruz River near Rillito, AZ.....	09486510	3,559	1991
Arivaca Wash near Arivaca, AZ.....	09486600	78.4	1967–72
Santa Rosa Wash at Gu Komelik, near Sells, AZ	09487500	629	1954–59
Kohatk Wash near Chiapuk, near Sells, AZ.....	09488000	185	1954–59
Santa Rosa Wash near Vaiva Vo, near Sells, AZ.....	09488500	1,782	1954–80
Vekol Wash near Stanfield, AZ	09488650	150	1991–99
North Fork of East Fork Black River near Alpine, AZ.....	09489070	38.1	1965–78
Forest Service Gage, East For Weir, AZ.....	09489075	---	1973–80
North Fork Thomas Creek near Alpine, AZ	09489082	0.73	1986–91
Black River near Maverick, AZ	09489100	315	1962–82
Wacheta Creek at Maverick, AZ	09489200	14.8	1957–80
Big Bonito Creek near Fort Apache, AZ	09489700	119	1957–81
Turkey Creek near Fort Apache, AZ.....	09490000	12.7	1955–60
North Fork White River near Greer, AZ	09490800	a39	1965–78
North Fork White River near McNary, AZ	09491000	a66	1945–54, 1957–85
North Fork White River at Whiteriver, AZ	09492000	357	1916–22
Rock Creek near Fort Apache, AZ.....	09492500	20.3	1955–60
East Fork White River at Fort Apache, AZ.....	09493000	135	1912–20
White River at Fort Apache, AZ	09493500	499	1912–19, 1921–22
White River near Fort Apache, AZ	09494000	632	1917–98
Carrizo Creek above Corduroy Creek, near Show Low, AZ.....	09494300	225	1953–67
Corduroy Creek above Forestdale Creek, near Show Low, AZ.....	09494500	57.0	1952–61
Forestdale Creek near Show Low, AZ	09495500	33.4	1952–61
Corduroy Creek near Mouth, near Show Low, AZ	09496000	203	1951–75
Cibecue No. 1 tributary to Carrizo Creek, near Show Low, AZ.....	09496600	.099	1958–71
Cibecue No. 2 tributary to Carrizo Creek, near Show Low, AZ.....	09496700	.065	1958–71
Canyon Creek near Globe, AZ.....	09497850	316	1975–81
Cherry Creek near Young, AZ	09497900	62.1	1963–77
Tonto Creek near Gisela, AZ.....	09498800	430	1964–75
Rye Creek near Gisela, AZ	09498870	122	1965–85

See footnotes at end of table.

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS—Continued

Station name	Station number	Drainage area, in square miles	Period of record (water years)
Tonto Creek near Roosevelt, AZ.....	09499500	838	1913–40
Salt River at Roosevelt (at reservoir site) (nr Livingstone), AZ.....	09500500	5,824	1904–7
Salt River at McDowell, AZ.....	09502500	6,268	1904–9
Williamson Valley Wash near Paulden, AZ.....	09502800	255	1965–85
Willow Creek near Prescott, AZ.....	09503500	25.2	1932–37
Hell Canyon near Williams, AZ.....	09503720	14.9	1965–72
Volunteer Wash near Bellemont, AZ.....	09503800	b130	1965–72
Oak Creek at Sedona, AZ.....	09504430	233	1981–95
Verde River at Camp Verde, AZ.....	09505000	b4,215	1913–20
Rocky Gulch near Rimrock, AZ.....	09505220	1.4	1985–92
Red Tank Draw near Rimrock, AZ.....	09505250	49.4	1957–78
Montezuma Well Outlet near Rimrock, AZ.....	09505260	---	1977–92
Rattlesnake Canyon near Rimrock, AZ.....	09505300	24.6	1957–80
Beaver Creek at Camp Verde, AZ.....	09505500	433	1912–20
Verde River below Camp Verde, AZ.....	09505550	b4,653	1971–78
Verde River at Childs, near Camp Verde, AZ.....	09506500	b5,098	1913
East Verde River near Pine, AZ.....	09507600	6.34	1961–71
Webber Creek above West Fork Webber Creek, near Pine, AZ.....	09507700	4.79	1959–74
West Fork Webber Creek near Pine, AZ.....	09507800	4.07	1959–65
Webber Creek below West Fork Webber Creek, near Pine, AZ.....	09507900	9.63	1959–65
East Verde River near Payson, AZ.....	09507950	272	1961–65
Verde River below East Verde River, near Pine, AZ.....	09508000	b5,606	1934–41
Verde River above Bartlett Reservoir, near Cave Creek, AZ.....	09509000	b6,036	1938–45
West Fork Sycamore Creek above McFarland Canyon, near Sunflower, AZ.....	09510070	4.62	1965–74, 1982–86
West Fork Sycamore (Adler) Creek near Sunflower, AZ.....	09510080	9.82	1961–74
East Fork Sycamore Creek near Sunflower, AZ.....	09510100	4.52	1961–86
Sycamore Creek near Sunflower, AZ.....	09510150	52.3	1961–76
Camp Creek near Sunflower, AZ.....	09510170	2.6	1963–66
Rock Creek near Sunflower, AZ.....	09510180	15.2	1963–72
Salt River at Alma School Road, near Mesa, AZ.....	09512060	12,995	1981–86, 1992–93
Indian Bend Wash near Scottsdale, AZ.....	09512100	62	1961–84
Salt River at Jointhead Dam, near Phoenix, AZ.....	09512170	13,225	1977–80
Salt River tributary No. 2 at Phoenix, AZ.....	09512180	a.035	1963–65
Salt River at 24th Street at Phoenix, AZ.....	09512190	13,391	1989–92
Salt River tributary in South Mountain Park, Phoenix, AZ.....	09512200	1.75	1960–98
Cave Creek near Cave Creek, AZ.....	09512300	121	1958–67
Cave Creek at Phoenix, AZ.....	09512400	252	1958–90
Perry Canal near Mayer, AZ.....	09512495	588	1940–59
Sycamore Dam site total.....	09512501	588	1940–81
Turkey Creek near Cleator, AZ.....	09512600	89.4	1979–92
Boulder Creek near Rock Springs, AZ.....	09512830	37.8	1983–93
Humbug Creek near Castle Hot Springs, AZ.....	09512860	59.9	1983–94
Cottonwood Creek near Waddell Dam, AZ.....	09512970	9.28	1983–93
Agua Fria River at Waddell Dam, AZ.....	09513000	1,433	1911–24, 1933–91
Lake Pleasant at Waddell Dam, AZ.....	09513500	1,433	1928–91

See footnotes at end of table.

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS—Continued

Station name	Station number	Drainage area, in square miles	Period of record (water years)
Agua Fria at El Mirage, AZ	09513650	1628	1962–98
Agua Fria River tributary at Youngtown, AZ.....	09513700	.13	1961–68
New River at New River (near Black Canyon), AZ.....	09513800	84.6	1960–82
New River at Bell Road, near Peoria, AZ	09513835	185	1968–84 1990–93
New River near Glendale, AZ.....	09513910	323	1964–98
Agua Fria River at Avondale, AZ.....	09513970	2,066	1967–82
Buckeye Canal near Avondale, AZ	09514000	---	1953–71, 1996–2000
Gila River at U.S. Highway 85, near Buckeye, AZ	09514300	46,345	1979, 1989–92
Hassayampa River near Wagoner, AZ	09514500	77.9	1940–46
Hassayampa River at Walnut Grove, near Wagoner, AZ	09515000	106	1912–15, 1917–18, 1980–83
Hassayampa River at Box damsite, near Wickenburg, AZ	09515500	417	1938, 1946–82
Centennial Wash near Arlington, AZ.....	09517500	1,870	1961–79
Sauceda Wash near Gila Bend, AZ.....	09519760	126	1989–94
Gila River near Sentinel, AZ.....	09520000	51,610	1913–14
Rio Cornez near Ajo, AZ	09520170	243	1967–78
Gila River near Mohawk, AZ.....	09520360	55,430	1966, 1973–93
Gila River at mouth, near Yuma, AZ	09520700	57,950	1975–83
Gila River at mouth (flow past gage only)	09520701	---	1975–83
Colorado River at Yuma, AZ.....	09521000	ab246,500	1902–64
Colorado River and Pilot Knob wasteway (Colorado River) at Rockwood Gate, CA	09521500	ab246,600	1945–50
Colorado River at southerly international boundary, near San Luis, AZ	09522200	ab246,700	1960–85
Mittry Lake Outlet Channel near Yuma, AZ.....	09527900	---	1975–83 1985–89
Yuma Canal at Laguna Dam, AZ–CA.....	09528000	---	1910–48
Laguna Canal Wasteway, AZ	09528600	---	1960–97
North Gila Drain No. 3 near Yuma, AZ.....	09529050	---	1962–89
Fortuna Wasteway near Yuma, AZ.....	09529100	---	1961–89
Bruce Church Drain, AZ.....	09529200	---	1962–97
Wellton-Mohawk Main Outlet Drain above Gila River, AZ.....	09529350	---	1966–74
South Gila Drain No. 2 near Yuma, AZ.....	09529400	---	1961–89
Vamori Wash at International Boundary near Sells, AZ.....	09535295	250	1995–2000
Quitobaquito Spring near Lukeville	09535900	---	1982–89 1991–92
West Turkey Creek near Light, AZ.....	09536500	a19	1919–25
Whitewater Draw near Rucker, AZ.....	09537000	38.7	1919–25
Whitewater Draw (White, White Water River) near Douglas, AZ	09537500	1,023	1912–13, 1918–19, 1930–33, 1935–82

^a Approximately.^b Includes area that is probably noncontributing.

DISCONTINUED SURFACE-WATER QUALITY STATIONS

The following surface-water-quality stations in Arizona have been discontinued or converted to partial-record stations. Water-quality data (daily or periodic samples with collection frequency not less than quarterly) were collected and published for the period of record shown for each station. Discontinued project stations with less than 3 years of record are not included. Information regarding these stations may be obtained from the district Chief at the address given on the back of the title page of this report.

[Type of record: (C) chemical, (S) sediment, (T) temperature]

Station name	Station number	Drainage area , in square miles	Type of record	Period of record
Paria River at Lees Ferry, AZ.....	09382000	1,410	C,S,T	1942, 1947-76, 1978-79
Little Colorado River at Greer, AZ.....	09383400	29.1	C,S,T	1972-73, 1976-79, 1981-84, 1987-88
Little Colorado River abv Lyman Lake, near St. Johns, AZ	09384000	a706	C,S,T	1976-83
Little Colorado River abv Zion Reservoir, near St. Johns, AZ	09386030	1,007	C,T	1975-94
Zuni River above Black Rock Reservoir, NM.....	09386950	848	C	1978-92, 1993
Show Low Creek near Lakeside, AZ.....	09390500	68.6	C,S,T	1976-79
Cottonwood Creek at Snowflake, AZ.....	09393400	262	C,S,T	1982-84
Little Colorado River at Woodruff, AZ	09394500	a8,072	C,S,T	1905-06, 1950-57
Puerco River near Church Rock, NM.....	09395350	205	C,S,T	1979, 1988-91
Little Colorado River near Joseph City, AZ.....	09397300	12,384	C,S,T	1979-94
Little Colorado River at Grand Falls, AZ.....	09401000	a21,068	C,S,T	1991-94
Little Colorado River at Cameron, AZ.....	09401200	a23,119	C,S,T	1948-70, 1975-86, 1995
Moenkopi Wash near Moenkopi, AZ	09401250	---	C,T	1973-76
Moenkopi Wash at Moenkopi, AZ	09401260	1,629	C,S,T	1974-81
Little Colorado River near Cameron, AZ.....	09402000	26,459	C,S	1970-72; 1990-91
Colorado River near Grand Canyon, AZ.....	09402500	ab141,600	C,S,T	1925-88
Bright Angel Creek near Grand Canyon, AZ.....	09403000	101	C,T	1944-49, 1952-58, 1962-74
Kanab Creek near Fredonia, AZ.....	09403780	1,085	C,S,T	1964-73
Havasu Creek above the mouth, near Supai, AZ.....	09404115	3,020	C,T	1990-97
Las Vegas Wash near Henderson, NV	09419700	a2,125	C,T	1957-92

See footnotes at end of table.

DISCONTINUED SURFACE-WATER QUALITY STATIONS—Continued

Station name	Station number	Drainage area , in square miles	Type of record	Period of record
Las Vegas Wash above Three Kids Wash below Henderson, NV	09419753	b2,180	C,T	1988–92
Lake Mead at Hoover Dam, AZ	09421000	ab171,700	C,T	1941–62, 1964–85
Colorado River below Davis Dam, AZ	09423000	ab173,300	C,T	1969–87
Topock Marsh Outlet near Needles, CA.....	09423640	---	C,T	1980–81, 1983
Topock Marsh Outlet near Topock, AZ.....	09423650	---	C,T	1975–77
Colorado River near Topock, AZ	09424000	ab176,300	C,T	1925–27, 1952–62, 1969–82
Central Arizona Project Canal at MP 7.98 near Parker.....	09426700	---	C,M,P	1985–95
Central Arizona Project Canal at MP 162.3 at Phoenix	09427100	---	C,M,P,S	1985–95
Central Arizona Project Canal at MP 252 near Coolidge	09427300	---	C,M,P	1987–95
Colorado River Indian Reservation Main Canal near Parker, AZ.....	09428500	---	C,T	1970–83
Colorado River Indian Reservation Poston Canal Wasteway near Parker, AZ.....	09428510	---	C,T	1969–83
Palo Verde Canal near Blythe, CA	09429000	---	C,T	1970–85
Palo Verde Drain near Parker, AZ	09429030	---	C,T	*1962–68, 1969–83
Colorado River Indian Reservation Lower Main Drain near Parker, AZ.....	09429060	---	C,T	*1962–68, 1969–83
Colorado River below Palo Verde Dam, AZ	09429100	ab186,200	T	1956–66
Palo Verde Irrigation District Olive Lake Drain near Blythe, CA.....	09429130	---	C,T	*1963–65, 1969–81
Colorado River at Taylor Ferry, near Blythe, CA.....	09429188	ab187,700	C,T	1970–83
Palo Verde Irrigation District Outfall Drain near Palo Verde, CA	09429220	---	C,T	*1962–65, *1967–68, 1969–83
Palo Verde Irrigation District Anderson Drain near Palo Verde, CA	09429225	---	C,T	1969–81
Colorado River below Cibola Valley, AZ.....	09429300	ab187,800	C,T	1956–66, 1969–83
Colorado River below Laguna Dam, AZ.....	09429600	ab188,600	C,T	1972–83

See footnotes at end of table.

DISCONTINUED SURFACE-WATER QUALITY STATIONS—Continued

Station name	Station number	Drainage area , in square miles	Type of record	Period of record
Colorado River above Gila River, near Yuma, AZ.....	09429690	ab188,700	C,T	*1961–68, 1969–79
Gila River below Blue Creek, near Virden, NM	09432000	3,203	C,T	2002
Gila River near Clifton, AZ.....	09442000	4,010	C,S,T	1976–79
Blue River near Clifton, AZ.....	09444200	506	C	1990–93
San Francisco River at Clifton, AZ.....	09444500	a2,766	C,S,T	1943–44, 1964–67
San Francisco River near Clifton, AZ.....	09444600	a2,770	C	1976–79, 1981–84, 1987–88, 1990–93
Gila River at Safford, AZ.....	09458500	10,459	C,T	1941–44
Gila River at Fort Thomas, AZ.....	---	---	C,T	1940–41, 1943–44
Gila River at Calva, AZ.....	09466500	11,470	C,T	1943–44; 1974–94
San Carlos River near Peridot, AZ.....	09468500	1,026	C	1990–91
Gila River at Winkelman, AZ.....	09470000	a13,268	C,S,T	1976–84
Garden Canyon near Fort Huachuca, AZ.....	09470800	8.38	C,S,T	1962–64
San Pedro River near Benson, AZ.....	09471800	2,500	S	1966–74
San Pedro River near Winkelman, AZ.....	09473400	4,449	C,S,T	1962–66
San Pedro River at Winkelman, AZ.....	09473500	4,471	C,S,T	1966–80
Mineral Wash at Kelvin, AZ.....	09473900	97.9	C,T	1956–58, 1962–64
Santa Cruz River near Nogales, AZ.....	09480500	533	S,T	1966–74
Santa Cruz River at Rio Rico, AZ.....	09481710	1,004	C,T	1976–78
Santa Cruz River near Laveen, AZ.....	09489000	8,581	C,S,T	1976, 1978–79
Black River near Fort Apache, AZ.....	09490500	1,232	C,S,T	1976–79
White River near Fort Apache, AZ.....	09494000	632	C,S,T	1976–79
Tonto Creek above Gun Creek, near Roosevelt, AZ.....	09499000	675	C,S,T	1976–79, 1983
Salt River below Stewart Mountain Dam, AZ.....	09502000	6,232	C,S,T	1950–92
Oak Creek at Red Rock Crossing near Sedona, AZ.....	09504440	252	C,T	1978–83; 1986–94

See footnotes at end of table.

DISCONTINUED SURFACE-WATER QUALITY STATIONS—Continued

Station name	Station number	Drainage area , in square miles	Type of record	Period of record
Oak Creek near Cornville, AZ.....	09504500	357	C,T	1954–64, 1976–78
Verde River near Camp Verde, AZ.....	09506000	a5,009	C,S,T	1977, 1979–84
Verde River below Bartlett Dam, AZ.....	09510000	a6,161	C,S,T	1950–92
Turkey Creek near Cleator, AZ	09512600	89.4	C,T	1980–82
Agua Fria River below Waddell Dam, AZ.....	09513600	1,459	C,T	1950–58; 1975; 1982–89; 1991–94
Gila River near Dome.....	09520500	b57,850	C,S,T	1973, 1979, 1984–92
Gila River near mouth, near Yuma.....	09520700	b57,950	C,S,T	*1961–68, 1969–84
Colorado River at Yuma	09521000	ab246,500	C,S,T	1905, 1926–28, 1943–44, 1947–63
Colorado River below Yuma Main Canal Wasteway, at Yuma, AZ	09521100	ab246,500	C,T	1976, 1987–88
Colorado River at southerly international boundary, near San Luis, AZ.....	09522200	ab246,700	C,T	*1962–66, 1969–79
Gila Gravity Main Canal at Imperial Dam, AZ.....	09522500	---	C,T	1956–81
Yuma Main Canal below Colorado River Siphon, at Yuma, AZ	09525500	---	C,T	*1926–28, 1943–70
Mittry Lake Outlet Channel near Yuma, AZ.....	09527900	---	C,T	1974–83
North Gila Drain No. 1, near Yuma, AZ.....	09529000	---	C,T	*1966–68, 1969–81
North Gila Drain No. 3, near Yuma, AZ.....	09529050	---	C,T	*1966–68, 1969–81
South Gila Pump Outlet Channel No. 3, near Yuma, AZ.....	09529160	---	C,T	1969–83
Bruce Church Drain near Yuma, AZ.....	09529200	---	C,T	*1966, 1969–81
South Gila Pump Outlet Channel No. 2, near Yuma, AZ.....	09529240	---	C,T	*1968, 1969–83
Wellton-Mohawk Main Outlet Drain near Yuma, AZ.....	09529300	---	C,T	*1961–68, 1969–83

See footnotes at end of table.

DISCONTINUED SURFACE-WATER QUALITY STATIONS—Continued

Station name	Station number	Drainage area , in square miles	Type of record	Period of record
South Gila Pump Outlet Channel No. 1, near Yuma, AZ.....	09529360	---	C,T	*1968, 1969-83
South Gila Pump Outlet Channel No. 4, near Yuma, AZ.....	09529440	---	C,T	1969-82
Reservation Main Drain No. 4 at Yuma, AZ.....	09530000	---	C,T	*1964-68, 1969-81
Yuma Mesa Outlet Drain near Yuma, AZ	09530200	---	C,T	1972-83, 1987-88
Drain 8-B near Yuma, AZ	09530500	---	C,T	1970-81, 1987-88
Wellton-Mohawk Main Outlet Drain near Yuma, AZ.....	09531700	---	C,T	1969-74, 1983-85
Main Outlet Drain Extension below Morelos Dam, AZ	09531900	---	C	1972-76
Main Drain at southerly international boundary, near San Luis, AZ.....	09534000	---	C,T,	*1962-68, 1969-83
West Main Canal Wasteway at Arizona-Sonora boundary, AZ	09534300	---	C,T	1971-79
East Main Canal Wasteway at Arizona-Sonora boundary, AZ.....	09534500	---	C,T	*1965-68, 1969-79
Vamori Wash at Kom Vo, AZ.....	09535300	1,250	C,S,T	1978-86
Whitewater Draw near Douglas, AZ.....	09537500	1,023	C,T	1978-81

* Unpublished data.

^a Includes area that is probably noncontributing.^b Approximately.

WATER RESOURCES DATA FOR ARIZONA, WATER YEAR 2002

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey (USGS), in cooperation with State agencies, obtains a large amount of data on the water resources of Arizona each water year. These data, accumulated during many water years, constitute a valuable database for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the USGS, the data are published annually in a report series entitled "Water Resources Data for Arizona."

This report includes records on both surface water and ground water in the State. Specifically, it contains: (1) Discharge records for 201 streamflow-gaging stations, for 29 crest-stage, partial-record streamflow stations, and 48 miscellaneous sites; (2) stage and (or) content records for 10 lakes and reservoirs; (3) water-quality records for 21 streamflow-gaging stations and 65 wells; and (4) water levels for 18 wells.

This series of annual reports for Arizona began with the 1961 water year with a report that contained only data relating to surface water. For the 1964 water year, a similar report was introduced that contained only data on 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 water and ground water, and ground-water levels.

Before introduction of this series and for several water years concurrent with it, water-resources data for Arizona were published in the USGS Water-Supply Paper series. 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, Part 9." 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 University of Arizona, Arizona State University, and the State of Arizona in Phoenix; principal cities in the United States; or may be purchased from the Branch of Information Services, USGS, Box 25286, Denver Federal Center, Denver, CO 80225-0046.

Publications similar to this report are published annually by the USGS for all States. These official USGS 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 "USGS Water-Data Report AZ-02-1." 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, VA, 22161. Information for ordering specific reports and data retrievals may be obtained from the District Chief at the address given on the back of the title page or by telephone (520) 670-6671.

COOPERATION

The USGS and organizations of the State of Arizona have had cooperative agreements for the systematic collection of surface-water records since 1912, for ground-water levels since 1939, and for water-quality records since 1969. Organizations that assisted in collecting data through funding agreements with the Survey are:

Arizona Department of Environmental Quality	The Hopi Tribe
Arizona Department of Water Resources	The Hualapai Tribe
Bureau of Indian Affairs	Metropolitan Water District of Southern California
Bureau of Land Management	National Park Service
Bureau of Reclamation	The Navajo Nation
Central Arizona Water Conservation District	Phelps Dodge Corporation
City of Flagstaff	Pima County Flood Control District
City of Nogales	Salt River Valley Water Users' Association
City of Safford	Show Low Irrigation Company
City of Tucson	The Tohono O'odham Nation
Cochise County	U.S. Army Corps of Engineers
Flood Control District of Maricopa County	U.S. Army Fort Huachuca
Forest Service	U.S. Fish and Wildlife Service
Gila Valley Irrigation District	The White Mountain Apache Tribe
Gila Water Commissioner	The Yavapai-Prescott Indian Tribe
The Havasupai Tribe	The Zuni Pueblo

Assistance in the form of services was given by the International Boundary and Water Commission, the National Weather Service, and the Arizona Public Service Co. Organizations that supplied data are acknowledged in station descriptions.

HYDROLOGIC CONDITIONS

As is common in Arizona, streamflow varied greatly in the 2002 water year—from month to month throughout the year and from place to place in the State. The variations are related to differences in precipitation, temperature, topography, and geology. The yearly discharge at five key streamflow-gaging stations ranged from 29 to 57 percent of the median of yearly discharges. The median of the yearly discharges is defined as the middle value of discharge when arranged in order of size. For these index stations, the median is computed from the yearly discharges for the 1950–2002 period of record.

The yearly discharge for the 2002 water year was within the normal range at one station, and was deficient at four stations. Excessive discharge is defined as a discharge greater than the 75-percent quartile, that is, greater than 75-percent of the values arranged in order of magnitude; deficient discharge is less than the 25-percent quartile. The yearly discharge for the 2002 water year and the relation to the median of yearly discharges for the period 1950–2002 for the five index gaging stations are given below.

Station	Discharge (acre-feet)	Percent of median
Little Colorado River near Cameron	74,540	57
Gila River at head of Safford Valley, near Solomon	101,800	46
San Pedro River at Charleston	7,420	29
Salt River near Roosevelt	149,000	35
Verde River below Tangle Creek, above Horseshoe Dam	127,900	40

Figure 1 shows the mean monthly discharge for the 2002 water year compared with the median of mean monthly discharge for the period 1950–2002 at four representative gaging stations for which long-term records are available.

Water Use

Arizona is an arid state in which economic development is influenced largely by the location of adequate water supplies. Water demand is met by pumping ground water from aquifers, or by conveying surface water through a system of reservoirs and canals. The purpose of this program is to provide water-use information to local, State, and regional agencies for optimal water management. The goal of the water-use program is to define water-use patterns throughout the State of Arizona. Ground-water withdrawals from municipal, industrial (mining and thermoelectric), and irrigation for the years 1991–2000 are available at: <http://az.water.usgs.gov/local/local.html>.

WATER RESOURCES DATA FOR ARIZONA, WATER YEAR 2002

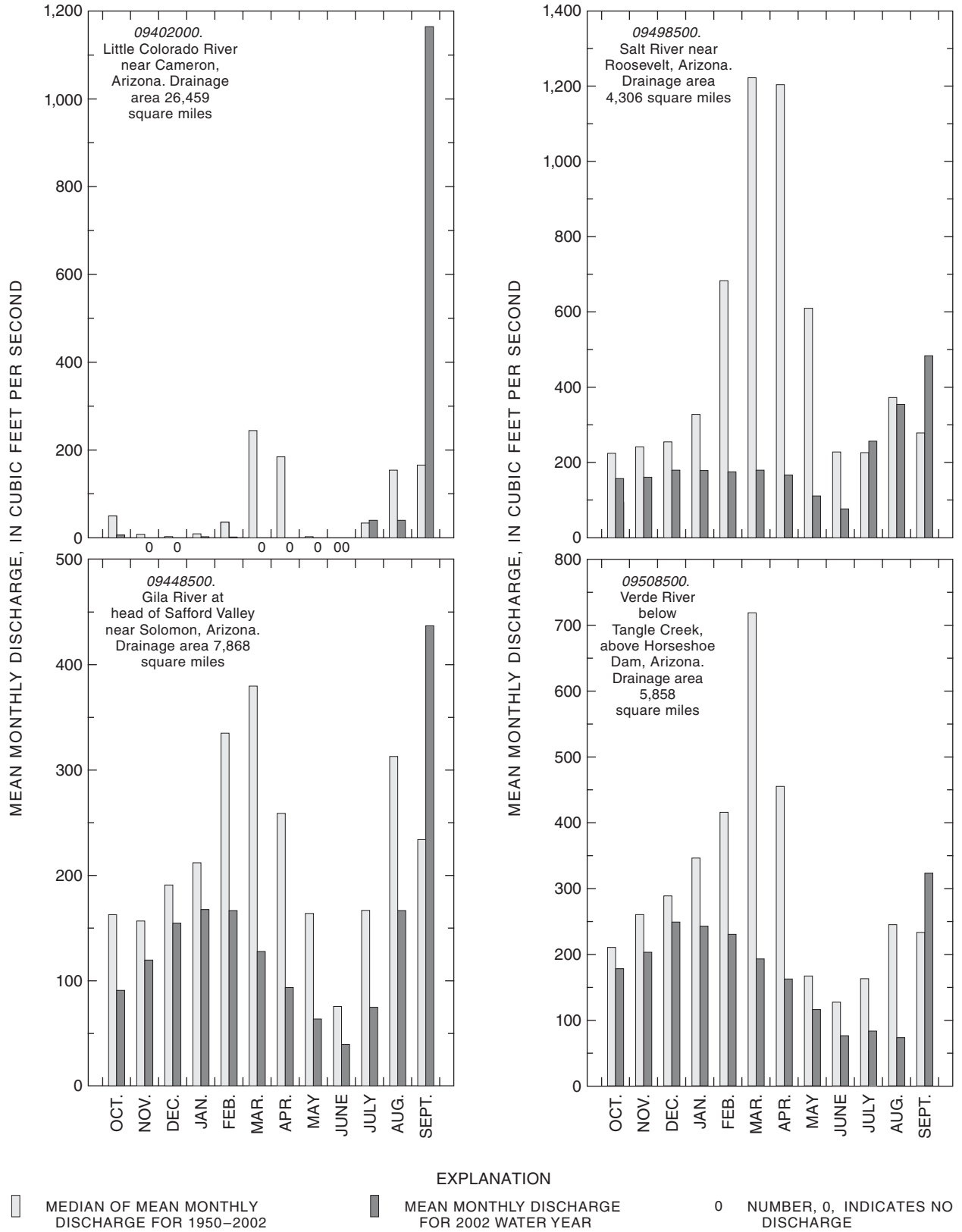


Figure 1. Mean monthly discharge for the 2002 water year compared with median of mean monthly discharge for period 1950-2002 at four representative gaging stations for which long-term records are available.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 50 sites in small drainage basins around the country whose purpose is to provide consistent data on the streamflow representative of undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by human activities. At 10 of these 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 can be found at <http://water.usgs.gov/hbn/>.

National Stream-Quality Accounting Network (NASQAN) monitors 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 basins. For the period 2000 through 2004, sampling was reduced to a few index stations on the Colorado and Columbia 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 Program (NAWQA); (3) to characterize processes unique to large-river systems such as storage and re-mobilization 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 can be found at <http://water.usgs.gov/nasqan/>.

The National Atmospheric Deposition Program/National Trends Network (NADP/NTN) provides 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 a network of 225 precipitation chemistry monitoring 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 all data from the individual sites, can be found at <http://bqs.usgs.gov/acidrain/>.

The National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey 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; provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 59 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 will be 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 decision making by water-resources managers 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 can be found at <http://water.usgs.gov/nawqa/>.

The Central Arizona Basins (CAZB) NAWQA, which includes much of the Gila River above Gillespie Dam and the Phoenix and Tucson areas, began in 1994. Data on physical, chemical, and biological properties of ground-water and surface-water resources in the CAZB study unit will be combined with data from as many as 53 other study units to represent water-quality conditions of resources that provide more than 60 percent of the Nation's public supplies.

Arizona Fixed Station Network is part of the State quality monitoring program and includes a network of water-quality sites at established surface-water stations, except for Verde River above West Clear Creek. Some sites are sampled in conjunction with the NASQAN and NAWQA. This network provides essential data for State water-quality assessment programs including the biennial report required by the Federal Clean Water Act.

Station name	Station number	NASQAN	Arizona Fixed Station Network
Colorado River at Lees Ferry	09380000		X
Colorado River above Diamond Creek	09404200	X	
Colorado River below Parker Dam	09427520		X
Gila River at the head of Safford Valley near Solomon	09448500		X
Gila River at Calva	09466500		X
Gila River at Kelvin	09474000		X
Pinal Creek at Inspiration Dam, near Globe	09498400		X
Salt River near Roosevelt	09498500		X
Salt River below Stewart Mountain Dam	09502000		X
Verde River near Clarkdale	09504000		X
East Verde River near Childs	09507980		X
Verde River below Tangle Creek above Horseshoe Dam	09508500		X
Verde River below Bartlett Dam	09510000		X
Gila River above diversions at Gillespie Dam	09518000		X
Colorado River at northerly international boundary, above Morelos Dam near Andrade, CA	09522000	X	X

EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for the 2002 water year that began October 1, 2001, and ended September 30, 2002. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, water-quality data for surface water and ground water, and ground-water-level data. The locations of the stations where the data were collected are shown in figures 4 through 7. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

Each data station, whether stream site or well, in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the USGS to assign identification numbers for surface-water stations and for ground-water well sites differ, but both are based on geographic location. The “downstream order” system is used for regular surface-water stations and the “latitude-longitude” system is used for wells and, in Arizona, for surface-water stations where only miscellaneous measurements are made.

Downstream Order System

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

The station identification number is assigned according to downstream order. In assigning station numbers, 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 made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight-digit number for each station, such as 09402500, which appears just to the left of the station name, includes the two-digit part number “09” plus the six-digit downstream-order number “402500.” The part number “09” designates the major river basin (Colorado River Basin).

Latitude-Longitude System

The identification numbers for wells and miscellaneous surface-water sites are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude; the next seven digits denote degrees, minutes, and seconds of longitude; and the last two digits (assigned sequentially) identify the wells or other sites within a 1-second grid. This site identification number, once assigned, is a pure number, and has no locational significance. 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 (fig. 2).

Local Well Numbers

A local well number is assigned to each ground-water site on the basis of the Gila and Salt River meridian and base line (fig. 3). A different numbering system is used on the Navajo and Hopi Indian Reservations. The Navajo Indian Reservation is divided into 17 administrative districts, numbered 1 to 5 and 7 to 18, and the Hopi Indian Reservation comprises district 6. The area is further divided into 15-minute quadrangles arbitrarily numbered from 1 to 151 starting in the northeast corner of the area and numbered consecutively in rows from east to west. Within the 15-minute quadrangle, the well is located in miles south and west from the northeast corner of the quadrangle. The first two numbers in the well number represent the district, the next three numbers are the quadrangle, the decimal numbers are miles west by (X) miles south of the northeast corner of the quadrangle. Thus, the number 02 021-05.28X10.68 states that the well is in district 2, quadrangle 21, and is 5.28 miles west by 10.68 miles south of the northeast corner of the quadrangle.

The well numbers used by the USGS in Arizona are in accordance with the Bureau of Land Management's system of land subdivision. The land survey in Arizona is based on the Gila and Salt River meridian and base line, which divide the State into four quadrants. These quadrants are designated counterclockwise by the capital letters A, B, C, and D. All land north and east of the point of origin is in A quadrant, that north and west in B quadrant, that south and west in C quadrant, and that south and east in D quadrant. The first digit of a well number indicates the township, the second the range, and the third the section in which the well is situated. The lowercase letters a, b, c, and d after the section number indicate the well location within the section. The first letter denotes a particular 160-acre tract, the second the 40-acre tract, and the third the 10-acre tract. These letters also are assigned in a counterclockwise direction, beginning in the northeast quarter. If the location is known within the 10-acre tract, three lowercase letters are shown in the well number. In the example shown, well number (D-04-05)19caa designates the well as being in the NE1/4NE1/4SW1/4 sec. 19, T. 4 S., R. 5 E. Where more than one well is within a 10-acre tract, consecutive numbers beginning with 1 are added as suffixes.

Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time or any period of time during the period of record. Complete records of lake and reservoir contents are those for which stage or contents may be computed or estimated with reasonable accuracy for any time or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report. Location of all complete-record and crest-stage partial-record stations for which data are given in this report are shown in figures 4 through 7.

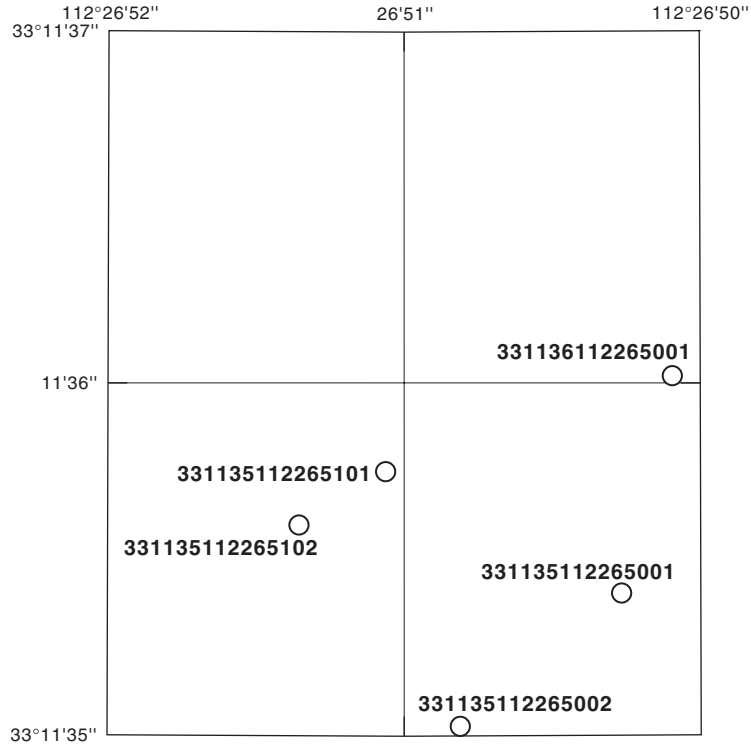
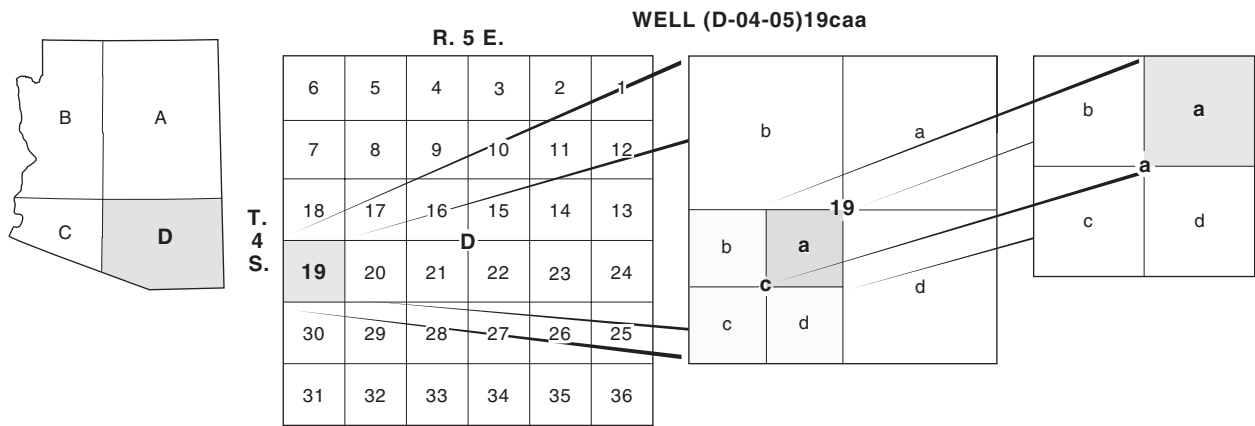


Figure 2. System for numbering wells and miscellaneous sites (latitude and longitude).

WELL-NUMBERING AND NAMING SYSTEM



Quadrant D, Township 04 South, Range 05 East, section 19, quarter section c, quarter section a, quarter section a

Figure 3. Well numbering and naming system.

Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relation between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relation between stage and lake contents. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adapted by the USGS as a result of experience accumulated since 1880. These methods are described in standard textbooks, Water-Supply Paper 2175, and the U.S. Geological Survey Techniques of Water-Resources Investigations (TWRI's), book 3, chap. A1 through A19 and book 8, chaps. 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).

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves then are constructed. From these curves, rating tables indicating the approximate discharge are prepared for any stage within the range of the measurements. If it is necessary to define extremes of discharge outside the range of current-meter measurements, the curves are extended using (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow-over-dam or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method in which correction factors based on individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may so obscure the stage-discharge relation that daily mean discharges must be estimated from other information such as temperature and precipitation records, notes or observations, and records for other stations in the same or nearby basins for comparable periods.

At some streamflow-gaging stations, the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This 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 set at some distance from the base gage. At some stations, the 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.

In computing records of lake or reservoir contents, it is necessary to have available surveys, curves, or tables to define the relation between stage and contents. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relation changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relation. When this is done, the contents computed may become increasingly in error as time increases since the last survey. Discharges over lake or reservoir spillways are computed from stage-discharge relations in the same manner as other stream discharges are computed.

For some gaging stations, there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This condition occurs when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is

frozen in the well, or for other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basin. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily values of discharges are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

Data Presentation

Streamflow data in this report are presented in a format that is considerably different from the format in data reports prior to the 1992 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table and less information is provided in the text or station manuscript above the table. These changes represent the results of a pilot program to reformat the annual water-data report to meet current user needs and data preferences.

The records published for each continuous-record surface-water discharge station (gaging station) now consist of four parts, the manuscript or station description; the data table of daily mean values of discharge for the current water year with summary data; a tabular statistical summary of monthly mean flow data for a designated period, by water year; and 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.

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 to follow clarify information presented under the various headings of the station description.

LOCATION.—Information on locations is obtained from the most accurate maps available or from Global Positioning System data. The location of the gage 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.

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.—The period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation at a time when the present station was not in operation and whose location was such that records from it can reasonably be considered equivalent with records from the present station.

REVISED RECORDS.—Published records, because of new information, occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

GAGE.—The type of gage in current use, the datum of the current gage referred to sea level (see Definition of Terms), 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 record will either be identified by date in this paragraph for discharge stations or flagged in the daily discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a REMARKS statement is used to identify estimated record, the paragraph will begin with this

information presented as the first entry. The paragraph also is used to present information relative to the accuracy of the records, to special methods of computation, to conditions that affect natural flow at the station, and possibly to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and 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.

AVERAGE DISCHARGE.—The discharge value given is the arithmetic mean of the water-year mean discharges. Average discharge is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development. The median of yearly mean discharges also is given under this heading for stations having 10 or more water years of record, if the median differs from the average given by more than 10 percent.

EXTREMES FOR PERIOD OF RECORD.—Extremes may include maximum and minimum discharges or contents. Unless otherwise qualified, the maximum discharge or content is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage, or by direct observation of a nonrecording gage. If the maximum stage did not occur on the same day as the maximum discharge or content, it is given separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and is determined and reported in the same manner as the maximum.

EXTREMES OUTSIDE PERIOD OF RECORD.—Information is included on 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.

EXTREMES FOR CURRENT YEAR.—Extremes given are similar to those for the period of record, except the peak discharge listing may include secondary peaks. For stations meeting certain criteria, all peak discharges and stages occurring during the water year and greater than a selected base discharge are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330. The minimum for the current water year appears below the table of peak data.

REVISIONS.—If errors in published water-quality records are discovered after publication, appropriate updates are made in the U.S. Geological Survey's distributed data system, NWIS, and subsequently to its web-based National data system, NWISWeb [<http://water.usgs.gov/nwis/nwis>]. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from NWIS or NWISWeb to ensure the most recent updates. Updates to NWISWeb are currently made on an annual basis.

Data Table of Daily Mean Values

The daily table for streamflow-gaging stations gives mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also is usually 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"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. In the yearly summary below the monthly summary, the figures shown are the appropriate discharges for the calendar and water

years. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversions or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

Statistics of Monthly Mean Data

A tabular summary of the mean (line headed "MEAN"), maximum (line headed "MAX"), and minimum (line headed "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 figures. 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 summary will consist of all the station records within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be 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, and the first column contains 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 the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive unless a break in the station record is indicated in the manuscript. All 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. Reported occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. 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, therefore, may not be within the selected water years listed in the heading. When this occurs, 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 there is extensive regulation or diversion of flow in the drainage basin.

The following summary statistics data, as appropriate, 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. At some stations, the annual total discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

ANNUAL MEAN.—The arithmetic mean of the individual daily mean discharges for the year noted or for the designated period. At some stations the yearly mean discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes. At least 5 complete years of record must be available before this statistic is published 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. 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 first day 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 high 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.

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.

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 equal to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

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

Inches (INCHES) indicates the depth to which the drainage area would be covered if all 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 a table of annual maximum stage and discharge at crest-stage stations. The table of crest-stage stations is followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements generally are 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.

Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified by flagging individual daily values with the letter symbol “e” and printing the table footnote, “e, Estimated.”

Accuracy of the Records

The accuracy of streamflow records 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 measurements of stage, measurements of discharge, and interpretation of records.

The accuracy attributed to the records is indicated under “REMARKS.” “Excellent” means that about 95 percent of the daily discharges are within 5 percent of the true; “good,” within 10 percent; and “fair,” within 15 percent. Records that do not meet the criteria mentioned are rated “poor.” Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second (ft^3/s) for values less than $1 \text{ ft}^3/\text{s}$, to the nearest tenth between 1.0 and $10 \text{ ft}^3/\text{s}$, to whole numbers between 10 and $1,000 \text{ ft}^3/\text{s}$, and to three significant figures for more than $1,000 \text{ ft}^3/\text{s}$. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff owing 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, figures 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 Records Available

The National Water Data Exchange (NAWDEx), USGS, Reston, VA 20192, maintains an index of sites as well as an index of records of discharge collected by other agencies but not published by the USGS. Information on records at specific sites can be obtained from that office upon request.

Several components of the National Water Information System (NWIS) are on the Arizona District computer. Many of the data published in this report and much additional information can be retrieved from the databases. The Ground Water Site Inventory (GWSI) database contains station numbers, well and miscellaneous site numbers, local well numbers, locations, and other descriptive data for all USGS data-collection sites. GWSI contains most of the data collected for wells except for chemical analyses. The Automated Data Processing System (ADAPS) contains most surface-water data except for site descriptions and chemical analyses. The Water Quality Data Processing System (QW) contains chemical analyses of water from ground-water and surface-water sites.

Data retrievals from the three databases are available at cost on paper, disk, or nine-track computer tape. Some of the retrievals produce data in a format suitable for machine reading that does not contain blank lines or page headers.

Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near streamflow-gaging stations because interpretation of records of surface-water quality almost always requires corresponding discharge data. Records of surface-water quality in this report may 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 continuing or partial-record station, where random 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 "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. 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 figures 5 and 6.

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. 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.

Onsite Measurements and Sample Collection

In obtaining water-quality data, a major concern is the assurance that the data obtained represent the *in situ* quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, are made onsite when samples are taken. To assure that measurements made in the laboratory also represent the *in situ* water, carefully prescribed procedures are 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 onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chap. D2; Book 3, Chap. A1, A3, and A4; Book 9, Chap. A1–A9. These references are listed in the section entitled "Techniques of Water-Resources Investigations of the U.S. Geological Survey." These methods are consistent with ASTM standards and generally follow ISO standards.

One sample can adequately define the water quality at a given time if the mixture of solutes throughout the cross section is homogeneous. The concentration of solutes at different locations in the cross section, however, may vary widely with different rates of water discharge depending on the source of material and turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream-Quality Accounting Network (see "Special Networks and Programs") are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals depends on flow conditions and other factors that must be evaluated by the collector.

Chemical-quality data published in this report are considered to be the most representative value available for the stations listed. The values represent water-quality conditions at the time of sampling as much as possible and are 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 for each constituent measured and are based on hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the District office whose address is given on the back of the title page of this report.

Water Temperature

Water temperatures are measured at the water-quality stations. In addition, water temperatures are taken at the time discharge measurements are made 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 closely follow 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 the coefficient applied to determine the mean concentration in the cross section.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been 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). 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. Methods used in the computation of sediment records are described in the TWRI, book 3, chap. C1 and C3. These methods are consistent with ASTM standards and generally follow ISO standards.

At other stations, suspended-sediment samples were 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.

Cross-Sectional Data

Cross-sectional surveys of water temperature, pH, specific conductance, dissolved oxygen, and suspended sediment are conducted at all NASQAN and Hydrologic Benchmark Network stations during various seasons and surface-water discharges. Documentation of cross-section variation of water quality is essential in order to determine how many samples in a cross section are necessary to ensure a representative composite sample.

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed at the USGS National Water-Quality Laboratory in Denver, Colorado. Methods used to analyze sediment samples and to compute sediment records are described in the TWRI Book 5, Chapter C1. Methods used by the USGS laboratories are given in the TWRI, book 1, chap. D2; book 3, chap. C2; and book 5, chaps. A1, A3, A4, and A5. These methods are consistent with ASTM standards and generally follow ISO standards.

MBAS determinations made from January 1, 1970, through August 29, 1993, at the National Water-Quality Laboratory in Denver (Analyzing Agency Code 80020) are positively biased. These data can be corrected on the basis of the following equation, if concentrations of dissolved nitrate plus nitrite, as nitrogen, and dissolved chloride, determined concurrently with the MBAS data, are applied:

$$\text{MBASCOR} = \text{M} - 0.0088\text{N} - 0.00019\text{C}$$

where

MBASCOR = corrected MBAS concentrations, in milligrams per liter;

M = reported MBAS concentration, in milligrams per liter;

N = dissolved nitrate plus nitrite, as nitrogen, concentration, in milligrams per liter; and

C = dissolved chloride concentration, in milligrams per liter.

The detection limit of the new method is 0.02 mg/L, whereas the detection limit for the old method was 0.01 mg/L. A detection limit of 0.02 mg/L should be used with corrected MBAS data from January 1, 1970, through August 29, 1993. In March 1989, the National Water-Quality Laboratory discovered a bias in the turbidimetric method for sulfate analysis, indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1989.

Samples where the dissolved concentration of a constituent (which is theoretically less than or equal to the total concentration) exceeds the respective total, may be due to unavoidable errors associated with subsampling and sample processing, or limitations on precision and accuracy of the analytical procedure.

Identifying Estimated Concentrations

Estimated concentrations published in this report are identified by flagging individual values with the symbol "E" and printing a table footnote "E, Estimated value." A wide variety of conditions can justify evoking the "E" remark code. All reported concentrations that are less than the lower reporting level (LRL) for an analytical method or the lowest calibration standard used, whichever is higher, are qualified using an "E" remark code. Reported concentrations that are greater than the highest calibration standard are also qualified with an "E" remark code. The "E" code is also assigned by the laboratory under the following conditions:

- Data quantification was not performed according to method-specific criteria.
- Performance of the analyte does not meet acceptable method-specific criteria. (Certain analytes that rarely meet criteria are permanently "E" coded.)
- Deviation from the standard operating procedure was required.
- Some moderate losses occurred in sample preparation but were not quantifiable.
- Moderate matrix interference conditions occurred. (Severe matrix interference results in raised reporting levels or deletion of the result.)

For microbiological values, an "E" is assigned when the reported value is not representative of an ideal colony count.

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 other data 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 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, as appropriate, 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" under "Records of Stage and Water Discharge"; same comments apply.

DRAINAGE AREA.—See "Data Presentation" under "Records of Stage and Water Discharge"; same comments apply.

PERIOD OF RECORD.—This indicates the periods for which there are published water-quality records for the station. 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 individual parameters.

INSTRUMENTATION.—Information on instrumentation is given only if a water temperature sensor 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. None are given for parameters measured weekly or less frequently because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for the period of record and for the current water year.

REVISIONS.—If errors in water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the USGS's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's (USEPA) STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of USGS water-quality data are encouraged to obtain all required data from the appropriate computer file to ensure the most recent updates.

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.

Codes

Printed output	Remarks
Sample Type	
1	Spike
2	Blank (field)
7	Replicate (concurrent)
9	Environmental
Sample Purpose	
20.0	National Stream-Quality Accounting Network (NASQAN)
40.0	Arizona Department of Environmental Quality
Remark Code	
e or E	Estimated value.
>	Actual value is known to be greater than value shown.
<	Actual value is known to be less than value shown.
M	Presence of material verified, but not quantified.
V	Analyte was detected in both the environmental sample and the associated blanks.
Value qualifier code	
k	Results based upon colony counts outside the acceptable range.
v	Analyte detected in laboratory blank.

Dissolved Trace-Element Concentrations

Note: Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter ($\mu\text{g/L}$) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10s to 100s of nanograms per liter (ng/L). Data above the $\mu\text{g/L}$ 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 USGS began using new trace-element protocols at some stations in water year 1994.

Change in National Trends Network Procedures

Note: Sample handling procedures at all National Trends Network stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences based on a special intercomparison study is available from the NADP Program Office, Illinois State Water Survey, 2204 Griffith Drive, Champaign, IL 61820-7495 (217-333-7873).

Quality-Control Data

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 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.

BLANK SAMPLES—Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated by 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 samples 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. There are many types of blank samples possible, each designed to segregate a different part of the overall data-collection process. The types of blank samples collected in this District are:

- **Source solution blank** – a blank solution that is transferred to a sample bottle in an area of the office laboratory with an atmosphere that is relatively clean and protected with respect to target analytes.
- **Ambient blank** – a blank solution that is put in the same type of bottle used for an environmental sample, kept with the set of sample bottles before sample collection, and opened at the site and exposed to the ambient conditions.
- **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.

Pump blank – a blank solution that is processed through the same pump-and-tubing system used for collecting an environmental sample.

Standpipe blank – a blank solution that is poured from the containment vessel (stand-pipe) before the pump is inserted to obtain the pump blank.

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

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

Canister blank – a blank solution that is taken directly from a stainless steel canister just before the VOC sampler is submerged to obtain a field blank sample.

REFERENCE SAMPLES—Reference material is a solution or material prepared by a laboratory whose 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. There are many types of replicate samples 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 sample** – a type of replicate sample in which the samples are collected simultaneously with two or more samplers or by using one sampler and alternating collection of samples into two or more compositing containers.
- **Sequential sample** – 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 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.

- **Concurrent sample** – a type of spike sample that is collected at the same time with the same sampling and compositing devices then spiked with the same spike solution containing laboratory-certified concentrations of selected analytes.
- **Split sample** – a type of spike sample in which a sample is split into subsamples contemporaneous in time and space then spiked with the same spike solution containing laboratory-certified concentrations of selected analytes.

Records of Ground-Water Levels

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number derived from the township-range location of the well (see “Local Well Numbers,” page 8).

Water-level measurements 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. Water levels are reported to a tenth of a foot.

Records of Ground-Water Quality

Records of ground-water quality in this report differ from other types of records in that for most sampling sites they consist of only one set of measurements for the water year. The quality of ground water ordinarily changes only slowly; therefore, for most general purposes, one annual sampling, or only a few samples taken at infrequent intervals during the year, is sufficient. Frequent measurement of the same constituents is not necessary unless one is concerned with a particular problem, such as monitoring for trends in nitrate concentration. In the special cases where the quality of ground water may change more rapidly, more frequent measurements are made to identify the nature of the changes.

Data Collection and Computation

The majority of the records of ground-water quality in this report were collected by Arizona Department of Water Resources personnel. Ground-water samples are collected annually from a network of about 150 wells and springs throughout the State. The samples are analyzed for major ions, nutrients, and some cases, for metals if they are known to be present. The remaining records were obtained as a part of special studies in specific areas. A number of chemical analyses are presented for some ground-water areas but none are presented for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality Statewide. Such a view can be attained only by considering records for this year in context with similar records obtained for these and other ground-water areas in earlier years.

Most methods for collecting and analyzing water samples are described in the USGS TWRI publications referred to in the "On-site Measurements and Sample Collection" and the "Laboratory Measurements" sections in this data report. In addition, the TWRI, book 1, chap. D2, describes guidelines for the collection and field analysis of ground-water samples for selected unstable constituents. The values reported in this report represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. These methods are consistent with ASTM standards and generally follow ISO standards. All samples were obtained by trained personnel. The wells sampled were pumped long enough to assure that the water collected came directly from the aquifer and had not been exposed to the atmosphere and to the well-casing material.

Data Presentation

The records of ground-water quality are published in a section titled "Quality of Water in Selected Wells in Ground-Water Areas in Arizona" immediately following the water-level records. Data for quality of ground water are listed alphabetically by ground-water area, and are identified by local well number. Each record consists of two parts—the site information table and the table containing the chemical analyses of the ground water. The REMARK codes listed for surface-water-quality records also are applicable to ground-water-quality records.

ACCESS TO WATSTORE DATA

The USGS is the principal Federal water-data agency and, as such, collects and disseminates about 70 percent of the water data currently being used by numerous State, local, private, and other Federal agencies to develop and manage our water resources. As part of the USGS's program of releasing water data to the public, a large-scale computerized system has been developed for the storage and retrieval of water data collected through its activities. The National Water Data Storage and Retrieval System (WATSTORE) was established in 1972 to provide an effective and efficient means for the processing and maintenance of water data collected through the activities of the USGS and to facilitate release of the data

to the public. A variety of useful products, ranging from data tables to complex statistical analyses such as log-Pearson Type III, can be produced using WATSTORE. The system resides on the central computer facilities of the USGS at its National Center in Reston, Virginia, and consists of related files and databases.

- **Station Header File**—Contains descriptive information on more than 440,000 sites throughout the United States and its territories where the USGS collects or has collected data.
- **Daily Value File**—Contains more than 220 million daily values of streamflows, stages, reservoir contents, water temperatures, specific conductances, sediment concentrations, sediment discharges, and ground-water levels.
- **Peak Flow File**—Contains approximately 500,000 maximum (peak) streamflow and gage-height values at surface-water sites.
- **Water Quality File**—Contains approximately 2 million analyses of water samples that describe the chemical, physical, biological, and radiochemical characteristics of surface water and ground water.
- **Ground-Water Site Inventory Database**—Contains inventory data for more than 900,000 wells, springs, and other sources of ground water. The data includes site location, geohydrologic characteristics, well-construction history, and one-time field measurements, such as water temperature.

In 1976, the USGS opened WATSTORE to the public for direct access. The signing of a Memorandum of Agreement with the Survey is required to obtain direct access to WATSTORE. The system can be accessed either synchronously or asynchronously. The requester will be expected to pay all computer costs that are incurred. Direct access may be obtained by contacting:

U.S. Geological Survey
National Water Data Exchange
421 USGS National Center
Reston, VA 20192

DEFINITION OF TERMS

Specialized technical terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. Definitions of common terms such as algae, water level, and precipitation are given in standard dictionaries. Not all terms defined in this alphabetical list apply to every State. See also table for converting inch/pound units to International System (SI) units on the inside of the back cover.

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.

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 poly-chlorinated 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 is purposely 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 Plexiglas strips for periphyton collection. (See also “Substrate”)

Ash mass is the mass or amount of residue present after the residue from the 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.

Bedload is material in transport that is supported primarily by the streambed. In this report, bedload is considered to consist of particles in transit from the bed to an elevation equal to the top of the bedload sampler nozzle (ranging from 0.25 to 0.5 foot) that 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”)

Bed material is the sediment mixture of which a stream-bed, lake, pond, reservoir, or estuary bottom is composed. (See also “Bedload” and “Sediment”)

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 is also called the Autotrophic Index.

Blue-green algae (*Cyanophyta*) are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample. (See also "Phytoplankton")

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 lithology and porosity of the rock.

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 are generally reported as cells or units per milliliter (mL) or liter (L).

Cells volume (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are frequently used 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:

$$\text{sphere } \frac{4}{3} \pi r^3 \quad \text{cone } \frac{1}{3} \pi r^2 h \quad \text{cylinder } \pi r^2 h.$$

pi (π) is the ratio of the circumference to the diameter of a circle; $\pi = 3.14159\dots$

From cell volume, total algal biomass expressed as biovolume ($\mu\text{m}^3/\text{mL}$) 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.

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 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 bound-aries. 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, [$\text{ft}^3/\text{s}/\text{d}$]) 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 are numerically 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, ($\text{ft}^3/\text{s}/\text{mi}^2$)] 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 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 periodic sample or 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 are usually 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 UTM coordinates. (See also “Gage datum,” “Land-surface datum,” “National Geodetic Vertical Datum of 1929,” and “North American Vertical Datum of 1988”)

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample. (See also “Phytoplankton”)

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, etc., 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 CaCO₃) 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:

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

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 are commonly 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 faecalis*, *Streptococcus faecium*, *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 are generally 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) concentration value 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 qualitatively identified 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 (<).

Euglenoids (*Euglenophyta*) are a group of algae that are usually 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 semivolatiles 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 warm-blooded 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 warm-blooded 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 itself is not an actual physical object, the datum usually is 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 have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algae mats or floating “moss” in lakes. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample. (See also “Phytoplankton”)

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 are typically 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 (CaCO₃).

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 weigh taxa abundances; usually increases with pollution. It is calculated as follows:

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

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.), 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 uniformly distributed on it. (See also “Annual runoff”)

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

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) is generally 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.
[Note: In several previous NWQL documents (NWQL

Technical Memorandum 98.07, 1998), the LRL was called the nondetection value or NDV—a term that is no longer used.]

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.

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.

Methylene blue active substances (MBAS) are apparent detergents. 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, $\mu\text{g/g}$) 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, $\mu\text{g/kg}$) 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, $\mu\text{g/L}$) 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, $\mu\text{S/cm}$) 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 of 1929) is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It was formerly 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 Vertical Datum of 1988 (NAVD 1988) 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 (m²), 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 utilizes 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 are usually 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 photo-synthetic 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 [$\text{mg C}/(\text{m}^2/\text{time})$] for periphyton and macrophytes or per volume [$\text{mg C}/(\text{m}^3/\text{time})$] 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 [$\text{mg O}/(\text{m}^2/\text{time})$] for periphyton and macrophytes or per volume [$\text{mg O}/(\text{m}^3/\text{time})$] 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 pre-cipitation.

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 (<2mm, 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%
1	> 75%	4	5–25%
2	51–75%	5	< 5%

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.

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 (ft³/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, 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”)

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.

Synoptic studies are short-term investigations of specific water-quality conditions during selected seasonal or hydro-logic 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 hierarchical 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:	Arthropoda
Class:	Insecta
Order:	Ephemeroptera
Family:	Ephemeridae
Genus:	<i>Hexagenia</i>
Species:	<i>Hexagenia limbata</i>

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 tons 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 due to 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 U.S. EPA 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 pathlength 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 are often 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."

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")

TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE U.S. GEOLOGICAL SURVEY

The USGS publishes a series of manuals titled the “Techniques of Water-Resources Investigations” that describe procedures for planning and conducting specialized work in water-resources investigations. The material in these manuals 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. Each chapter then is limited to a narrow field of the section subject matter. This publication format permits flexibility when revision or printing is required.

Manuals in the Techniques of Water-Resources Investigations series, which are listed below, are available online at <http://water.usgs.gov/pubs/twri/>. Printed copies are available for sale from the USGS, Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (an authorized agent of the Superintendent of Documents, Government Printing Office). Please telephone “1-888-ASK-USGS” for current prices, and refer to the title, book number, section number, chapter number, and mention the “U.S. Geological Survey Techniques of Water-Resources Investigations.” Other products can be viewed online at <http://www.usgs.gov/sales.html>, or ordered by telephone or by FAX to (303)236-4693. Order forms for FAX requests are 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.
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Section F. Drilling and Sampling Methods

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- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G.L. Bodhaine: USGS-TWRI book 3, chap. A3. 1968. 60 p.
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- 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-A10. *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.
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- 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.

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- 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.
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Section B. Surface Water

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Book 5. Laboratory Analysis

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- 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.
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- 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

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- 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.
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- 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.

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- 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.

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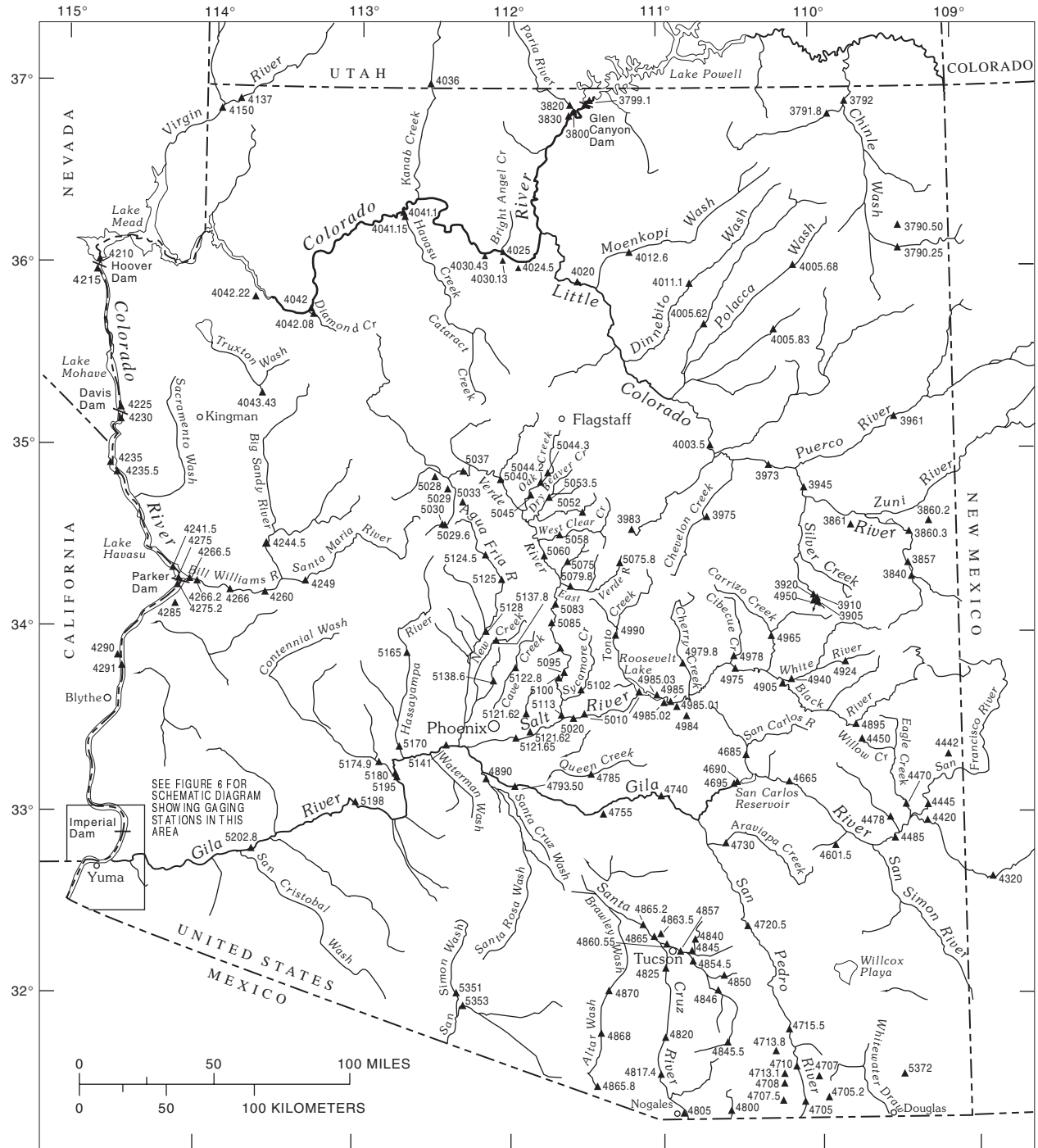
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- 9–A8. *National field manual for the collection of water-quality data: Bottom-material samples*, by D.B. Radtke: USGS–TWRI book 9, chap. A8. 1998. 48 p.
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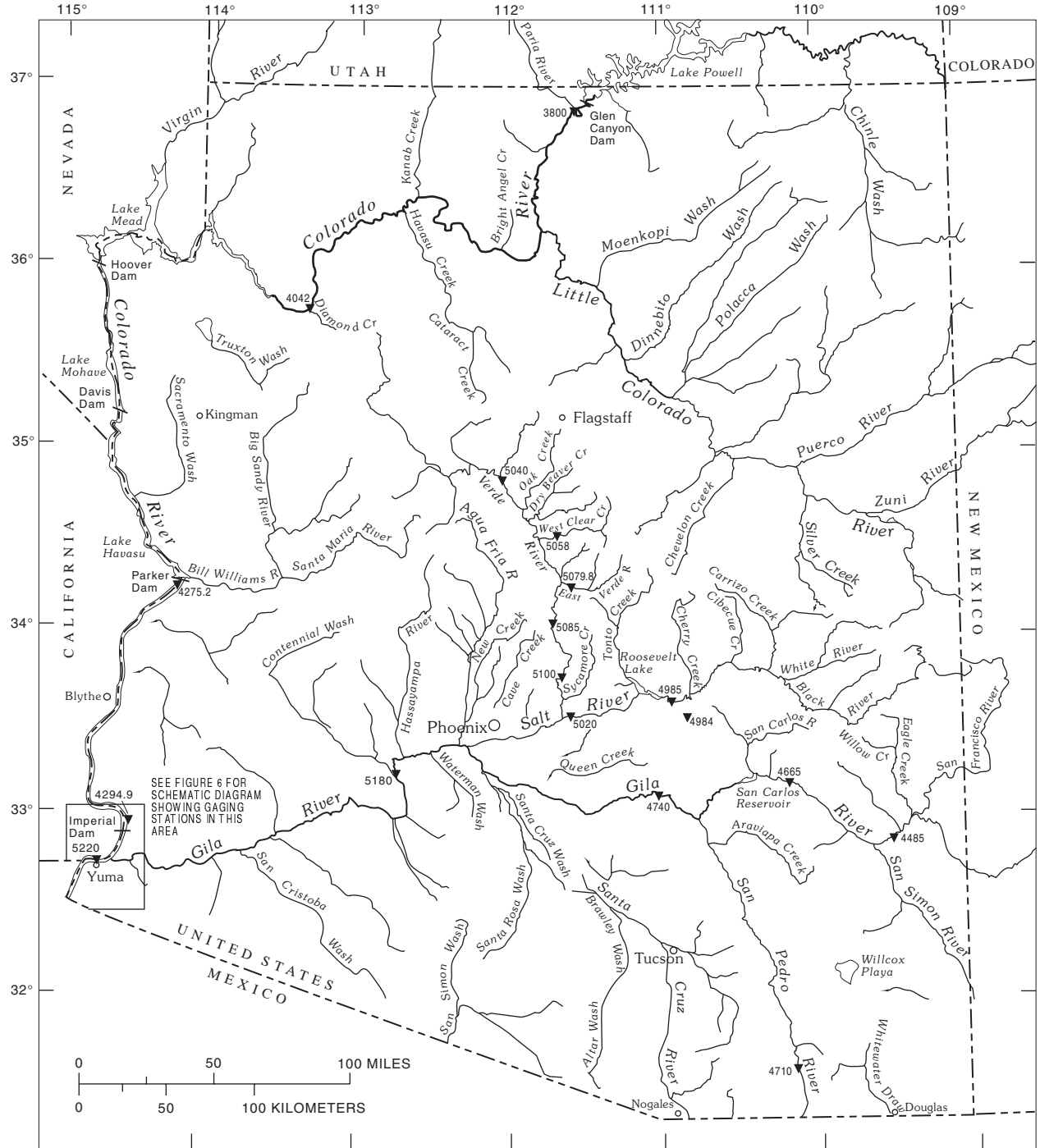


Base from U.S. Geological Survey
 State base maps, 1:500,000,
 Arizona, 1974; Nevada, 1965;
 New Mexico, 1965; and Utah, 1959

EXPLANATION

▲4665 STREAMFLOW-GAGING STATION AND
 ABBREVIATED NUMBER—Complete
 station number is 09466500

Figure 4. Locations of streamflow-gaging stations, water year 2002.



Base from U.S. Geological Survey
 State base maps, 1:500,000,
 Arizona, 1974; Nevada, 1965;
 New Mexico, 1965; and Utah, 1959

EXPLANATION

4710 ▼ WATER-QUALITY STATION AND ABBREVIATED NUMBER—Complete station number is 09471000

Figure 5. Locations of surface water-quality stations, water year 2002.

HYDROLOGIC-DATA STATION RECORDS

SAN JUAN RIVER BASIN

09379025 CHINLE CREEK AT CHINLE, AZ

LOCATION.--Lat 36° 09'18", long 109° 32'15" (unsurveyed), Apache County, Hydrologic Unit 14080204, in Navajo Indian Reservation, in Canyon De Chelly National Park, 0.5 mi from park entrance on the right bank 300 ft downstream of State Highway 64 bridge.

DRAINAGE AREA.--639 mi².

PERIOD OF RECORD.--Nov. 1999 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,540 ft above sea level, from topographic map.

REMARKS.--Records poor. Flow regulated by Wheatfields and Tsaille Lakes. Some diversions upstream for irrigation, livestock tanks, and domestic use.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,000 ft³/s Aug. 13, 2001, gage height, 4.01 ft. Minimum daily discharge, no flow for many days.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 967 ft³/s Aug. 20 at 1745, gage height 3.98 ft. Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	e0.56	e9.1	e0.06	0.00	0.00	0.00	e0.00	0.00
2	0.00	0.00	0.00	0.00	e0.58	e9.1	e0.06	0.00	0.00	0.00	e0.10	0.00
3	0.00	0.00	0.00	0.00	e0.57	e9.1	e0.06	0.00	0.00	0.00	e0.00	0.00
4	0.00	0.00	0.00	0.00	e0.58	e9.1	e0.06	0.00	0.00	0.00	e0.00	0.00
5	0.00	0.00	0.00	0.00	e0.52	e9.8	e0.06	0.00	0.00	0.00	e0.10	0.00
6	0.00	0.00	0.00	0.00	e0.54	e10	0.11	0.00	0.00	0.00	e0.14	0.00
7	0.00	0.00	0.00	0.00	e0.59	18	0.32	0.00	0.00	0.00	8.1	0.00
8	0.00	0.00	0.00	0.00	e0.58	19	0.23	0.00	0.00	0.00	10	21
9	0.00	0.00	0.00	0.00	e0.63	e13	0.11	0.00	0.00	0.00	4.8	e1.0
10	0.00	0.00	0.00	0.00	e0.69	e13	0.03	0.00	0.00	0.00	0.12	e16
11	0.00	0.00	0.00	0.00	e1.4	e13	0.00	0.00	0.00	0.00	0.00	e5.4
12	0.00	0.00	0.00	0.00	e1.6	e13	0.00	0.00	0.00	0.00	0.00	e4.6
13	0.00	0.00	0.00	0.00	e1.7	15	0.00	0.00	0.00	0.00	0.00	e2.2
14	0.00	0.00	0.00	0.00	e1.9	15	0.00	0.00	0.00	0.00	0.00	0.59
15	0.00	0.00	0.00	0.00	e1.9	11	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	e0.03	e2.0	6.7	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	e0.02	e2.1	9.6	0.00	0.00	0.00	0.15	0.00	0.00
18	0.00	0.00	0.00	e0.00	e2.7	8.9	0.00	0.00	0.00	0.04	0.00	0.00
19	0.00	0.00	0.00	e0.00	e2.8	11	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	e0.00	e2.9	11	0.00	0.00	0.00	0.00	e5.4	0.00
21	0.00	0.00	0.00	e0.00	e3.0	12	0.00	0.00	0.00	0.00	e0.15	0.00
22	0.00	0.00	0.00	e0.00	e4.8	9.6	0.00	0.00	0.00	7.4	0.00	0.00
23	0.00	0.00	0.00	e0.06	10	e5.1	0.00	0.00	0.00	5.5	0.00	0.00
24	0.00	0.00	0.00	e0.15	10	e3.5	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	e0.19	9.2	e2.2	0.00	0.00	0.00	0.79	0.00	0.00
26	0.00	0.00	0.00	e0.20	e8.7	e1.5	0.00	0.00	0.00	e0.46	0.00	0.00
27	0.00	0.00	0.00	e0.27	e8.5	e0.80	0.00	0.00	0.00	e0.00	0.00	0.00
28	0.00	0.00	0.00	0.50	e8.8	e0.40	0.00	0.00	0.00	e0.00	0.00	0.00
29	0.00	0.00	0.00	0.57	---	e0.10	0.00	0.00	0.00	e0.00	0.00	0.00
30	0.00	0.00	0.00	e0.55	---	e0.06	0.00	0.00	0.00	e0.00	e0.46	0.00
31	0.00	---	0.00	e0.57	---	e0.06	---	0.00	---	e0.00	e0.00	---
TOTAL	0.00	0.00	0.00	3.11	89.84	268.72	1.10	0.00	0.00	14.34	29.37	50.79
MEAN	0.000	0.000	0.000	0.100	3.209	8.668	0.037	0.000	0.000	0.463	0.947	1.693
MAX	0.00	0.00	0.00	0.57	10	19	0.32	0.00	0.00	7.4	10	21
MIN	0.00	0.00	0.00	0.00	0.52	0.06	0.00	0.00	0.00	0.00	0.00	0.00
MED	0.00	0.00	0.00	0.00	1.9	9.6	0.00	0.00	0.00	0.00	0.00	0.00
CAL YR 2001	TOTAL 3616.80	MEAN 9.909	MAX 101	MIN 0.00	MED 0.00							
WTR YR 2002	TOTAL 457.27	MEAN 1.253	MAX 21	MIN 0.00	MED 0.00							

e Estimated

SAN JUAN RIVER BASIN

09379050 LUKACHUKAI CREEK NEAR LUKACHUKAI, AZ

LOCATION.--Lat 36° 28'39", long 109° 20'58" (unsurveyed), Apache County, Hydrologic Unit 14080204, in Navajo Indian Reservation, on left bank 8 mi northwest of Lukachukai, AZ.

DRAINAGE AREA.--Unknown.

PERIOD OF RECORD.--Nov. 1999 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,750 ft above sea level, from topographic map.

REMARKS.--Records poor. Many small diversions upstream for irrigation and livestock.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,000 ft³/s Sept. 10, 2002, at 1345, gage height, 8.17 ft, from an extension of the rating curve. Minimum daily discharge, no flow for many days.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,000 ft³/s Sept. 10 at 1345, gage height, 8.17 ft, from an extension of the rating curve. Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.02	0.03	e0.11	0.05	e1.3	e0.77	0.92	e0.08	0.02	0.02	0.02	0.10
2	0.02	0.03	e0.13	e0.02	e1.4	e0.55	0.66	e0.08	0.02	0.02	0.03	0.10
3	0.02	0.03	e0.13	e0.05	e1.9	e0.40	0.39	e0.08	0.02	0.02	0.03	0.10
4	0.02	0.03	e0.12	e0.23	e2.3	e0.44	0.44	e0.06	0.02	0.02	0.02	0.10
5	0.02	0.04	e0.11	e0.16	e2.2	e0.57	0.41	e0.06	0.02	0.02	0.03	0.10
6	0.02	0.05	e0.10	e0.53	e2.0	e0.64	0.45	e0.04	0.02	0.02	0.02	0.17
7	0.02	0.05	e0.08	1.7	e1.5	e0.64	1.6	e0.04	0.02	0.02	1.6	3.7
8	0.02	0.04	e0.08	2.6	e2.2	e0.64	1.1	e0.04	0.02	0.02	0.16	26
9	0.02	0.03	e0.06	2.9	e1.8	e0.62	0.63	e0.02	0.02	0.02	0.04	0.27
10	0.01	0.03	e0.08	e2.8	e1.1	e0.65	0.53	e0.02	0.02	0.02	0.02	e100
11	0.00	0.03	e0.08	e1.7	e2.1	e0.66	0.51	e0.02	0.02	0.02	0.02	e0.70
12	0.01	0.03	e0.08	e2.2	e2.3	e0.60	0.51	e0.02	0.02	0.02	0.02	e0.10
13	0.00	0.03	e0.08	e1.9	e1.9	e0.62	0.45	e0.02	0.02	0.02	0.02	e0.08
14	0.01	0.03	e0.08	e1.4	e2.3	e0.71	0.30	e0.02	0.02	0.02	0.01	0.03
15	0.02	0.03	e0.08	2.2	e1.5	e0.74	0.24	0.02	0.02	0.02	0.02	0.00
16	0.03	0.03	e0.08	2.1	e1.9	e0.78	0.22	0.02	0.02	0.02	0.02	0.00
17	0.03	0.03	e0.08	1.2	e2.0	e0.89	0.22	0.02	0.02	0.02	0.02	0.00
18	0.03	0.03	e0.08	e1.0	e1.7	e1.1	0.19	0.02	0.02	0.02	0.02	26
19	0.02	0.03	e0.08	e0.28	e1.7	e1.3	0.16	0.02	0.02	2.0	0.02	2.2
20	0.02	0.03	e0.08	e0.25	e1.7	e1.4	0.16	0.02	0.02	0.02	0.85	0.12
21	0.02	0.05	e0.08	e0.25	e1.6	1.5	e0.15	0.02	0.02	0.02	1.7	0.02
22	0.03	0.04	e0.08	e1.8	e1.2	1.6	e0.15	0.02	0.02	7.6	0.08	0.00
23	0.02	0.03	e0.08	e2.1	e1.3	1.8	e0.12	0.02	0.02	0.46	0.05	0.00
24	0.02	0.05	e0.08	e2.1	e1.2	1.5	e0.12	0.02	0.02	0.00	0.05	0.00
25	0.02	0.12	e0.08	e5.2	e1.1	2.0	e0.12	0.02	0.02	0.00	0.06	0.00
26	0.02	0.09	e0.07	e5.1	e0.93	1.7	e0.12	0.02	0.02	0.00	0.05	0.00
27	0.02	e0.09	e0.07	e4.0	e0.95	1.5	e0.10	0.02	0.02	0.01	0.05	0.00
28	0.02	e0.09	e0.06	2.1	e0.92	1.4	e0.10	0.02	0.02	0.00	0.05	e0.02
29	0.02	e0.09	e0.06	1.2	---	1.4	e0.10	0.02	0.02	0.01	2.7	e0.02
30	0.02	e0.10	e0.06	e1.0	---	1.2	e0.10	0.02	0.02	0.02	0.51	e0.02
31	0.03	---	0.05	e1.0	---	1.0	---	0.02	---	0.02	0.11	---
TOTAL	0.59	1.41	2.57	51.12	46.00	31.32	11.27	0.94	0.60	10.51	8.40	159.95
MEAN	0.019	0.047	0.083	1.649	1.643	1.010	0.376	0.030	0.020	0.339	0.271	5.332
MAX	0.03	0.12	0.13	5.2	2.3	2.0	1.6	0.08	0.02	7.6	2.7	100
MIN	0.00	0.03	0.05	0.02	0.92	0.40	0.10	0.02	0.02	0.00	0.01	0.00
MED	0.02	0.03	0.08	1.7	1.7	0.78	0.23	0.02	0.02	0.02	0.03	0.09
AC-FT	1.2	2.8	5.1	101	91	62	22	1.9	1.2	21	17	317

CAL YR 2001 TOTAL 944.66 MEAN 2.588 MAX 142 MIN 0.00 MED 0.11 AC-FT 1870
WTR YR 2002 TOTAL 324.68 MEAN 0.890 MAX 100 MIN 0.00 MED 0.06 AC-FT 644

e Estimated

LITTLE COLORADO RIVER BASIN

09379180 LAGUNA CREEK AT DENNEHOTSO, AZ

LOCATION.--Lat 36° 51' 14", long 109° 50' 43", in unsurveyed Apache County, Hydrologic Unit 14080204, on right bank about 50 ft upstream from bridge, at Dennehotso, AZ.

DRAINAGE AREA.--414 mi².

PERIOD OF RECORD.--July 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,985 ft above sea level, from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,690 ft³/s, Sept. 16, 1997, gage height, 11.39 ft. Minimum daily discharge, no flow for many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 11.....	0830	*1,600	*11.05

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.53	1.6	e1.6	e1.8	3.7	e1.5	0.00	0.00	0.00	0.00	0.00
2	0.00	0.52	e2.0	e1.7	e1.4	e3.0	0.87	0.00	0.00	0.00	0.00	0.00
3	0.00	0.78	e2.2	e1.8	e1.1	1.2	0.71	0.00	0.00	0.00	0.00	0.00
4	0.00	0.97	e4.2	e2.8	e1.1	0.62	0.59	0.00	0.00	0.00	0.00	0.00
5	0.00	1.2	e4.4	e3.2	e1.1	1.8	1.6	0.00	0.00	0.00	0.00	0.00
6	0.00	1.1	e2.2	e3.2	e1.1	2.7	1.1	0.00	0.00	0.00	0.00	1.7
7	0.00	1.6	1.4	e2.8	e1.2	e4.4	1.0	0.00	0.00	0.00	0.00	309
8	0.00	2.5	e0.69	e2.5	e1.3	3.5	0.95	0.00	0.00	0.00	0.00	e371
9	0.00	2.4	e0.57	e3.2	e1.4	1.7	2.2	0.00	0.00	0.00	0.00	132
10	0.00	2.2	e0.73	e3.1	e1.9	2.3	2.2	0.00	0.00	0.00	0.00	7.5
11	0.00	2.3	e0.33	e2.7	e2.6	3.6	0.45	0.00	0.00	0.00	0.00	544
12	0.00	2.1	e1.1	e2.7	e2.6	2.9	0.32	0.00	0.00	0.00	0.00	253
13	0.00	2.7	e1.2	e3.1	e2.8	2.4	0.00	0.00	0.00	0.00	0.00	16
14	0.00	2.9	e0.72	e3.3	e3.9	1.0	0.00	0.00	0.00	0.00	0.00	4.6
15	0.00	1.2	0.07	e3.1	e3.8	0.75	0.00	0.00	0.00	0.00	0.00	0.56
16	0.00	3.7	e0.59	e4.5	e4.8	0.53	0.00	0.00	0.00	0.00	0.00	0.02
17	0.00	3.1	e0.04	e2.4	9.5	0.18	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	2.6	0.04	e1.4	e1.0	0.67	4.2	0.00	0.00	0.00	0.00	0.00
19	0.00	2.4	e0.10	e1.1	8.2	0.72	3.1	0.00	0.00	0.00	0.00	0.00
20	0.00	2.2	e0.28	e1.4	6.2	e3.6	0.54	0.00	0.00	0.00	0.00	0.00
21	1.3	2.2	e0.40	e1.7	e7.8	e4.8	0.51	0.00	0.00	0.00	0.00	0.00
22	0.14	2.2	e0.65	e1.8	6.8	e4.9	0.25	0.00	0.00	0.00	0.00	0.00
23	0.00	0.29	1.1	e2.0	5.5	e4.6	0.00	0.00	0.00	0.00	0.00	0.00
24	0.05	e1.6	e0.48	1.3	5.8	e4.2	0.00	0.00	0.00	0.00	0.00	0.00
25	0.03	e5.8	e0.32	0.81	3.7	3.8	0.00	0.00	0.00	0.00	0.00	0.00
26	0.08	e1.6	e0.56	0.86	2.7	3.0	0.00	0.00	0.00	0.00	0.00	0.00
27	0.10	e1.2	e0.87	1.9	2.4	e2.6	0.00	0.00	0.00	0.00	0.00	0.00
28	0.14	e1.3	e0.82	3.6	e1.9	e3.7	0.00	0.00	0.00	0.00	0.00	0.00
29	0.31	e1.4	e2.7	e4.2	---	e3.6	0.00	0.00	0.00	0.00	0.01	0.00
30	0.34	e2.0	e3.7	e2.4	---	e2.9	0.00	0.00	0.00	0.00	0.00	0.00
31	0.55	---	e2.5	e2.3	---	e2.1	---	0.00	---	0.00	0.00	---
TOTAL	3.04	58.59	38.56	74.47	104.4	81.47	22.09	0.00	0.00	0.00	0.01	1639.38
MEAN	0.098	1.953	1.244	2.402	3.729	2.628	0.736	0.000	0.000	0.000	0.000	54.65
MAX	1.3	5.8	4.4	4.5	10	4.9	4.2	0.00	0.00	0.00	0.01	544
MIN	0.00	0.29	0.04	0.81	1.1	0.18	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	6.0	116	76	148	207	162	44	0.00	0.00	0.00	0.02	3250
CFSM	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2002, BY WATER YEAR (WY)

	1996	1997	1998	1999	2000	2001	2002
MEAN	10.77	3.982	1.729	3.158	3.673	2.086	1.884
MAX	28.0	7.35	3.40	4.29	6.14	4.51	3.22
(WY)	2001	1999	1999	2000	1998	2001	1999
MIN	0.098	1.60	1.05	2.31	2.60	0.85	0.25
(WY)	2002	2000	2000	1997	1997	1999	2000

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1996 - 2002

ANNUAL TOTAL	1719.28	2022.01		
ANNUAL MEAN	4.710	5.540		6.608
HIGHEST ANNUAL MEAN				11.4
LOWEST ANNUAL MEAN				1.22
HIGHEST DAILY MEAN	454	Jul 10	544	Sep 11
LOWEST DAILY MEAN	0.00	Apr 5	0.00	Oct 1
ANNUAL SEVEN-DAY MINIMUM	0.00	May 25	0.00	Oct 1
ANNUAL RUNOFF (AC-FT)	3410		4010	4790
ANNUAL RUNOFF (CFSM)		0.011		0.013
10 PERCENT EXCEEDS		5.5		3.6
50 PERCENT EXCEEDS		0.53		0.08
90 PERCENT EXCEEDS		0.00		0.00

e Estimated

SAN JUAN RIVER BASIN

09379200 CHINLE CREEK NEAR MEXICAN WATER, AZ

LOCATION--Lat 36° 56'38", long 109° 42'36" in sec. 19, T.41 N., R.25 E. (unsurveyed), Apache County, Hydrologic Unit 14080204, in Navajo Indian Reservation, on right bank 150 ft upstream from bridge on U.S. Highway 160, 3 mi upstream from Walker Creek, 4 mi southwest of Mexican Water, 5 mi downstream from confluence of Chinle Creek and Laguna Creek, and 6 mi upstream from Arizona-Utah State line.

DRAINAGE AREA--3,650 mi².

PERIOD OF RECORD--Oct. 1964 to current year (monthly discharge only for 1979). Prior to Oct. 1970 published as Chinle Wash near Mexican Water.

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

GAGE--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 4,720 ft above sea level.

REMARKS--Records poor. Some diversions upstream for irrigation, livestock tanks, and domestic use. Many Farms Reservoir, about 25 mi upstream, was built in 1939 with an original capacity of 25,000 acre-ft. The reservoir provides off-channel storage for irrigation of about 1,600 acres.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 12,000 ft³/s Aug. 24, 1982, gage height, 13.87 ft, from rating curve extended above 3,100 ft³/s on basis of slope-area measurement at gage height 12.50 ft; no flow at times each year.

EXTREMES FOR CURRENT PERIOD--Peak discharges greater than base discharge of 500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 9	1400	3,330	8.08
Sept. 8.....	0945	2,030	6.93
Sept. 12	1630	*3,870	*8.54

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	1.2	2.3	1.9	e2.5	3.8	1.9	0.55	0.05	0.00	0.00	0.00
2	0.00	1.2	2.2	e2.8	e2.1	e3.0	1.7	0.77	0.04	0.00	e0.04	0.00
3	0.00	1.2	2.5	e3.4	e1.8	e3.0	1.6	0.59	0.00	0.00	e0.08	0.00
4	0.00	1.3	5.1	e4.0	e1.8	e2.0	1.5	0.86	0.00	0.00	e0.10	0.00
5	0.00	1.6	5.0	e4.4	e2.0	e3.0	1.4	0.57	0.00	0.00	e0.14	0.00
6	0.00	1.6	3.3	4.3	e2.0	4.9	1.4	0.26	0.00	0.00	94	0.00
7	0.00	1.8	1.7	5.8	e2.0	7.1	1.4	0.14	0.00	0.00	e50	254
8	0.00	1.8	0.85	3.5	e1.9	8.0	1.1	0.15	0.00	0.00	e2.0	952
9	0.00	2.3	0.64	5.5	e2.1	e5.0	1.1	0.15	0.00	0.00	0.00	e400
10	0.00	2.5	0.82	6.5	e2.0	e4.0	1.2	0.15	0.00	0.00	0.00	e40
11	0.00	2.3	0.41	e3.0	e3.0	5.1	2.3	0.16	0.00	0.00	0.00	1520
12	0.00	2.5	1.8	e3.0	e3.0	5.7	1.6	0.20	0.00	0.00	0.00	2500
13	0.00	2.3	1.3	e5.0	e3.0	5.7	1.4	0.24	0.00	0.00	0.00	e240
14	0.00	2.6	0.93	e5.0	e4.5	5.1	1.0	0.20	0.00	0.00	0.00	e10
15	e0.10	2.5	e1.2	e3.0	e4.0	4.2	0.94	0.15	0.00	0.00	0.00	0.00
16	e0.17	1.9	0.91	e5.0	e5.0	3.5	1.1	0.15	0.00	0.00	0.00	0.00
17	0.19	2.5	0.59	e2.9	e10	3.2	0.99	0.16	0.00	0.00	0.00	0.00
18	0.21	2.8	0.48	e2.3	e10	2.8	0.90	0.19	0.00	0.00	0.00	0.00
19	0.21	2.7	0.60	e1.5	e9.5	3.2	1.8	0.12	0.00	513	0.00	e20
20	0.15	e2.6	0.58	e2.0	e9.2	3.8	2.9	0.12	0.00	232	0.00	e0.05
21	0.02	e2.4	0.78	e2.4	8.4	5.6	1.5	0.00	0.00	71	e36	0.00
22	0.00	2.4	0.70	2.2	e8.0	5.2	1.5	0.00	0.00	17	17	0.00
23	0.00	2.5	1.4	2.7	8.5	4.9	1.4	0.00	0.00	4.1	0.05	0.00
24	0.00	e2.0	0.67	e2.1	6.8	4.2	1.3	0.04	0.00	3.2	0.00	0.00
25	1.6	e6.0	0.51	e1.6	e5.8	4.0	1.1	0.16	0.00	2.9	0.00	0.10
26	0.28	e2.5	0.56	e1.8	e4.0	3.2	0.90	0.12	0.00	0.61	0.00	0.77
27	0.29	e2.0	0.91	e2.6	e2.5	2.9	0.88	0.11	0.00	0.04	0.00	0.59
28	0.39	2.1	1.3	4.5	e3.0	4.2	1.00	0.09	0.00	0.00	0.00	e2.9
29	0.42	1.7	3.7	e4.5	---	4.0	1.0	0.09	0.00	0.00	0.00	e8.1
30	0.59	2.7	4.8	e3.1	---	3.2	0.81	0.09	0.00	0.00	77	e1.8
31	0.99	---	3.5	e2.8	---	2.5	---	0.06	---	0.00	e7.0	---
TOTAL	5.61	67.5	52.04	105.1	128.4	130.0	40.62	6.64	0.09	843.85	283.41	5950.31
MEAN	0.181	2.250	1.679	3.390	4.586	4.194	1.354	0.214	0.003	27.22	9.142	198.3
MAX	1.6	6.0	5.1	6.5	10	8.0	2.9	0.86	0.05	513	94	2500
MIN	0.00	1.2	0.41	1.5	1.8	2.0	0.81	0.00	0.00	0.00	0.00	0.00
AC-FT	11	134	103	208	255	258	81	13	0.2	1670	562	11800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2002, BY WATER YEAR (WY)

MEAN	22.57	14.47	8.480	17.22	26.94	23.88	58.19	49.96	5.254	25.47	55.34	41.86
MAX	142	144	41.2	151	169	215	402	294	72.5	129	501	342
(WY)	1973	1988	1966	1993	1988	1983	1985	1980	1973	1975	1982	1982
MIN	0.18	0.41	1.09	1.60	2.25	0.67	0.53	0.21	0.000	0.000	0.000	0.000
(WY)	2002	1991	1978	1996	1996	1967	1996	2002	1975	1979	1974	1979

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1965 - 2002
ANNUAL TOTAL	3485.54	7613.57	
ANNUAL MEAN	9.549	20.86	29.14
HIGHEST ANNUAL MEAN			94.2
LOWEST ANNUAL MEAN			4.47
HIGHEST DAILY MEAN	381	Aug 15	6000
LOWEST DAILY MEAN	0.00	Jun 1	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 1	0.00
ANNUAL RUNOFF (AC-FT)	6910	15100	21110
10 PERCENT EXCEEDS	18	5.6	59
50 PERCENT EXCEEDS	1.8	1.1	3.0
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

COLORADO RIVER MAIN STEM

09379900 LAKE POWELL AT GLEN CANYON DAM, AZ

LOCATION.--Lat 36° 56' 12", long 111° 29' 00", in sec. 24, T.41 N., R.8 E., Coconino County, Hydrologic Unit 14070006, at Glen Canyon Dam on Colorado River, 900 ft upstream from bridge on U.S. Highway 89, 1.4 mi downstream from Wahweap Creek, 2 mi northwest of Page, and 12 mi downstream from Utah-Arizona State line.

DRAINAGE AREA.--111,700 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

PERIOD OF RECORD.--Mar. 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Sept. 1, 1964, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by concrete-arch gravity dam; storage began Mar. 13, 1963; dam completed Sept. 1963. Total capacity, (from capacity table computed by Bureau of Reclamations, based on a survey completed in 1985; used since Oct. 1, 1990) 26,215,000 acre-ft consisting of the following: dead storage, 1,893,000 acre-ft below elevation 3,370 ft-sill of outlet gates; usable contents, 24,322,000 acre-ft between elevations 3,370 ft and 3,700 ft-top of conservation pool. Reservoir is used for power development, to provide storage replacement for upstream irrigation development, and to meet downstream requirements under the Colorado River Compact of 1922. Figures given herein represent usable contents; prior to Oct. 1, 1968, figures of total contents were published (prior to sealing of diversion tunnel July 7, 1965, all storage was usable).

COOPERATION.--Records furnished by Bureau of Reclamation.

EXTREMES (at 2400) FOR PERIOD OF RECORD.--Maximum contents, 26,373,000 acre-ft July 14, 1983, elevation, 3,708.34 ft; minimum since power pool level was reached (Aug. 16, 1964), 4,166,000 acre-ft Mar. 18, 1965, elevation, 3,490.76 ft.

EXTREMES (at 2400) FOR CURRENT YEAR.--Maximum contents, 19,120,000 acre-ft Oct. 1, elevation, 3,664.73 ft; minimum, 14,468,000 acre-ft Sept. 30, elevation, 3,626.53 ft.

Capacity table (elevation, in feet, and usable contents, in acre-feet)

3,610	12,730,000	3,670	19,838,000
3,622	13,976,000	3,682	21,553,000
3,634	15,306,000	3,694	23,373,000
3,646	16,723,000	3,706	25,304,000
3,658	18,232,000		

RESERVOIR STORAGE, in K AC-FT, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19120	18794	18510	17984	17499	17178	16918	16699	16529	16084	15309	14557
2	19108	18785	18506	17961	17485	17171	16910	16685	16524	16062	15294	14547
3	19096	18777	18470	17947	17476	17162	16903	16678	16511	16034	15269	14533
4	19082	18770	18446	17932	17461	17156	16899	16671	16501	16018	15240	14522
5	19069	18758	18414	17922	17452	17144	16888	16663	16501	15994	15213	14513
6	19056	18749	18397	17910	17438	17131	16888	16652	16496	15965	15189	14505
7	19044	18743	18388	17898	17426	17128	16883	16645	16485	15945	15162	14515
8	19029	18736	18376	17883	17412	17121	16873	16634	16480	15926	15136	14524
9	19023	18722	18371	17867	17407	17110	16865	16629	16467	15897	15111	14517
10	19003	18712	18345	17845	17392	17098	16870	16623	16450	15874	15090	14522
11	18998	18706	18331	17833	17379	17085	16855	16615	16439	15843	15064	14532
12	18974	18698	18311	17813	17369	17073	16853	16612	16427	15818	15043	14539
13	18970	18687	18292	17807	17354	17064	16841	16603	16417	15793	15018	14562
14	18969	18675	18276	17789	17349	17056	16834	16592	16399	15770	14996	14571
15	18958	18665	18258	17776	17332	17043	16834	16583	16386	15745	14965	14577
16	18946	18653	18245	17757	17322	17038	16812	16583	16372	15719	14938	14585
17	18933	18642	18222	17740	17309	17030	16815	16569	16359	15694	14917	14568
18	18926	18638	18204	17718	17299	17020	16804	16561	16343	15664	14893	14558
19	18917	18625	18189	17705	17286	17011	16788	16558	16328	15639	14871	14553
20	18907	18613	18170	17690	17278	17008	16789	16543	16305	15613	14845	14549
21	18906	18604	18146	17672	17266	17000	16784	16532	16287	15590	14818	14547
22	18893	18598	18131	17659	17253	16988	16774	16525	16267	15565	14790	14540
23	18886	18582	18121	17644	17244	16982	16766	16520	16254	15538	14762	14533
24	18873	18570	18100	17624	17234	16973	16761	16520	16233	15507	14742	14523
25	18859	18566	18091	17603	17226	16963	16750	16518	16210	15487	14717	14524
26	18851	18554	18071	17591	17208	16967	16747	16515	16193	15448	14689	14506
27	18839	18544	18055	17579	17204	16957	16733	16520	16172	15424	14666	14487
28	18835	18521	18038	17558	17201	16951	16725	16526	16152	15411	14651	14471
29	18826	18515	18023	17539	---	16940	16713	16534	16129	15388	14623	14470
30	18814	18511	18009	17526	---	16936	16705	16535	16111	15363	14590	14468
31	18802	---	17996	17508	---	16927	---	16536	---	15333	14569	---
TOTAL	587512	559713	565502	550280	485561	528411	504580	514179	490727	487151	463180	435918
MEAN	18952	18657	18242	17751	17341	17046	16819	16586	16358	15715	14941	14531
MAX	19120	18794	18510	17984	17499	17178	16918	16699	16529	16084	15309	14585
MIN	18802	18511	17996	17508	17201	16927	16705	16515	16111	15333	14569	14468
(*)	3662.35	3660.14	3656.17	3652.33	3649.88	3647.67	3645.85	3644.46	3640.91	3634.24	3627.45	3626.53
(**)	-333000	-291000	-515000	-488000	-307000	-274000	-222000	-169000	-425000	-778000	-764000	-101000
CAL YR 2001	TOTAL 7010173	MEAN 19206	MAX 20259	MIN 17996	(**)	-1827000						
WTR YR 2002	TOTAL 6172714	MEAN 16912	MAX 19120	MIN 14468	(**)	-4667000						

(*) Elevation, in feet, at end of month.
(**) Change in contents, in acre-feet.

COLORADO RIVER MAIN STEM

09379910 COLORADO RIVER BELOW GLEN CANYON DAM, AZ

LOCATION.--Lat 36° 55' 18", long 111° 28' 58" in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 25, T.41 N., R. 8 E., Coconino County, Hydrologic Unit 14070006, on left bank 4,500 ft downstream from Glen Canyon Dam, 2 mi west of Page, 13 mi downstream from Utah-Arizona State line, and 14.5 mi upstream from Lees Ferry.

DRAINAGE AREA.--111,700 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

PERIOD OF RECORD.--Oct. 1989 to Mar. 1993, Mar. 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,100 ft above sea level.

REMARKS.--Records fair. Flow completely regulated since Mar. 13, 1963, by Lake Powell 4,500 ft upstream. Many diversions above Lake Powell for irrigation, municipal, and industrial use. No diversion or inflow between Lake Powell and the gage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,000 ft³/s Sept. 7, 2000, gage height, 38.48 ft. Minimum daily discharge, 2,570 ft³/s Oct. 29, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19,500 ft³/s Aug. 7 at 1735, gage height, 35.42 ft. Minimum daily discharge, 7,280 ft³/s Oct. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10300	10300	13900	11600	11300	10200	10500	10200	12800	15300	14900	8730
2	10100	10400	10300	13900	9870	9290	10400	10500	12000	15300	14800	7350
3	10100	9450	13800	13500	9470	9360	10400	10900	13200	15200	14300	8540
4	10200	9060	14000	13900	11200	9910	10400	10100	13200	13300	13600	8360
5	10200	10400	13900	11900	11200	9990	10500	9490	13000	14900	14700	8360
6	10200	10300	13700	11100	11000	10000	9490	10700	13000	14500	15100	8340
7	7380	10300	13700	13500	10900	10200	9440	10500	13000	13300	15200	7900
8	10200	10000	12800	13600	11000	10200	10500	10500	12200	14700	15400	7310
9	10300	10300	9840	13600	9980	9500	10500	10500	11800	14700	15100	8410
10	10400	10000	13500	13600	9590	9320	10500	10600	13000	14800	14100	8580
11	10200	8790	13600	13700	11400	10200	10700	9800	13000	15500	13500	8600
12	10200	10300	13600	12100	11300	9950	10600	9440	13000	15400	14900	8560
13	10100	10300	13500	11000	11300	10100	9670	10500	13000	15200	14900	8560
14	7320	10300	13500	13500	11200	10100	9490	10500	13000	13400	15000	7930
15	10200	10400	13100	13300	11200	10100	10700	10500	12200	15300	15100	7380
16	10200	10100	10100	13800	9940	9600	10600	10600	11800	15300	15100	8480
17	10200	10100	13500	13700	9780	9510	10700	10400	13000	15300	14400	8410
18	10200	9170	13500	13600	11300	10500	10700	10200	13000	15300	13700	8500
19	10300	10500	13800	11700	11300	10100	10700	9380	13000	15000	15100	8630
20	e10100	10400	13800	11000	11300	10000	9790	10100	13100	15000	14900	8640
21	e7300	10300	13700	13600	11200	10100	9520	10500	13300	13400	15100	7930
22	10200	9320	13200	13700	11200	10100	10800	10500	12300	15100	15000	7400
23	10200	10400	10200	13600	9960	9170	10600	10300	11700	15200	13200	8480
24	10200	10300	13600	13600	9790	9360	10600	8030	13000	15000	14300	8460
25	10200	9390	10600	13700	11300	9900	10600	8070	13000	15000	13400	8460
26	10200	10900	13400	11600	11300	9870	10600	8110	13100	15100	15100	8440
27	10100	10900	13700	12000	11100	10200	9640	8130	13000	14900	15300	8480
28	7280	11000	13800	13800	11000	10100	9390	8140	13000	13600	15300	7380
29	10100	10800	13000	13300	---	10100	10500	8170	12300	15100	15100	7440
30	10100	10900	10900	13300	---	9280	10600	8190	11900	15200	15100	8450
31	10200	---	13800	13400	---	9310	---	8210	---	15400	14600	---
TOTAL	304480	305080	401340	403200	302380	305620	309130	301760	381900	459700	455300	246490
MEAN	9822	10170	12950	13010	10800	9859	10300	9734	12730	14830	14690	8216
MAX	10400	11000	14000	13900	11400	10500	10800	10900	13300	15500	15400	8730
MIN	7280	8790	9840	11000	9470	9170	9390	8030	11700	13300	13200	7310
AC-FT	603900	605100	796100	799700	599800	606200	613200	598500	757500	911800	903100	488900
CAL YR 2001	TOTAL 4036780	MEAN 11060	MAX 14700	MIN 6770	AC-FT 8007000							
WTR YR 2002	TOTAL 4176380	MEAN 11440	MAX 15500	MIN 7280	AC-FT 8284000							

e Estimated

COLORADO RIVER MAIN STEM

**09380000 COLORADO RIVER AT LEES FERRY, AZ
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK)**

LOCATION.--Lat 36° 51' 53", long 111° 35' 15", in NE1/4SE1/4 sec. 13, T.40 N., R.7 E., Coconino County, Hydrologic Unit 14070006, in Navajo Indian Reservation, on left bank at head of Marble Gorge at Lees Ferry, just upstream from Paria River, 16 mi downstream from Glen Canyon Dam, 28 mi downstream from Utah-Arizona State line, and 61.5 mi upstream from Little Colorado River.

DRAINAGE AREA.--111,800 mi², approximately, including 3,959 mi² in Great Divide Basin in southern Wyoming, which is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jan. 1895 to current year. Estimates of monthly and annual discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 859: 1921--23. WSP 1313: 1914--21.

GAGE.--Water-stage recorder. Datum of gage is 3,106.16 ft above sea level. Prior to Jan. 19, 1923, nonrecording gages or reference points within 400 ft of present gage, at different datums.

REMARKS.--No estimated daily discharge. Records good. Flow regulated since Mar. 13, 1963, by Lake Powell, 16 mi upstream. Many diversions above Lake Powell for irrigation, municipal, and industrial use. No diversions or inflow between Lake Powell and the gage.

AVERAGE DISCHARGE.--51 years (water years 1912--62), 17,850 ft³/s, 12,930,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--1895--1962: Maximum discharge, 220,000 ft³/s June 18, 1921, gage height, 26.5 ft, from floodmarks, from rating curve extended above 120,000 ft³/s on basis of discharge computed for station near Grand Canyon; minimum, 750 ft³/s Dec. 27, 1924.

1963--2000: Maximum discharge, 97,300 ft³/s June 29, 1983, gage height, 18.14 ft; minimum daily, 700 ft³/s Jan. 23, 24, 1963, result of closing coffer dam at Glen Canyon Dam.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1868, about 300,000 ft³/s July 7, 1884, gage height, 31.5 ft, present site and datum, from floodmark at mouth of Paria River, from rating curve extended above 120,000 ft³/s on basis of discharge computed for flood of June 18, 1921, for station near Grand Canyon.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19,000 ft³/s Aug. 7 at 1945, gage height, 10.39 ft. Minimum daily discharge, 7,070 ft³/s Sept. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9900	10400	13500	11900	11600	10300	10600	10500	11900	15100	15200	9740
2	10200	10500	10700	13800	10100	9350	10500	10500	12200	15400	14900	7570
3	10100	9610	13600	13600	9570	9390	10500	11000	13200	15300	14400	8540
4	10200	8970	14100	13900	11100	9920	10400	10300	13300	13500	13800	8560
5	10200	10500	14200	12200	11300	10100	10500	9600	13100	14900	14700	8470
6	10200	10500	13800	11200	11100	10200	9610	10700	13000	14600	15100	8460
7	7750	10300	13800	13500	10900	10200	9490	10600	13100	13600	15300	7630
8	9920	10100	12900	13700	11000	10300	10500	10600	12400	14700	15400	7070
9	10400	10400	10200	13700	10200	9570	10500	10600	12000	14800	15100	8390
10	10400	10100	13400	13700	9570	9390	10500	10700	13100	14900	14100	8590
11	10300	8870	13700	13800	11400	10200	10800	10100	13100	15500	13800	8660
12	10300	10400	13700	12400	11400	10200	10600	9550	13100	15600	14900	8600
13	10100	10400	13600	11100	11300	10200	9760	10400	13100	15400	15000	8640
14	7670	10400	13600	13300	11300	10200	9480	10600	13100	13600	15000	8050
15	9910	10500	13300	13400	11300	10300	10500	10600	12400	15300	15100	7540
16	10300	10000	10500	13900	10100	9620	10600	10700	11900	15400	15200	8420
17	10300	10200	13300	13800	9780	9640	10600	10600	13100	15400	14400	8440
18	10300	9240	13600	13700	11300	10600	10700	10300	13100	15400	14000	8540
19	10300	10500	13800	12000	11400	10200	10700	9610	13100	15100	15100	8590
20	10100	10500	14000	11000	11400	10100	9910	10200	13200	15200	15000	8650
21	7700	10400	13800	13600	11300	10200	9560	10600	13300	13700	15100	8000
22	10000	9440	13200	13800	11300	10200	10700	10600	12500	15000	15000	7520
23	10200	10400	10700	13700	10200	9240	10700	10500	11900	15300	13600	8340
24	10300	10400	13400	13700	9740	9430	10700	8330	13100	15100	14300	8430
25	10300	9310	10900	13700	11300	9980	10700	8170	13100	15100	13700	8460
26	10300	11000	13300	11900	11400	10000	10700	8160	13100	15200	15100	8440
27	10200	11000	13700	12000	11200	10200	9800	8160	13100	15100	15200	8440
28	7700	11100	13900	13700	11100	10100	9500	8200	13100	13800	15500	7600
29	9910	10900	13100	13400	---	10100	10500	8140	12400	15000	15100	7400
30	10200	11000	11200	13500	---	9350	10700	8200	12000	15200	15100	8310
31	10300	---	13700	13500	---	9380	---	8210	---	15300	14700	---
TOTAL	305960	307340	404200	406100	304660	308160	310310	305030	384100	462500	457900	248090
MEAN	9870	10240	13040	13100	10880	9941	10340	9840	12800	14920	14770	8270
MAX	10400	11100	14200	13900	11600	10600	10800	11000	13300	15600	15500	9740
MIN	7670	8870	10200	11000	9570	9240	9480	8140	11900	13500	13600	7070
AC-FT	606900	609600	801700	805500	604300	611200	615500	605000	761900	917400	908200	492100
CAL YR 2001	TOTAL 4079080	MEAN 11180	MAX 14900	MIN 6800	AC-FT 8091000							
WTR YR 2002	TOTAL 4204350	MEAN 11520	MAX 15600	MIN 7070	AC-FT 8339000							

COLORADO RIVER MAIN STEM

09380000 COLORADO RIVER AT LEES FERRY, AZ—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD--Jan. to July 1926, Oct. 1926 to June 1927, Aug. 1928 to Dec. 1933, Nov. 1942 to Oct. 1945, Oct. 1947 to current year.

PERIOD OF DAILY RECORD--

SPECIFIC CONDUCTANCE: Oct. 1964 to Sept. 1981, Feb. 1982 to Dec. 1987, Oct. 1989 to current year.

pH: Aug. 1990 to Apr. 1993.

WATER TEMPERATURE: July 1949 to Sept. 1981, Feb. 1982 to Dec. 1987, Oct. 1989 to current year.

DISSOLVED OXYGEN: Aug. 1990 to Apr. 1993.

SUSPENDED-SEDIMENT DISCHARGE: Oct. 1928 to Dec. 1933, Nov. 1942 to Sept. 1944, Oct. 1947 to Sept. 1965.

TURBIDITY: Oct. 1998 to Sept. 2000, minimum daily values.

INSTRUMENTATION--Specific conductance and water temperature recorder Mar. 1977 to Sept. 1981, Feb. 1982 to Dec. 1987, and Oct. 1990 to current year; pH, Aug. 1990 to Apr. 1993; dissolved-oxygen recorder Aug. 1990 to Apr. 1993.

REMARKS--Daily water temperature and specific conductance records good. Unpublished daily specific conductance measurements for period Nov. 1942 to Oct. 1945, Oct. 1947 to Sept. 1964 available from District Office in Tucson, AZ. Extreme value for the period of record include only those obtained after a normal flow release pattern from Glen Canyon Dam was started after July 31, 1965.

EXTREMES FOR PERIOD OF RECORD--

SPECIFIC CONDUCTANCE (Aug. 1965 to Sept. 1981, Feb. 1982 to Dec. 1987, Oct. 1990 to current year): Maximum, 1,260 microsiemens, Apr. 20, 21, 1967; minimum, 460 microsiemens, Aug. 10, 1965.

pH: Maximum, 8.3, on many days in Jan. to Apr. and June 1991; minimum, 7.6, on several days in Nov. and Dec. 1990, and Mar. 1991.

WATER TEMPERATURE (Aug. 1965 to Sept. 1981, Feb. 1982 to Dec. 1987, Oct. 1990 to current year): Maximum, 21.0° C on several days during Aug., Sept., and Oct. 1965, 1967, 1968; minimum, 2.0° C on Jan. 29, 30, 1970.

DISSOLVED OXYGEN: Maximum recorded, 11.2 mg/L, Apr. 29, 1991; minimum recorded, 6.4 mg/L, Sept. 18, 1991.

TURBIDITY: Minimum daily, less than 1.0 NTU on most days.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TUR-BID-ITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH (PER-CENT SATUR-ATION) (00301)	PH WATER FIELD CON-ARD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	HARD-NESS TOTAL AS CACO3 (MG/L) (00900)
DEC 11...	1020	9	14600	.42	680	7.1	69	7.9	730	7.5	9.0	120	250
MAR 12...	1000	9	10600	.66	685	8.1	76	8.1	789	11.1	8.0	120	250
APR 17...	1000	9	10700	.36	650	7.8	78	8.0	821	23.0	8.5	100	260
MAY 21...	0930	9	10300	.41	678	8.0	77	8.1	822	25.0	8.5	130	270
MAY 21...	0940	7	10300	.46	678	8.0	77	8.1	822	25.0	8.5	130	270
Date	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	CALCIUM TOTAL RECOV-ERABLE (MG/L AS MG) (00916)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT DIS TOT IT (MG/L AS) (39086)	BICAR-BONATE WATER DIS IT (MG/L AS) (00453)	CAR-BONATE WATER DIS IT (MG/L AS) (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
DEC 11...	63.0	62.0	22.0	21.0	3.10	2	57.0	130	157	<1	38.0	.3	190
MAR 12...	64.0	64.0	23.0	22.0	3.10	2	63.0	135	162	1	45.0	.3	200
APR 17...	66.0	68.0	22.0	23.0	3.10	2	66.0	154	186	1	51.0	.3	210
MAY 21...	69.0	68.0	23.0	23.0	3.20	2	68.0	139	167	1	52.0	.3	210
MAY 21...	69.0	68.0	23.0	23.0	3.20	2	69.0	137	164	1	52.0	.3	210
Date	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	E COLI, MTEC MF WATER (COL/100 ML) (31633)	COLI-FORM, FECAL, UM-MF (COLS./100 ML) (31625)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)
DEC 11...	<1c1	.61	E480c1	451	<.20c1	.04	.05	.290	E.02c1	<5	E1k	E2k	<1
MAR 12...	2	.69	511	479	<.20	<.01	--	.250	<.02	<5	E8k	<1	<1
APR 17...	<1	.72	532	511	<.20	.02	.03	.300	<.02	6	<1k	E1k	<1
MAY 21...	3	.73	537	509	<.20	<.01	--	.310	<.02	13	E1k	E2k	<1
MAY 21...	1	.73	536	509	<.20	<.01	--	.310	<.02	10	--	--	<1

COLORADO RIVER MAIN STEM

09380000 COLORADO RIVER AT LEES FERRY, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL- LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL- LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO- MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO- MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
DEC 11...	<1	1	2	88.0	89.0	<1	<1	72	70	<.5	<.5	<1	<1
MAR 12...	<1	2	2	84.0	86.0	<1	<1	77	77	<.5	<.5	<1	<1
APR 17...	<1	2	1	83.0	85.0	<1	<1	77	79	<.5	<.5	<1	<1
MAY 21...	<1	1	1	87.0	88.0	<1	<1	79	80	<.5	<.5	<1	<1
MAY 21...	<1	<1	1	86.0	88.0	<1	<1	79	80	<.5	<.5	<1	<1

Date	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA- NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA- NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE- NIUM, DIS-SOLVED (UG/L AS SE) (01145)
DEC 11...	<2	<2	<2	7	<2	<2	<1	1	<.10	<.1	1	<1	1
MAR 12...	<2	<2	<2	9	<2	<2	<1	<1	<.10	<.1	1	<1	2
APR 17...	<2	<2	<2	7	<2	<2	<1	1	<.10	<.1	<1	<1	2
MAY 21...	<2	<2	<2	7	<2	<2	<1	1	<.10	<.1	<1	<1	2
MAY 21...	<2	<2	<2	8	<2	<2	<1	1	<.10	<.1	1	<1	2

Date	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	STRON- TIUM, TOTAL RECOV-ERABLE (UG/L AS SR) (01082)	THAL- LIUM, DIS-SOLVED (UG/L AS TL) (01057)	THAL- LIUM, TOTAL RECOV-ERABLE (UG/L AS TL) (01059)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI- MENT, SUS-PENDED (MG/L AS ZN) (80154)	SEDI- MENT, SUS-PENDED (MG/L AS ZN) (80155)
DEC 11...	2	<1	<1	740	<2	<2	<2	3	11	434
MAR 12...	2	<1	<1	750	<2	<2	2	<2	1.0	28.6
APR 17...	2	<1	<1	780	<2	<2	11r	8r	1.0	28.9
MAY 21...	2	<1	<1	790	<2	<2	2	2	1.0	27.8
MAY 21...	2	<1	<1	780	<2	<2	4	3	--	--

Remark codes used in this report:
 < -- Less than
 E -- Estimated value
 Value qualifier codes used in this report:
 c -- See laboratory comment
 k -- Counts outside acceptable range
 l -- Sample lab preparation problem
 r -- Value verified by rerun, same method

COLORADO RIVER MAIN STEM

09380000 COLORADO RIVER AT LEES FERRY, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Water-quality measurements in the following table were made as part of the ADEQ Fixed-Station Network Program. The following analyses are quality-assurance samples processed during the 2002 sampling period and are defined in the introductory text section titled "Water-Quality Control Data".

Date	Time	Sample type	CALCIUM	MAGNE-	SODIUM,	NITRO-	NITRO-	NITRO-	PHOS-	ALUM-	BARIUM,	BERYL-	CADMIUM
			DIS-	SIUM,	DIS-	GEN,AM-	GEN,	GEN,	INUM,	DIS-	LIUM,	DIS-	DIS-
			SOLVED	SOLVED	SOLVED	ORGANIC	AMMONIA	NO2+NO3	PHORUS	SOLVED	SOLVED	SOLVED	SOLVED
			(MG/L	(MG/L	(MG/L	TOTAL	TOTAL	TOTAL	TOTAL	(UG/L	(UG/L	(UG/L	(UG/L
			AS CA)	AS MG)	AS NA)	AS N)	AS N)	AS N)	AS P)	AS AL)	AS BA)	AS BE)	AS CD)
			(00915)	(00925)	(00930)	(00625)	(00610)	(00630)	(00665)	(01106)	(01005)	(01010)	(01025)
APR													
17...	1010	2	.04	<.03	<.1	<.20	.02	<.020	<.02	<3	<.5	<1	<.5
Date			CHRO-	COPPER,	IRON,	LEAD,	MANGA-	NICKEL,	ZINC,				
			MIUM,	DIS-	DIS-	DIS-	NESE,	DIS-	DIS-	DIS-			
			SOLVED	SOLVED	SOLVED	SOLVED	SOLVED	SOLVED	SOLVED				
			(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L				
			AS CR)	AS CU)	AS FE)	AS PB)	AS MN)	AS NI)	AS ZN)				
			(01030)	(01040)	(01046)	(01049)	(01056)	(01065)	(01090)				
APR													
17...	<1	<2	<2	<2	<1	<1	<2						

Remark codes used in this report:

< -- Less than

COLORADO RIVER MAIN STEM

09380000 COLORADO RIVER AT LEES FERRY, AZ—CONTINUED

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C) , WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	733	721	727	728	717	723	736	719	727	729	721	723
2	730	722	726	725	707	716	738	730	735	731	720	726
3	736	724	728	720	709	714	731	723	728	728	721	723
4	734	723	730	722	706	715	730	723	728	721	714	718
5	730	725	728	721	714	719	730	722	727	717	712	714
6	732	721	728	724	715	719	723	712	717	714	709	710
7	730	720	725	728	713	720	726	718	721	716	709	712
8	735	716	725	728	719	724	729	720	725	720	713	716
9	734	724	729	730	718	724	730	724	728	719	711	716
10	734	721	725	722	707	715	730	724	726	718	708	714
11	735	717	726	714	708	711	729	717	722	715	708	711
12	737	721	726	716	700	709	719	713	717	718	711	715
13	737	721	729	720	709	715	717	712	714	717	713	715
14	728	714	720	724	713	720	725	712	717	720	713	716
15	732	718	722	730	710	721	731	723	725	721	707	715
16	732	722	727	719	707	713	737	720	732	729	720	724
17	728	714	721	720	708	715	725	715	720	721	713	718
18	725	714	720	722	711	716	719	715	718	720	712	716
19	727	716	721	721	714	718	722	715	718	725	707	720
20	730	717	725	722	710	718	720	716	718	715	701	708
21	731	721	726	721	708	716	722	716	719	727	706	719
22	731	723	726	718	707	713	728	713	720	734	723	729
23	730	720	726	718	711	714	713	709	711	766	729	746
24	731	718	727	727	705	716	721	710	716	743	713	728
25	729	716	725	726	711	718	724	717	719	725	713	719
26	727	706	716	728	711	719	724	717	720	734	716	728
27	734	723	730	731	697	716	718	713	715	730	710	718
28	734	728	731	721	710	717	718	712	715	715	704	710
29	730	719	726	726	716	721	718	713	715	748	714	732
30	730	716	724	730	724	727	714	711	712	750	716	731
31	730	716	724	---	---	---	724	712	716	755	726	739
MONTH	737	706	725	731	697	717	738	709	721	766	701	720

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C) , WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	752	726	734	795	735	762	806	788	797	823	800	811
2	732	717	722	793	761	781	803	792	798	828	802	814
3	723	710	718	769	720	740	801	793	798	858	808	837
4	713	708	710	757	731	743	814	794	805	832	811	824
5	712	709	711	753	744	748	812	794	804	811	794	798
6	714	707	711	746	738	743	811	805	809	818	798	808
7	714	708	712	770	736	749	820	789	805	821	811	816
8	715	707	711	804	770	790	822	781	810	829	812	822
9	717	712	714	825	767	807	842	755	801	865	799	818
10	717	705	708	801	750	780	844	830	840	862	813	826
11	712	702	707	796	750	777	830	809	817	827	806	818
12	714	705	708	777	765	771	825	799	809	822	785	807
13	717	714	716	768	758	764	824	812	817	840	782	817
14	717	713	715	840	758	810	817	790	809	835	796	809
15	716	713	715	846	795	819	802	790	794	796	786	791
16	714	711	713	829	772	789	861	796	834	805	787	796
17	716	709	712	812	789	796	830	799	815	805	799	802
18	720	710	712	804	785	793	890	830	864	802	795	799
19	746	717	728	795	782	791	856	798	834	809	798	801
20	731	719	726	795	774	784	855	795	823	811	795	803
21	741	717	728	785	778	782	862	823	850	814	798	808
22	734	705	717	784	778	781	851	812	827	812	778	798
23	732	713	720	787	782	784	834	813	821	849	796	825
24	746	732	738	834	787	813	823	803	814	812	789	801
25	756	741	746	824	787	803	832	792	810	805	774	783
26	762	730	746	807	775	793	833	807	825	808	789	797
27	753	735	743	806	791	798	832	807	818	794	787	790
28	748	726	736	813	806	808	833	813	822	798	788	790
29	---	---	---	806	785	795	849	817	828	806	789	799
30	---	---	---	802	785	792	837	808	825	795	784	790
31	---	---	---	799	783	792	---	---	---	794	790	792
MONTH	762	702	721	846	720	783	890	755	817	865	774	806

COLORADO RIVER MAIN STEM
09380000 COLORADO RIVER AT LEES FERRY, AZ—CONTINUED

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C) , WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	804	789	796	794	778	783	782	769	775	760	745	752
2	806	786	798	798	773	789	774	768	771	760	746	752
3	798	777	785	803	770	789	778	758	771	766	753	759
4	808	777	791	807	766	788	785	771	778	770	747	758
5	797	778	785	---	---	e787	774	764	769	764	744	754
6	796	774	784	792	772	780	791	762	772	759	746	751
7	798	782	792	778	774	777	789	768	775	769	741	754
8	803	785	791	782	773	778	779	766	772	761	741	751
9	813	793	800	787	769	777	776	758	770	772	746	763
10	825	764	799	804	760	779	776	766	772	777	743	760
11	826	779	798	804	763	782	777	765	772	761	748	752
12	797	772	784	787	766	775	765	753	761	763	752	758
13	787	768	776	783	769	775	776	760	764	771	748	761
14	802	782	789	774	768	771	778	757	768	759	735	748
15	802	797	799	785	773	779	777	763	770	758	738	746
16	799	785	794	795	768	784	777	761	770	759	746	752
17	793	777	786	791	759	774	772	758	763	769	746	756
18	795	781	788	791	767	781	772	758	765	756	744	752
19	788	780	784	791	765	777	780	760	769	764	745	754
20	789	782	785	788	773	781	785	765	775	760	733	744
21	794	786	791	788	767	777	781	757	768	779	740	749
22	797	776	789	777	766	772	779	762	772	771	756	761
23	802	775	786	797	759	778	772	766	769	788	751	762
24	785	775	781	789	757	772	772	760	766	787	742	754
25	779	765	771	777	762	769	767	756	763	777	739	750
26	793	779	784	780	761	771	769	757	762	763	736	745
27	792	776	787	780	760	772	772	762	766	767	742	747
28	783	775	780	782	767	774	771	760	767	769	740	749
29	785	774	781	782	771	777	782	760	766	764	735	747
30	784	766	774	774	759	768	785	741	760	761	735	743
31	---	---	---	777	767	773	765	753	757	---	---	---
MONTH	826	764	788	---	---	778	791	741	768	788	733	753

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COLORADO RIVER MAIN STEM

09380000 COLORADO RIVER AT LEES FERRY, AZ—CONTINUED

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	10.1	9.6	9.9	9.2	8.8	9.0	9.1	8.7	8.9	9.4	9.1	9.2
2	10.1	9.4	9.8	9.2	8.7	9.0	9.1	8.9	9.0	9.2	8.9	9.1
3	10.1	9.5	9.8	9.4	8.9	9.1	9.1	8.8	9.0	9.3	9.0	9.1
4	10.1	9.5	9.8	9.4	8.8	9.1	9.1	8.8	8.9	9.4	9.1	9.2
5	10.0	9.5	9.8	9.5	9.1	9.3	9.1	8.7	8.9	9.3	9.0	9.2
6	10.0	9.5	9.8	9.6	9.1	9.4	9.0	8.8	8.9	9.4	9.1	9.2
7	10.3	9.6	9.9	9.5	9.1	9.3	9.0	8.7	8.9	9.3	9.0	9.2
8	10.1	9.5	9.8	9.3	9.0	9.1	8.9	8.6	8.8	9.3	9.0	9.2
9	9.9	9.4	9.6	9.2	8.8	9.0	8.8	8.5	8.6	9.3	9.0	9.2
10	9.7	9.1	9.5	9.4	8.9	9.2	9.1	8.6	8.8	9.3	9.0	9.2
11	9.8	9.1	9.5	9.5	9.1	9.3	9.3	8.9	9.1	9.3	8.9	9.1
12	9.8	9.3	9.6	9.4	9.0	9.2	9.3	9.0	9.2	9.2	8.9	9.0
13	9.8	9.3	9.6	9.3	8.9	9.1	9.2	8.8	9.0	9.1	8.7	8.9
14	10.0	9.4	9.7	9.1	8.7	8.9	9.1	8.8	9.0	9.0	8.7	8.9
15	9.9	9.4	9.7	9.2	8.7	8.9	9.1	8.6	9.0	9.1	8.7	8.9
16	9.8	9.2	9.6	9.2	8.8	9.1	8.9	8.2	8.4	8.9	8.7	8.8
17	9.9	9.3	9.6	9.2	8.8	9.1	9.3	8.9	9.1	9.0	8.6	8.8
18	9.9	9.3	9.6	9.2	8.8	9.0	9.5	9.1	9.3	8.9	8.6	8.7
19	9.9	9.3	9.6	9.1	8.8	9.0	9.7	9.3	9.5	8.8	8.3	8.5
20	9.8	9.2	9.5	9.1	8.6	8.9	9.7	9.4	9.6	8.8	8.4	8.6
21	9.8	9.2	9.5	9.2	8.7	9.0	9.6	9.3	9.5	8.8	8.3	8.6
22	9.8	9.4	9.6	9.3	8.8	9.1	9.5	9.1	9.3	8.7	8.3	8.5
23	9.8	9.3	9.5	9.2	8.8	8.9	9.6	9.4	9.5	8.5	8.0	8.3
24	9.6	9.1	9.4	8.8	8.4	8.7	9.6	9.3	9.4	8.5	8.0	8.2
25	9.7	9.0	9.4	8.8	8.3	8.5	9.4	9.0	9.2	8.5	8.1	8.3
26	9.8	9.1	9.5	8.9	8.3	8.6	9.5	8.9	9.2	8.5	8.1	8.3
27	9.8	9.3	9.6	8.9	8.3	8.6	9.6	9.3	9.5	8.6	8.2	8.4
28	9.7	9.2	9.5	9.2	8.5	8.8	9.7	9.4	9.5	8.6	8.2	8.4
29	9.6	9.1	9.4	9.2	8.9	9.0	9.7	9.5	9.6	8.4	8.1	8.2
30	9.3	9.0	9.1	9.2	8.9	9.0	9.7	9.5	9.6	8.3	7.9	8.1
31	9.4	9.0	9.2	---	---	---	9.6	9.3	9.5	8.1	7.6	7.8
MONTH	10.3	9.0	9.6	9.6	8.3	9.0	9.7	8.2	9.2	9.4	7.6	8.7

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	8.1	7.7	7.9	8.1	7.4	7.6	9.1	8.1	8.7	9.4	8.1	8.8
2	8.1	7.7	7.9	7.9	7.0	7.4	9.1	8.1	8.6	9.2	8.1	8.7
3	8.0	7.6	7.8	8.1	7.3	7.8	9.2	8.1	8.7	9.3	8.2	8.8
4	8.1	7.6	7.9	8.2	7.4	7.8	9.2	8.1	8.7	9.5	8.2	8.9
5	8.0	7.6	7.8	8.2	7.4	7.9	9.1	8.1	8.7	9.7	8.3	9.1
6	8.0	7.5	7.8	8.3	7.6	8.0	8.9	8.2	8.6	9.7	8.4	9.1
7	8.0	7.5	7.8	8.4	7.7	8.1	9.2	8.2	8.7	9.6	8.3	9.0
8	7.9	7.5	7.7	8.3	7.7	7.9	9.1	8.2	8.7	9.4	8.3	8.9
9	7.8	7.4	7.6	8.2	7.3	7.8	9.3	8.2	8.8	9.6	8.3	8.9
10	7.9	7.4	7.7	8.3	7.6	8.0	9.0	8.3	8.6	9.5	8.3	8.9
11	7.9	7.4	7.7	8.6	7.7	8.2	9.3	8.2	8.8	9.7	8.3	9.0
12	7.9	7.4	7.7	8.5	7.8	8.1	9.0	8.3	8.7	9.7	8.3	9.1
13	7.9	7.4	7.7	8.6	7.8	8.2	9.4	8.2	8.8	9.5	8.4	9.0
14	7.9	7.5	7.7	8.4	7.5	7.9	9.3	8.2	8.8	9.8	8.4	9.1
15	7.9	7.5	7.7	8.4	7.4	8.0	9.1	8.4	8.7	9.6	8.5	9.1
16	8.0	7.5	7.7	8.3	7.6	7.9	9.1	8.1	8.6	9.9	8.5	9.2
17	8.0	7.5	7.7	8.4	7.6	8.0	9.3	8.1	8.8	9.8	8.5	9.2
18	7.9	7.6	7.7	8.6	7.7	8.2	9.2	8.0	8.6	9.9	8.5	9.3
19	8.0	7.4	7.7	8.6	7.7	8.2	9.2	7.8	8.6	9.7	8.5	9.2
20	8.2	7.6	7.9	8.6	7.8	8.3	8.8	8.0	8.4	9.8	8.5	9.2
21	8.1	7.6	7.9	8.7	7.8	8.3	9.2	7.8	8.6	9.5	8.4	8.9
22	8.2	7.6	7.9	8.8	8.0	8.5	9.4	8.0	8.7	9.7	8.1	8.9
23	8.1	7.7	7.9	8.7	8.0	8.4	9.2	8.1	8.7	9.4	8.2	8.8
24	8.3	7.6	8.0	8.6	7.9	8.2	9.4	8.2	8.8	9.8	8.3	9.1
25	8.2	7.6	7.9	8.8	7.9	8.4	9.6	8.4	9.0	9.9	8.7	9.4
26	8.1	7.4	7.8	8.9	7.9	8.5	9.2	8.3	8.8	9.8	8.7	9.3
27	8.2	7.5	7.9	8.9	7.9	8.5	9.1	8.1	8.6	10.0	8.8	9.5
28	8.2	7.5	7.9	9.0	8.0	8.5	9.4	8.1	8.8	10.1	9.0	9.6
29	---	---	---	9.1	8.0	8.6	9.6	8.2	8.9	10.0	8.9	9.6
30	---	---	---	9.1	8.0	8.6	9.6	8.2	8.9	10.1	8.9	9.6
31	---	---	---	9.1	8.1	8.7	---	---	---	10.0	9.0	9.6
MONTH	8.3	7.4	7.8	9.1	7.0	8.1	9.6	7.8	8.7	10.1	8.1	9.1

COLORADO RIVER MAIN STEM
09380000 COLORADO RIVER AT LEES FERRY, AZ—CONTINUED

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	10.0	8.8	9.4	9.9	8.8	9.3	9.8	9.0	9.4	10.2	9.2	9.5
2	9.5	8.5	9.0	10.0	8.7	9.3	9.6	9.0	9.3	10.2	9.6	9.9
3	9.3	8.6	9.0	9.4	8.7	9.1	10.1	8.8	9.4	10.1	9.5	9.9
4	9.9	8.5	9.1	10.1	8.6	9.3	9.7	8.6	9.2	10.1	9.5	9.9
5	10.0	8.5	9.2	---	---	e9.3	10.0	9.1	9.5	10.0	9.5	9.8
6	10.0	8.5	9.2	10.1	8.8	9.4	9.4	9.0	9.2	10.2	9.5	9.7
7	10.1	8.5	9.3	10.1	8.9	9.4	9.9	8.8	9.3	9.8	9.3	9.5
8	10.2	8.7	9.4	10.1	8.9	9.4	9.8	8.7	9.2	10.1	9.3	9.7
9	10.2	8.7	9.4	10.1	9.0	9.5	9.9	8.7	9.2	9.9	9.2	9.6
10	10.0	8.3	9.1	10.0	9.0	9.4	10.1	8.7	9.3	10.0	9.4	9.8
11	9.9	8.4	9.1	10.1	8.8	9.3	10.1	8.8	9.4	9.9	9.6	9.8
12	10.1	8.4	9.2	10.1	8.8	9.4	10.1	9.0	9.5	9.8	9.5	9.7
13	10.2	8.7	9.4	10.1	8.7	9.3	10.1	9.0	9.4	10.1	9.3	9.7
14	10.1	8.5	9.3	10.0	8.9	9.4	10.2	8.7	9.4	10.0	9.3	9.8
15	10.1	8.6	9.3	10.0	8.9	9.4	10.1	8.9	9.4	10.1	9.5	9.8
16	10.1	8.6	9.3	9.7	9.0	9.3	10.0	9.0	9.5	10.2	9.6	10.0
17	10.1	8.6	9.3	9.6	8.9	9.2	10.0	9.0	9.5	10.1	9.4	9.8
18	10.1	8.5	9.2	9.8	8.8	9.2	10.0	9.0	9.5	9.9	9.4	9.7
19	10.1	8.6	9.3	10.0	8.8	9.3	9.6	8.9	9.3	9.8	9.4	9.6
20	10.1	8.6	9.3	9.9	8.8	9.3	9.6	9.0	9.3	10.0	9.4	9.7
21	9.8	8.7	9.2	10.3	8.8	9.4	10.0	9.3	9.6	10.0	9.4	9.8
22	10.1	8.6	9.3	10.1	8.9	9.5	10.0	8.9	9.4	10.0	9.5	9.8
23	10.1	8.6	9.3	10.0	9.1	9.5	9.9	8.8	9.2	10.0	9.4	9.8
24	10.1	8.6	9.3	9.9	9.1	9.5	10.0	8.8	9.3	9.9	9.3	9.7
25	10.1	8.7	9.4	9.9	9.0	9.5	10.1	8.8	9.4	9.8	9.3	9.6
26	9.9	8.7	9.3	9.7	9.1	9.4	10.0	8.8	9.4	10.0	9.5	9.8
27	10.1	8.6	9.3	10.0	8.9	9.4	9.9	8.9	9.3	10.1	9.5	9.8
28	10.1	8.6	9.3	10.4	9.1	9.6	9.7	8.8	9.2	9.8	9.5	9.7
29	10.1	8.6	9.3	9.9	8.6	9.3	10.0	9.2	9.5	9.7	9.3	9.5
30	10.2	8.7	9.4	10.1	8.7	9.3	10.0	9.3	9.7	9.8	9.3	9.6
31	---	---	---	10.1	8.9	9.4	9.9	9.0	9.4	---	---	---
MONTH	10.2	8.3	9.3	---	---	9.4	10.2	8.6	9.4	10.2	9.2	9.7

e Estimated

PARIA RIVER BASIN

09382000 PARIA RIVER AT LEES FERRY, AZ

LOCATION.--Lat 36° 52' 20", long 111° 35' 38", in NW1/4NE1/4 sec. 13, T.40 N., R.7 E., Coconino County, Hydrologic Unit 14070007, on left bank 0.6 mi northwest of Lees Ferry, and 1.1 mi upstream from mouth.

DRAINAGE AREA.--1,410 mi².

PERIOD OF RECORD.--Oct. 1923 to current year.

REVISED RECORDS.--WSP 1925: 1958(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,123.68 ft above sea level. Prior to Oct. 5, 1925, nonrecording gage at site 2,000 ft upstream at different datum. Oct. 13, 1925, to Sept. 11, 1929, nonrecording gage at present site and datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Diversions above station for irrigation of about 3,300 acres, mostly in southern Utah.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,100 ft³/s Oct. 5, 1925, gage height, 16.3 ft, from floodmark, from rating curve extended above 2,000 ft³/s on basis of float-area measurement of peak flow; maximum gage height, 16.65 ft Sept. 9, 1980; minimum daily discharge, 1 ft³/s in most years prior to 1931.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 7	1130	*554	*7.36

Minimum daily discharge, 2.4 ft³/s Aug. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	8.7	16	23	7.7	13	4.4	3.7	3.4	2.9	2.7	3.1
2	4.9	9.1	14	22	8.4	11	4.5	3.8	3.1	2.8	3.0	3.0
3	4.8	9.1	18	20	7.4	9.4	5.1	4.1	3.5	3.0	47	3.2
4	4.8	9.0	17	19	10	11	4.9	4.0	3.6	3.2	e32	3.4
5	5.0	9.0	18	19	13	15	5.2	3.8	3.4	3.1	e6.2	3.4
6	5.1	9.3	15	15	16	15	5.4	3.9	3.4	3.2	e4.6	4.2
7	10	9.9	14	16	16	14	5.3	3.7	3.4	2.8	e3.7	e157
8	5.8	10	15	20	17	14	5.4	3.5	3.1	2.8	3.1	e342
9	13	14	14	20	18	15	5.3	3.5	2.8	2.8	2.9	e153
10	11	14	13	20	15	11	5.5	3.8	2.9	2.8	2.8	e41
11	7.3	17	15	18	12	11	4.9	3.6	3.2	2.9	2.7	e18
12	6.1	16	17	15	15	12	4.8	3.7	3.3	2.9	2.6	e14
13	7.0	15	15	17	18	10	4.8	3.9	3.4	2.8	2.4	67
14	7.3	15	9.9	18	18	11	5.4	4.0	3.4	2.8	2.5	25
15	8.4	16	7.4	16	17	7.9	5.5	3.9	3.2	2.7	2.6	15
16	8.5	15	e6.2	17	16	8.3	4.5	3.9	3.0	2.8	2.7	9.8
17	8.9	15	e14	17	16	12	4.5	3.6	3.1	2.9	2.5	7.3
18	8.8	14	e17	e12	17	13	4.4	3.7	3.0	2.9	2.5	6.5
19	8.1	14	9.6	e10	17	11	4.7	3.8	3.1	3.1	2.5	6.2
20	7.7	14	10	e9.0	16	10	5.3	3.8	3.3	3.1	3.3	6.2
21	7.4	14	11	e10	15	9.5	5.2	3.7	3.0	3.1	3.6	5.6
22	7.8	14	13	e10	15	8.7	4.9	3.6	3.0	3.0	2.7	5.4
23	8.0	14	16	21	14	7.9	4.5	4.0	3.0	2.8	2.7	5.2
24	7.2	15	14	9.9	14	7.2	4.4	4.0	3.3	2.8	2.8	5.0
25	7.6	23	11	8.8	14	7.2	4.0	4.1	3.2	4.4	2.8	4.7
26	7.5	22	12	10	13	7.6	3.9	4.1	3.2	3.1	2.8	4.7
27	7.9	16	13	12	12	6.9	3.9	4.0	3.2	3.0	2.7	4.5
28	8.3	12	16	19	13	6.2	4.1	3.9	3.2	2.8	2.9	4.3
29	8.5	9.5	27	29	---	4.9	3.9	3.7	3.1	2.6	3.0	37
30	8.5	16	30	19	---	4.6	3.8	3.6	3.0	2.8	3.0	e163
31	8.7	---	25	17	---	4.6	---	3.5	---	2.8	3.0	---
TOTAL	234.8	408.6	463.1	508.7	400.5	309.9	142.4	117.9	95.8	91.5	166.3	1127.7
MEAN	7.574	13.62	14.94	16.41	14.30	9.997	4.747	3.803	3.193	2.952	5.365	37.59
MAX	13	23	30	29	18	15	5.5	4.1	3.6	4.4	47	342
MIN	4.8	8.7	6.2	8.8	7.4	4.6	3.8	3.5	2.8	2.6	2.4	3.0
AC-FT	466	810	919	1010	794	615	282	234	190	181	330	2240

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 2002, BY WATER YEAR (WY)

	MEAN	MAX	MIN	(WY)
30.28	23.33	20.91	22.49	37.46
288	123	69.4	96.7	242
1926	1958	1967	1969	1980
5.99	10.1	8.81	8.03	14.3
1956	1991	1931	1931	2002
38.50	20.68	10.46	7.192	24.14
216	93.3	52.4	58.3	172
1979	1979	1934	1972	1936
8.86	4.75	2.03	1.97	2.32
1972	2002	1927	1926	1939
53.63	53.01	424	1927	1968

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1924 - 2002
ANNUAL TOTAL	5954.2	4067.2	
ANNUAL MEAN	16.31	11.14	28.47
HIGHEST ANNUAL MEAN			65.1
LOWEST ANNUAL MEAN			11.1
HIGHEST DAILY MEAN	189	Jun 27	342
LOWEST DAILY MEAN	2.7	Jun 13	2.4
ANNUAL SEVEN-DAY MINIMUM	2.9	Jun 16	2.5
ANNUAL RUNOFF (AC-FT)	11810	8070	20620
10 PERCENT EXCEEDS	28	17	42
50 PERCENT EXCEEDS	12	7.0	14
90 PERCENT EXCEEDS	3.6	2.9	3.7

e Estimated

PARIA RIVER BASIN
09382000 PARIA RIVER AT LEES FERRY, AZ—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD--Oct. 1948 to Sept. 1976, Sept. 1990 to current year.

INSTRUMENTATION--Automatic-pumping sampler since Sept. 1990.

REMARKS--Suspended-sediment total and sand discharge computed from sample data and by interpretation of a sample based suspended-sediment and streamflow discharge curve. Record for days when instantaneous discharge over the crest of the dam exceeds 30 ft³/s from Sept. 1990 to current year.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1470	e24600	---	---	---	476	---	---	---	---	---	---
2	---	e9930	---	---	---	390	---	---	---	---	---	---
3	---	e5560	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	389	939	---	---	---	---	---	---
8	---	---	---	---	577	11900	---	---	---	---	---	---
9	---	---	---	---	---	4690	445	---	---	---	e79900	---
10	---	---	---	---	---	11000	---	---	---	---	e21600	---
11	26500	---	---	---	---	12400	---	---	---	---	15400	---
12	e7000	---	---	---	---	4850	---	---	---	---	---	---
13	---	---	---	---	---	1900	---	---	---	---	16800	---
14	---	---	---	---	---	e804	---	---	---	---	18700	e8370
15	---	---	---	---	---	e469	---	---	---	e25900	7300	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	e17600
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	102000	---	---	---	---	1120	---	---	---	---	---	---
23	e426000	---	---	---	---	2010	---	---	---	---	---	---
24	e384000	---	---	---	---	2070	---	---	---	---	---	---
25	e16400	---	---	---	---	1750	---	---	---	---	---	---
26	3070	---	---	---	---	1370	---	---	24200	---	---	---
27	69000	---	---	---	---	---	---	---	e32600	---	---	---
28	1310000	---	---	---	---	---	---	---	---	---	---	---
29	e102000	---	---	---	---	---	---	---	---	---	---	---
30	e45000	---	---	---	---	---	---	---	---	---	---	---
31	e64200	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

e Estimated

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	7750	---
4	---	---	---	---	---	---	---	---	---	---	e1400	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	e32200
8	---	---	---	---	---	---	---	---	---	---	---	e200000
9	---	---	---	---	---	---	---	---	---	---	---	e77700
10	---	---	---	---	---	---	---	---	---	---	---	e10700
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	14400
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	16400
30	---	---	---	---	---	---	---	---	---	---	---	e46900
31	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

e Estimated

PARIA RIVER BASIN
09382000 PARIA RIVER AT LEES FERRY, AZ—CONTINUED

SEDIMENT DISCHARGE, SUSPENDED, SIEVE DIAM. GREATER THAN .062 MM (TONS/DAY)
 WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	e1250	---	---	---	41	---	---	---	---	---	---
2	---	e451	---	---	---	19	---	---	---	---	---	---
3	---	e16	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	51	55	---	---	---	---	---	---
8	---	---	---	---	58	1080	---	---	---	---	---	---
9	---	---	---	---	---	291	31	---	---	---	e19400	---
10	---	---	---	---	---	1300	---	---	---	---	e1370	---
11	3890	---	---	---	---	1590	---	---	---	---	985	---
12	e1120	---	---	---	---	346	---	---	---	---	---	---
13	---	---	---	---	---	72	---	---	---	---	433	---
14	---	---	---	---	---	e15	---	---	---	---	918	e868
15	---	---	---	---	---	e7.7	---	---	---	e2280	36	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	e1210
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	44100	---	---	---	---	29	---	---	---	---	---	---
23	e201000	---	---	---	---	50	---	---	---	---	---	---
24	162000	---	---	---	---	71	---	---	---	---	---	---
25	2390	---	---	---	---	72	---	---	---	---	---	---
26	111	---	---	---	---	44	---	---	981	---	---	---
27	14200	---	---	---	---	---	---	---	e3030	---	---	---
28	426000	---	---	---	---	---	---	---	---	---	---	---
29	e8740	---	---	---	---	---	---	---	---	---	---	---
30	e2330	---	---	---	---	---	---	---	---	---	---	---
31	e11200	---	---	---	---	---	---	---	---	---	---	---

e Estimated

SEDIMENT DISCHARGE, SUSPENDED, SIEVE DIAM. GREATER THAN .062 MM (TONS/DAY)
 WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	1210	---
4	---	---	---	---	---	---	---	---	---	---	e26	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	e7040
8	---	---	---	---	---	---	---	---	---	---	---	e40400
9	---	---	---	---	---	---	---	---	---	---	---	e5150
10	---	---	---	---	---	---	---	---	---	---	---	e154
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	1590
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	3320
30	---	---	---	---	---	---	---	---	---	---	---	e8530
31	---	---	---	---	---	---	---	---	---	---	---	---

e Estimated

COLORADO RIVER MAIN STEM

09383000 COLORADO RIVER AT COMPACT POINT, NEAR LEES FERRY, AZ

LOCATION--Lat 36° 51' 05", long 111° 36' 21", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 23, T.40 N., R.7 E., Coconino County, Hydrologic Units 14070006, 15010001, (see REMARKS), 1 mi downstream from Paria River, 1.4 mi downstream from gage on Colorado River at Lees Ferry, and 29 mi downstream from Utah-Arizona State line.

DRAINAGE AREA--112,000 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

PERIOD OF RECORD--Oct. 1913 to current year (monthly discharge only). Prior to Oct. 1950, published in WSP 1313.

DETERMINATION OF DISCHARGE--There is no gage. Monthly and yearly discharge computed as the sum of flow at stations on Colorado River and Paria River at Lees Ferry.

REMARKS--This location on the Colorado River is the dividing point between the Upper Basin and Lower Basin, as defined in the Colorado River Compact of 1922. Flow substantially regulated by Lake Powell beginning Mar. 13, 1963. (See elsewhere in this report.)

AVERAGE DISCHARGE--49 years (water years 1914-62), 17,760 ft³/s, 12,870,000 acre-ft/yr; 38 years (water years 1965-2002), 14,130 ft³/s, 10,240,000 acre-ft/yr.

Monthly discharge, water year October 2001 to September 2002

Month	Mean, in cubic feet per second	Runoff, in acre-feet
October	9,877	607,300
November	10,260	610,400
December	13,050	802,600
Calendar year 2001	11,190	8,103,000
January	13,120	806,500
February	10,890	605,100
March	9,951	611,900
April	10,350	615,800
May	9,844	605,300
June	12,810	762,000
July	14,920	917,600
August	14,780	908,900
September	8,306	494,300
Water year 2002	11,530	8,348,000

NOTE.--Record shown is sum of flow at stations on Colorado River and Paria River at Lees Ferry.

LITTLE COLORADO RIVER BASIN

09384000 LITTLE COLORADO RIVER ABOVE LYMAN LAKE, NEAR ST. JOHNS, AZ

LOCATION--Lat 34° 18'52", long 109° 21'42", in SW¼SE¼ sec. 27, T.11 N., R.28 E., Apache County, Hydrologic Unit 15020001, on left bank 0.75 mi downstream from Coyote Creek, 6 mi upstream from Lyman Dam, and 15 mi south of St. Johns.

DRAINAGE AREA--706 mi², of which 2.5 mi² is noncontributing.

PERIOD OF RECORD--Apr. 1940 to current year. Prior to Oct. 1975 published as "above Lyman Reservoir."

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

GAGE--Water-stage recorder and crest-stage gage. Elevation of gage is 6,010 ft above sea level, from topographic map. Prior to Dec. 7, 1976, water-stage recorder at site 0.4 mi downstream at datum approximately 20 ft lower, used as supplemental gage Mar. 21, 1980, to Apr. 21, 1987. See WSP 1313 for history of changes prior to 1950.

REMARKS--Records fair for estimated daily discharges, which are poor. Flow regulated by many small reservoirs--combined capacity, about 15,500 acre-ft. Diversions for irrigation of about 6,700 acres above station.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 16,000 ft³/s July 25, 1940, gage height, 17.1 ft, datum then in use, from floodmarks, by slope-area measurement of peak flow and reservoir inflow studies; maximum gage height, 18.6 ft, Sept. 12, 1975, at previous site (from graph recorded to 18.4 ft); no flow at times.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 400 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 11.....	1230	*539	*5.14

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.71	2.3	e3.2	e4.9	e4.8	3.4	4.3	0.21	0.08	e0.01	0.88	0.11
2	0.73	2.2	e3.3	e4.7	e4.9	3.5	3.9	0.21	0.08	e0.01	0.59	0.09
3	0.71	2.2	e3.4	e4.2	e4.7	3.2	3.2	0.21	0.09	e0.01	5.3	0.07
4	0.78	2.4	3.8	e4.1	e4.5	2.9	2.7	0.23	0.07	e0.01	7.3	0.17
5	0.69	2.5	3.8	e4.0	e4.1	3.1	2.7	0.69	0.07	e0.01	8.2	0.11
6	0.81	2.5	e3.2	e4.1	e3.9	3.4	2.7	0.65	0.05	e0.01	9.9	0.22
7	1.4	2.3	e3.1	e4.4	e3.8	3.7	3.4	0.60	0.04	e0.01	12	0.28
8	1.9	2.1	e3.0	e4.7	e3.7	4.2	3.9	0.55	0.04	e0.01	11	4.2
9	1.8	1.6	e3.1	e4.8	e3.6	4.3	4.2	0.72	0.03	e0.01	13	0.81
10	2.1	1.2	e3.1	e5.7	e3.5	4.6	3.6	0.54	0.04	e0.01	9.9	0.80
11	2.1	1.1	e3.3	e5.7	e3.8	4.3	3.2	0.46	0.03	e0.01	7.7	112
12	2.1	0.98	e3.5	5.2	4.1	4.3	2.7	0.48	0.03	e0.01	6.3	75
13	2.0	0.95	e3.8	5.0	4.4	4.4	2.5	0.71	0.03	e0.01	5.3	24
14	2.1	0.99	e4.0	4.3	4.3	4.4	2.2	1.0	0.03	e0.01	4.4	17
15	2.3	0.99	e4.0	4.5	4.2	4.5	2.0	1.8	0.02	e0.01	2.8	12
16	2.4	1.1	e3.8	4.0	4.4	3.9	2.1	1.1	0.02	0.01	0.31	7.9
17	2.3	1.3	e3.6	4.2	4.5	3.3	2.1	0.89	e0.01	0.03	0.24	5.9
18	2.6	1.1	e3.8	4.0	4.2	3.2	1.3	0.41	0.02	0.03	0.32	12
19	2.4	1.0	e4.0	3.4	4.3	3.5	0.69	0.46	0.02	0.02	0.76	12
20	2.2	1.0	e4.0	3.4	3.8	3.6	0.45	0.45	e0.01	0.02	2.8	4.7
21	2.3	1.0	e4.1	3.0	3.4	3.5	0.40	0.37	e0.01	0.01	0.76	3.4
22	2.6	1.1	e3.8	e3.2	3.3	3.0	0.37	0.32	e0.01	0.01	0.31	4.0
23	2.8	1.3	e3.8	e3.4	3.6	2.7	0.31	0.37	e0.01	0.02	0.12	4.2
24	2.9	1.6	e4.7	3.5	3.4	2.6	0.29	0.23	e0.01	0.03	0.09	3.9
25	2.8	2.1	e4.0	e4.1	3.4	2.3	0.30	0.21	e0.01	0.03	0.08	3.4
26	2.9	2.5	e4.2	e4.5	3.5	2.2	0.28	0.17	e0.01	0.01	0.06	3.3
27	2.5	2.4	e3.9	e5.5	3.2	3.0	0.26	0.14	0.02	9.9	0.05	3.2
28	2.4	2.7	e4.2	5.1	3.3	3.1	0.25	0.11	0.03	40	0.04	2.0
29	2.4	2.6	e4.7	4.5	---	3.4	0.23	0.16	0.02	15	0.05	1.9
30	2.3	e2.9	e5.0	e4.1	---	3.7	0.21	0.13	e0.01	4.7	0.07	2.2
31	2.2	---	e5.0	e4.4	---	3.7	---	0.09	---	1.6	0.07	---
TOTAL	62.23	52.01	118.2	134.6	110.6	108.9	56.74	14.67	0.95	71.57	110.70	320.86
MEAN	2.007	1.734	3.813	4.342	3.950	3.513	1.891	0.473	0.032	2.309	3.571	10.70
MAX	2.9	2.9	5.0	5.7	4.9	4.6	4.3	1.8	0.09	40	13	112
MIN	0.69	0.95	3.0	3.0	3.2	2.2	0.21	0.09	0.01	0.01	0.04	0.07
AC-FT	123	103	234	267	219	216	113	29	1.9	142	220	636

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2002, BY WATER YEAR (WY)

MEAN	9.297	7.992	9.928	10.57	12.51	30.17	92.88	35.73	9.232	9.720	22.83	12.94
MAX	213	37.8	46.6	38.9	43.3	182	397	374	95.4	40.3	143	105
(WY)	1984	1987	1979	1942	1962	1985	1979	1941	1973	1967	1955	1946
MIN	0.074	0.32	0.83	2.08	2.84	1.89	1.26	0.44	0.010	0.000	0.59	0.017
(WY)	1957	1957	1957	1957	1957	1990	1996	2000	1959	1963	2000	1960

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1941 - 2002
ANNUAL TOTAL	6697.57	1162.03	
ANNUAL MEAN	18.35	3.184	21.96
HIGHEST ANNUAL MEAN			71.6
LOWEST ANNUAL MEAN			2.94
HIGHEST DAILY MEAN	200	112	1660
LOWEST DAILY MEAN	0.11	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.19	0.01	0.00
ANNUAL RUNOFF (AC-FT)	13280	2300	15910
10 PERCENT EXCEEDS	56	4.7	43
50 PERCENT EXCEEDS	4.0	2.4	6.8
90 PERCENT EXCEEDS	1.00	0.02	1.1

e Estimated

LITTLE COLORADO RIVER BASIN

09385700 LITTLE COLORADO RIVER BELOW SALADO SPRINGS, NEAR ST. JOHNS, AZ

LOCATION--Lat 34° 27'02", Long 109° 21'42", in NW_{1/4}SE_{1/4}SE_{1/4} sec. 10, T.12 N., R.28 E., Apache County, Hydrologic Unit 15020002, 2.2 miles upstream from the State Highway 61 bridge in St. Johns.

DRAINAGE AREA--845 mi².

PERIOD OF RECORD--Jan. 1985 to Dec. 1986, July 2002 to current year.

GAGE--Water-stage recorder. Elevation of gage is 5,785 ft. above sea level, from topographic map.

REMARKS--Records good except for estimated daily discharges and those greater than 50 ft³/s, which are poor. Flow partially regulated by Lyman Lake. Many diversions for irrigation above station.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 478 ft³/s, Sept. 8, 2002, gage height, 10.84 ft., from an extension of the rating curve. Minimum daily 1.1 ft³/s, Sept. 5, 2002.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 120 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 8.....	1515	*478	*10.84
Sept. 10.....	1845	191	10.26
Sept. 18.....	1515	158	10.15

Minimum daily discharge, 1.1 ft³/s, Sept. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	7.7	1.3
2	---	---	---	---	---	---	---	---	---	---	8.1	1.2
3	---	---	---	---	---	---	---	---	---	---	8.5	1.2
4	---	---	---	---	---	---	---	---	---	---	8.8	1.2
5	---	---	---	---	---	---	---	---	---	---	9.2	1.1
6	---	---	---	---	---	---	---	---	---	---	33	3.2
7	---	---	---	---	---	---	---	---	---	---	16	1.5
8	---	---	---	---	---	---	---	---	---	---	4.3	18
9	---	---	---	---	---	---	---	---	---	---	1.7	11
10	---	---	---	---	---	---	---	---	---	---	1.4	21
11	---	---	---	---	---	---	---	---	---	---	2.1	e70
12	---	---	---	---	---	---	---	---	---	---	2.2	e24
13	---	---	---	---	---	---	---	---	---	---	2.7	e7.5
14	---	---	---	---	---	---	---	---	---	---	4.0	3.8
15	---	---	---	---	---	---	---	---	---	---	4.8	2.7
16	---	---	---	---	---	---	---	---	---	---	5.1	2.0
17	---	---	---	---	---	---	---	---	---	---	5.5	1.7
18	---	---	---	---	---	---	---	---	---	---	4.9	e42
19	---	---	---	---	---	---	---	---	---	---	3.3	e32
20	---	---	---	---	---	---	---	---	---	---	2.1	14
21	---	---	---	---	---	---	---	---	---	1.7	1.6	13
22	---	---	---	---	---	---	---	---	---	1.5	2.7	e11
23	---	---	---	---	---	---	---	---	---	1.5	5.1	e9.0
24	---	---	---	---	---	---	---	---	---	1.5	5.0	e8.0
25	---	---	---	---	---	---	---	---	---	2.2	5.1	7.3
26	---	---	---	---	---	---	---	---	---	1.3	5.0	6.6
27	---	---	---	---	---	---	---	---	---	21	5.0	5.9
28	---	---	---	---	---	---	---	---	---	5.2	5.2	5.0
29	---	---	---	---	---	---	---	---	---	2.5	5.9	4.3
30	---	---	---	---	---	---	---	---	---	5.5	4.7	3.9
31	---	---	---	---	---	---	---	---	---	7.9	1.6	---
TOTAL	---	---	---	---	---	---	---	---	---	---	181.9	334.4
MEAN	---	---	---	---	---	---	---	---	---	---	5.868	11.15
MAX	---	---	---	---	---	---	---	---	---	---	33	70
MIN	---	---	---	---	---	---	---	---	---	---	1.4	1.1
MED	---	---	---	---	---	---	---	---	---	---	5.0	6.3
AC-FT	---	---	---	---	---	---	---	---	---	---	361	663
CFSM	---	---	---	---	---	---	---	---	---	---	0.01	0.01

e Estimated

LITTLE COLORADO RIVER BASIN

09386020 CARRIZO WASH NEAR ST. JOHNS, AZ

LOCATION--Lat 34° 36'53", long 109° 19'04", T.14 N., R.28 E., unsurveyed, Apache County, Hydrologic Unit 1502002, on east side of Carrizo Wash bridge pier on U.S. Highway 666 (AZ Highway 61), 8.5 mi north of St. Johns.

DRAINAGE AREA--Not determined.

PERIOD OF RECORD--Aug. 1998 to current year.

GAGE--Water-stage recorder and crest-stage gage. Datum of gage is 5,610.5 ft above sea level, from ADOT benchmark on highway bridge.

REMARKS--No estimated daily discharges. Records fair.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 1,070 ft³/s Aug. 9, 2001, gage height, 9.86 ft, from an extension of the rating curve based on slope-area measurement. Minimum daily discharge, no flow most of each year.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 200 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 5.....	2315	472	9.19	Sept. 11.....	2215	1,150	9.98
Aug. 20.....	2015	259	8.49	Sept. 18.....	2145	*1,190	*10.04

Minimum daily discharge, no flow for most of year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.0	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
9	0.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.0
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	718
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	733
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	140
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e6.2
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.2
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	378
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	303
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19	43
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.5	16
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.6
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.7
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.8	0.00	1.1
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	21	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	1.7	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.80	107.93	2470.96
MEAN	0.031	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	3.482	82.37
MAX	0.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.8	51	733
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	1.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.6	214	4900

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2002, BY WATER YEAR (WY)

	1998	1999	2000	2001	2002
MEAN	0.296	0.005	0.000	0.000	0.000
MAX	1.11	0.020	0.000	0.000	0.000
(WY)	2001	2001	1999	1999	1999
MIN	0.000	0.000	0.000	0.000	0.000
(WY)	2000	1999	1999	1999	1999

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1998 - 2002
ANNUAL TOTAL	1945.16	2582.65	
ANNUAL MEAN	5.329	7.076	3.643
HIGHEST ANNUAL MEAN			7.08
LOWEST ANNUAL MEAN			0.19
HIGHEST DAILY MEAN	387 Aug 9	733 Sep 12	733 Sep 12 2002
LOWEST DAILY MEAN	0.00 Jan 1	0.00 Oct 1	0.00 Aug 27 1998
ANNUAL SEVEN-DAY MINIMUM	0.00 Jan 1	0.00 Oct 1	0.00 Aug 27 1998
ANNUAL RUNOFF (AC-FT)	3860	5120	2640
10 PERCENT EXCEEDS	0.00	0.00	0.00
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

LITTLE COLORADO RIVER BASIN

09386030 LITTLE COLORADO RIVER ABOVE ZION RESERVOIR, NEAR ST. JOHNS, AZ

LOCATION--Lat 34° 35'01", long 109° 24'23", in SE1/4SE1/4 sec. 30, T.14 N., R.28 E., Apache County, Hydrologic Unit 15020002, on downstream side of center pier of bridge on private road, 1.5 mi upstream from Carrizo Creek, 4 mi upstream from Zion Reservoir, and 5.8 mi northwest of St. Johns.

DRAINAGE AREA--1,007 mi², of which 2.5 mi² is noncontributing.

PERIOD OF RECORD--Oct. 1975 to current year.

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

GAGE--Water-stage recorder. Elevation of gage is 5,560 ft above sea level, from topographic map.

REMARKS--Records fair except for estimated daily discharges, which are poor. Diversions above station for irrigation of about 10,200 acres, including 1,500 acres served by Lyman Canal. Regulation by many reservoirs above station (combined capacity, 46,900 acre-ft), the largest of which is Lyman Lake. Records do not include flow bypassing the station through an abandoned irrigation ditch during higher stages.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 590 ft³/s July 31, 1994, gage height, 4.16 ft; minimum daily, 0.00 ft³/s Sept. 18-21, 2001.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 489 ft³/s Sept. 11 at 0845, gage height, 3.94 ft. Minimum daily discharge, less than 0.01 ft³/s on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.06	0.05	1.2	e2.4	1.5	1.3	0.25	0.06	0.01	0.01	<0.01	0.08
2	0.06	0.08	1.1	e2.0	1.0	0.95	0.22	0.04	0.01	<0.01	<0.01	0.08
3	0.06	0.11	1.2	e1.1	1.3	0.85	0.18	0.04	0.01	<0.01	<0.01	0.08
4	0.06	0.19	1.2	e1.4	1.4	e0.90	0.15	0.03	0.01	0.01	<0.01	0.09
5	0.06	0.27	e1.2	e1.0	1.3	e0.90	0.15	0.03	0.01	0.01	2.2	0.10
6	0.06	0.33	e1.5	e1.0	1.2	e0.90	0.20	0.03	0.01	0.01	2.5	0.12
7	0.07	0.48	e1.9	e1.2	1.3	e0.90	0.42	0.03	0.01	0.01	6.3	0.09
8	0.07	0.58	0.93	e1.4	1.3	e0.90	1.1	0.03	0.01	0.01	0.61	0.09
9	0.06	0.58	0.84	2.7	1.1	0.91	1.2	0.02	0.01	0.01	0.22	32
10	0.15	0.58	0.67	2.8	e1.0	0.94	0.81	0.02	0.01	0.02	0.16	9.1
11	0.17	0.58	e0.90	2.7	e1.1	0.86	0.53	0.02	0.01	<0.01	0.08	225
12	e0.08	0.58	e0.85	2.6	e1.0	0.83	0.41	0.02	0.01	<0.01	0.06	90
13	e0.06	0.58	e0.80	2.5	e1.0	0.86	0.30	0.01	0.01	<0.01	0.04	9.6
14	e0.03	0.58	e0.70	2.1	1.6	0.92	0.20	0.01	0.01	<0.01	0.03	1.9
15	e0.03	0.58	e0.35	2.9	e1.3	0.88	0.15	0.01	0.01	<0.01	0.03	0.55
16	e0.03	0.61	e0.30	2.1	e1.0	0.79	0.13	0.01	0.01	<0.01	0.03	0.16
17	e0.03	0.68	e0.60	e1.5	0.95	0.34	0.10	0.01	0.01	<0.01	0.03	0.09
18	e0.03	0.68	e1.0	e1.5	1.2	0.23	0.07	0.01	0.01	<0.01	0.05	3.7
19	e0.02	0.68	e1.0	1.4	1.3	0.22	0.06	0.02	0.01	<0.01	0.05	69
20	e0.02	0.68	e1.2	1.5	1.1	0.26	0.06	0.02	0.01	<0.01	0.05	19
21	e0.02	0.68	e1.5	1.5	1.1	0.36	0.05	0.02	0.01	<0.01	0.05	6.5
22	e0.02	0.71	e1.6	1.7	0.97	0.31	0.04	0.01	<0.01	<0.01	0.06	3.6
23	e0.02	0.73	e1.1	e1.5	1.0	0.23	0.05	0.01	<0.01	<0.01	0.06	2.4
24	e0.02	0.79	e1.3	1.3	1.0	0.16	0.08	0.01	0.01	<0.01	0.06	1.4
25	e0.02	0.87	e1.0	1.0	0.90	0.09	0.16	0.01	0.01	<0.01	0.06	1.2
26	0.01	0.91	e0.70	1.4	1.00	0.08	0.30	0.01	<0.01	<0.01	0.06	0.96
27	0.01	0.90	1.5	e1.3	1.3	0.08	0.32	0.01	0.01	<0.01	0.06	0.74
28	0.01	0.76	2.3	e1.3	1.3	0.08	0.10	0.01	0.01	<0.01	0.06	0.58
29	0.02	0.63	3.5	e1.3	---	0.17	0.06	0.01	0.01	<0.01	0.08	0.49
30	0.03	1.0	3.4	e1.4	---	0.15	0.06	0.01	0.01	<0.01	0.08	0.37
31	0.05	---	2.8	e1.4	---	0.21	---	0.01	---	<0.01	0.08	---
TOTAL	1.44	17.46	40.14	52.9	32.52	17.56	7.91	0.59	0.30	0.32	13.19	479.07
MEAN	0.046	0.582	1.295	1.706	1.161	0.566	0.264	0.019	0.010	0.010	0.425	15.97
MAX	0.17	1.0	3.5	2.9	1.6	1.3	1.2	0.06	0.01	0.02	6.3	225
MIN	0.01	0.05	0.30	1.0	0.90	0.08	0.04	0.01	0.01	0.01	0.01	0.08
AC-FT	2.9	35	80	105	65	35	16	1.2	0.6	0.6	26	950

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2002, BY WATER YEAR (WY)

MEAN	7.438	6.735	8.119	7.940	8.197	10.55	16.69	10.15	2.316	3.182	6.654	4.574
MAX	79.1	31.7	32.6	30.2	21.0	75.0	118	75.5	34.7	11.7	33.4	16.5
(WY)	1984	1984	1984	1984	1984	1985	1985	1979	1979	1979	1982	1984
MIN	0.051	0.076	0.082	0.092	0.44	0.24	0.18	0.010	0.000	0.022	0.23	0.079
(WY)	2002	1998	1998	1998	2001	2001	2002	2002	2002	2001	1991	2001

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1976 - 2002

ANNUAL TOTAL	283.35	663.40	
ANNUAL MEAN	0.776	1.818	7.906
HIGHEST ANNUAL MEAN			26.8 1985
LOWEST ANNUAL MEAN			1.10 1998
HIGHEST DAILY MEAN	61 Aug 11	225 Sep 11	270 Apr 28 1979
LOWEST DAILY MEAN	0.00 Sep 18	0.00 Oct 26	0.00 Sep 18 2001
ANNUAL SEVEN-DAY MINIMUM	0.02 Oct 22	0.01 May 22	0.00 May 21 2002
ANNUAL RUNOFF (AC-FT)	562	1320	5730
10 PERCENT EXCEEDS	1.1	1.5	13
50 PERCENT EXCEEDS	0.15	0.16	3.7
90 PERCENT EXCEEDS	0.02	0.01	0.09

e Estimated

< Actual value is known to be less than the value shown

LITTLE COLORADO RIVER BASIN

09386100 LITTLE COLORADO RIVER BELOW ZION RESERVOIR, NEAR ST. JOHNS, AZ

LOCATION--Lat 34° 36'17", long 109° 29'19", in SE1/4NW1/4 sec. 21, T.14 N., R.27 E., Apache County, Hydrologic Unit 15020002, on left bank 0.50 mi downstream from Zion Reservoir, 10 mi northwest of St. Johns.

DRAINAGE AREA--Undetermined.

PERIOD OF RECORD--Sept. 1998 to current year.

GAGE--Water-stage recorder and crest-stage gage. Elevation of gage is 5,530 ft above sea level, from topographic map.

REMARKS--Records fair, except for estimated daily discharges, which are poor. Flow regulated by many small reservoirs - combined capacity, about 15,500 acre-ft. Diversions for irrigation of about 6,700 acres above station.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 2,470 ft³/s Sept. 11, 2002, gage height, 11.84 ft, from an extension of the rating curve based on the weir equation for submerged weir flow. Minimum daily discharge, no flow for many days.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 11	2315	*2,470	*11.84
Sept. 19	1400	1,810	10.55

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	1.2	0.13	0.04	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.63	0.11	0.04	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.42	0.15	0.06	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.56	e0.43	0.08	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.31	0.31	0.38	0.17	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.37	0.41	0.04	0.32	0.00	0.00	0.00	0.00	0.00	0.00
7	59	0.00	0.39	0.63	0.03	0.38	0.00	0.00	0.00	0.00	0.00	0.00
8	27	0.00	0.46	0.88	0.02	0.22	0.00	0.00	0.00	0.00	0.00	0.00
9	6.4	0.00	0.49	0.97	e0.26	0.11	0.00	0.00	0.00	0.00	0.00	0.09
10	0.72	0.00	0.55	1.4	e0.20	0.10	0.00	0.00	0.00	0.00	0.00	69
11	0.49	0.00	0.58	1.6	e0.20	0.03	0.00	0.00	0.00	0.00	0.00	593
12	0.48	0.00	0.62	0.64	e0.20	0.04	0.00	0.00	0.00	0.00	0.00	2140
13	0.29	0.00	0.53	0.48	e0.20	0.04	0.00	0.00	0.00	0.00	0.00	963
14	0.22	0.00	0.21	0.25	e0.20	0.02	0.00	0.00	0.00	0.00	0.00	142
15	0.20	0.00	e0.35	0.28	e0.21	0.00	0.00	0.00	0.00	0.00	0.00	39
16	0.17	0.00	e0.30	0.27	e0.26	0.00	0.00	0.00	0.00	0.00	0.00	8.3
17	0.11	0.00	e0.89	0.31	0.41	0.00	0.00	0.00	0.00	0.00	0.00	2.3
18	0.04	0.00	e0.98	0.26	e0.15	0.00	0.00	0.00	0.00	0.00	0.00	180
19	e0.00	0.00	e0.94	0.06	e0.20	0.00	0.00	0.00	0.00	1.5	0.00	1150
20	e0.00	0.00	0.59	e0.29	e0.15	0.00	0.00	0.00	0.00	1.1	0.00	448
21	e0.00	0.00	1.0	e0.25	0.16	0.00	0.00	0.00	0.00	0.25	0.00	98
22	e0.00	0.00	0.63	e0.49	0.25	0.00	0.00	0.00	0.00	0.03	0.00	28
23	e0.00	0.00	0.31	e0.25	0.21	0.00	0.00	0.00	0.00	0.00	0.00	9.8
24	e0.00	0.00	0.13	e0.30	e0.10	0.00	0.00	0.00	0.00	0.00	0.00	3.5
25	0.00	0.00	0.21	e0.25	e0.08	0.00	0.00	0.00	0.00	0.00	0.00	1.1
26	0.00	0.00	e0.56	e0.25	e0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.53
27	0.00	0.00	e0.52	e0.35	e0.03	0.00	0.00	0.00	0.00	1.5	0.00	0.23
28	0.00	0.00	e1.1	e0.20	e0.03	0.00	0.00	0.00	0.00	0.34	0.00	0.08
29	0.00	0.00	1.1	e0.03	---	0.00	0.00	0.00	0.00	0.07	0.00	0.05
30	0.00	0.00	1.4	e0.03	---	0.00	0.00	0.00	0.00	0.01	0.00	0.03
31	0.00	---	0.77	0.07	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	95.12	0.00	16.29	14.32	4.84	1.65	0.00	0.00	0.00	4.80	0.00	5876.01
MEAN	3.068	0.000	0.525	0.462	0.173	0.053	0.000	0.000	0.000	0.155	0.000	195.9
MAX	59	0.00	1.4	1.6	0.43	0.38	0.00	0.00	0.00	1.5	0.00	2140
MIN	0.00	0.00	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	189	0.00	32	28	9.6	3.3	0.00	0.00	0.00	9.5	0.00	11660
CAL YR 2001	TOTAL 1981.35	MEAN 5.428	MAX 708	MIN 0.00	AC-FT 3930							
WTR YR 2002	TOTAL 6013.03	MEAN 16.47	MAX 2140	MIN 0.00	AC-FT 11930							

e Estimated

LITTLE COLORADO RIVER BASIN

09390500 SHOW LOW CREEK NEAR LAKESIDE, AZ

LOCATION--Lat 34° 10'46", long 109° 59'14", in SW1/4NW1/4 sec. 14, T.9 N., R.22 E., Navajo County, Hydrologic Unit 15020005, on left bank 1 mi upstream from pumping plant on Show Low Lake, 1.9 mi northwest of Lakeside, 2.2 mi upstream from Jacques Dam, and 6 mi southeast of Show Low.

DRAINAGE AREA--68.6 mi².

PERIOD OF RECORD--May 1953 to current year.

REVISED RECORDS--WSP 1513: 1954-56. WSP 1926: Drainage area. WDR AZ-71-1: 1970(M).

GAGE--Water-stage recorder and concrete-dam control with V-notch sharp-crested weir. Elevation of gage is 6,610 ft above sea level, from topographic map.

REMARKS--Records fair except for estimated daily discharges, which are poor. Record shows inflow to Show Low Lake. Flow partly regulated by several small reservoirs, largest of which are Rainbow Lake and Scott Reservoir, combined capacity, 2,400 acre-ft. Diversions for irrigation of about 250 acres above station.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 5,550 ft³/s Dec. 18, 1978, gage height, 9.16 ft, from rating curve extended above 2,500 ft³/s; maximum gage height, 9.53 ft Dec. 26, 1971; no flow Oct. 5, 6, Dec. 10-19, 1964, Jan. 4-15, 1970.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 100 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 18.....	2000	*24	*2.54

Minimum daily discharge, 0.10 ft³/s, Nov. 2-5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.64	0.12	0.30	0.38	0.30	0.47	0.69	2.6	2.2	1.8	1.7	1.0
2	0.64	0.10	0.36	0.38	0.32	0.53	0.69	2.5	2.2	1.8	1.6	0.86
3	0.66	0.10	0.41	0.36	0.31	0.46	0.63	2.7	2.1	1.9	1.5	0.84
4	0.68	0.10	0.40	0.35	0.33	0.47	0.67	2.9	2.1	2.0	1.4	0.68
5	0.69	0.10	0.46	0.33	0.30	0.49	0.57	3.2	2.2	2.1	1.4	0.65
6	0.69	0.17	0.46	0.30	0.27	0.93	0.50	2.5	2.2	1.9	1.5	0.67
7	0.82	0.21	0.42	0.30	0.28	1.1	1.9	2.4	3.2	1.8	1.8	0.72
8	0.86	0.18	0.39	0.32	0.30	1.9	2.0	2.3	2.6	2.3	1.6	0.90
9	0.84	0.19	0.32	0.33	0.30	2.1	1.4	2.4	2.8	2.8	1.5	1.1
10	0.73	0.17	0.30	0.31	0.26	1.9	1.0	2.5	1.9	3.4	1.3	3.3
11	0.67	0.17	0.32	0.30	0.27	1.7	0.91	3.7	1.5	3.0	1.1	6.5
12	0.67	0.19	0.37	0.29	0.27	1.4	0.84	3.2	1.3	2.6	1.1	2.4
13	0.96	0.17	0.37	0.28	0.27	1.4	0.83	2.4	1.4	2.7	1.5	1.6
14	1.0	0.18	0.36	0.27	0.27	1.5	1.2	2.2	2.0	2.5	2.3	1.3
15	1.0	0.28	0.40	0.24	0.27	0.99	0.66	2.2	2.0	2.4	2.6	1.1
16	1.0	0.24	0.39	0.24	0.27	1.1	0.79	2.1	2.0	4.0	2.6	1.1
17	1.2	0.17	0.36	0.24	0.27	1.0	0.87	2.2	2.0	2.4	2.3	1.1
18	1.3	0.14	0.36	0.24	0.28	0.95	0.79	2.3	1.9	2.2	4.6	0.93
19	1.3	0.12	0.35	0.23	0.30	0.87	0.79	2.5	1.9	2.2	3.4	1.3
20	1.1	0.11	0.35	0.22	0.30	0.82	0.77	2.1	1.9	2.1	2.0	1.5
21	0.60	0.22	0.35	0.21	0.28	1.1	0.78	2.0	1.9	1.6	1.5	1.5
22	0.43	0.24	0.34	0.21	0.26	1.3	0.78	2.0	2.0	1.2	1.6	1.5
23	0.37	0.25	0.32	0.21	0.19	0.98	2.4	2.0	1.9	2.1	1.7	1.3
24	0.33	0.26	0.33	0.24	0.13	0.67	2.8	2.1	1.9	2.9	1.6	1.00
25	0.29	0.27	0.32	0.21	0.11	0.65	2.9	2.0	2.1	3.3	1.6	1.1
26	0.32	0.33	0.31	0.22	0.12	1.00	2.8	2.0	2.2	2.7	1.4	1.1
27	0.26	0.33	0.30	0.23	0.14	0.39	2.7	2.0	2.2	4.2	1.0	0.99
28	0.30	0.31	0.30	0.23	0.27	0.40	2.7	2.1	2.0	6.4	0.97	0.97
29	0.30	0.30	0.31	0.23	---	0.45	2.7	2.1	2.1	2.9	1.4	1.0
30	0.25	0.30	0.33	0.26	---	0.76	2.7	2.3	2.0	2.4	0.94	1.1
31	0.16	---	0.34	0.33	---	0.66	---	2.4	---	2.1	0.76	---
TOTAL	21.06	6.02	11.00	8.49	7.24	30.44	41.76	73.9	61.7	79.7	53.27	41.11
MEAN	0.679	0.201	0.355	0.274	0.259	0.982	1.392	2.384	2.057	2.571	1.718	1.370
MAX	1.3	0.33	0.46	0.38	0.33	2.1	2.9	3.7	3.2	6.4	4.6	6.5
MIN	0.16	0.10	0.30	0.21	0.11	0.39	0.50	2.0	1.3	1.2	0.76	0.65
AC-FT	42	12	22	17	14	60	83	147	122	158	106	82

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2002, BY WATER YEAR (WY)

	MEAN	5.824	5.392	20.86	13.16	30.09	43.26	18.90	7.318	6.029	5.597	5.397	4.543
MAX	57.4	54.3	285	200	225	189	197	72.0	13.2	10.8	20.1	18.5	
(WY)	1985	1979	1985	1993	1980	1978	1973	1973	1992	1987	1988	1988	
MIN	0.68	0.20	0.20	0.10	0.19	0.63	0.97	1.68	1.82	1.07	1.17	0.59	
(WY)	2002	2002	1965	1971	1964	2000	1957	1960	1990	1996	2001	2000	

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1954 - 2002

ANNUAL TOTAL		2647.05		435.69									
ANNUAL MEAN		7.252		1.194						13.80			
HIGHEST ANNUAL MEAN										56.8		1985	
LOWEST ANNUAL MEAN										1.19		2002	
HIGHEST DAILY MEAN			118	Apr 8			6.5	Sep 11		3520		Dec 18 1978	
LOWEST DAILY MEAN			0.10	Nov 2			0.10	Nov 2		0.00		Feb 14 1954	
ANNUAL SEVEN-DAY MINIMUM			0.12	Oct 31			0.12	Oct 31		0.00		Dec 10 1964	
ANNUAL RUNOFF (AC-FT)		5250				864				10000			
10 PERCENT EXCEEDS		23				2.5				20			
50 PERCENT EXCEEDS		1.8				0.93				4.3			
90 PERCENT EXCEEDS		0.30				0.24				0.70			

LITTLE COLORADO RIVER BASIN

09391000 SHOW LOW LAKE NEAR SHOW LOW, AZ

LOCATION.--Lat 34° 11'35", long 110° 00'15", in NW¹/₄ sec. 10, T.9 N., R.22 E., Navajo County, Hydrologic Unit 15020005, on upstream side of right end of Jaques Dam on Show Low Creek, 3.4 mi northwest of Lakeside, and 4.5 mi southeast of Show Low.

DRAINAGE AREA.--73.0 mi².

PERIOD OF RECORD.--June 1953 to current year. Periodic readings of elevation and contents only, 1953--1985, published with record of Show Low Creek below Jaques Dam near Show Low, AZ (09392000).

GAGE.--Water-stage recorder, with periodic supplemental lake elevation readings. Elevation of gage is 6580.0 ft above sea level.

REMARKS.--Records good. Lake is formed by an earthen-rock dam; storage began in spring of 1953. The spillway is a concrete, broad-crested Ogee weir. Total capacity to spillway, 6,180 acre-ft, consisting of 1,070 acre-ft dead storage below elevation 6,535.0 ft (sill of outlet structure) and 5,110 acre-ft usable storage between elevation 6,535.0 ft and 6,570.0 ft (sill of overflow spillway). Capacity table prepared by Leeds, Hill, and Jewett, consulting engineers, from surveys by the firm. Water cannot be pumped when lake elevation is below 6,538.5 ft (sill of intake to pumping plant), but can be released to stream channel down to elevation 6,535.0 ft. Figures given herein represent total contents.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 6,920 acre-ft Dec. 18, 1978, and Dec. 27, 1984; maximum elevation, 6,573.72 ft Dec. 27, 1984; minimum contents, not determined.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,020 acre-ft Oct. 1, elevation 6,551.40 ft; minimum contents 1,940 acre-ft Sept. 29 and 30; minimum elevation 6,543.16 ft Sept. 30.

Capacity table (elevation, in feet, and contents, in acre-feet)

6,535	1,070	6,565	5,240
6,545	2,160	6,575	7,180
6,555	3,560		

RESERVOIR STORAGE, in (ACRE- FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3010	2830	2770	2760	2750	2710	2730	2630	2460	2270	2170	2030
2	3000	2830	2760	2760	2750	2710	2730	2630	2450	2270	2170	2020
3	2990	2830	2760	2760	2750	2710	2720	2620	2450	2260	2170	2020
4	2980	2830	2770	2760	2750	2710	2720	2620	2440	2250	2180	2010
5	2970	2830	2760	2760	2750	2710	2710	2620	2440	2250	2170	2000
6	2970	2820	2760	2760	2750	2710	2710	2610	2430	2240	2170	1990
7	2960	2820	2760	2760	2750	2710	2720	2610	2430	2230	2170	1990
8	2950	2820	2760	2760	2750	2720	2720	2600	2420	2230	2160	1980
9	2950	2820	2760	2760	2750	2720	2720	2600	2410	2230	2160	1980
10	2940	2810	2760	2760	2740	2720	2730	2590	2410	2230	2150	2000
11	2930	2810	2760	2760	2740	2720	2720	2580	2400	2230	2140	2020
12	2920	2810	2770	2760	2740	2720	2720	2580	2390	2230	2140	2020
13	2910	2810	2770	2760	2740	2720	2720	2580	2380	2220	2130	2020
14	2900	2800	2760	2760	2740	2720	2710	2570	2380	2220	2130	2020
15	2890	2800	2770	2760	2740	2720	2710	2560	2370	2220	2120	2020
16	2880	2800	2770	2760	2740	2720	2700	2560	2370	2220	2120	2030
17	2870	2800	2760	2760	2740	2720	2700	2550	2360	2210	2110	2020
18	2870	2800	2760	2760	2740	2720	2690	2550	2350	2210	2110	2010
19	2860	2790	2760	2760	2730	2720	2680	2540	2340	2200	2110	2010
20	2860	2790	2760	2750	2730	2720	2680	2530	2340	2200	2110	2000
21	2860	2790	2760	2750	2730	2720	2670	2530	2330	2190	2100	2000
22	2860	2790	2760	2750	2730	2720	2660	2520	2320	2190	2100	1990
23	2860	2780	2760	2750	2730	2720	2660	2510	2310	2190	2090	1980
24	2850	2780	2760	2750	2720	2720	2660	2510	2310	2190	2080	1980
25	2850	2780	2760	2750	2720	2720	2660	2500	2300	2190	2080	1970
26	2850	2780	2760	2750	2720	2720	2650	2490	2300	2180	2070	1960
27	2850	2770	2760	2750	2720	2720	2650	2490	2290	2180	2060	1960
28	2840	2770	2760	2750	2720	2720	2650	2480	2290	2190	2050	1950
29	2840	2770	2760	2750	---	2720	2640	2480	2280	2190	2050	1940
30	2840	2770	2760	2750	---	2730	2640	2470	2280	2180	2040	1940
31	2840	---	2760	2750	---	2730	---	2470	---	2170	2040	---
MAX	3010	2830	2770	2760	2750	2730	2730	2630	2460	2270	2180	2030
MIN	2840	2770	2760	2750	2720	2710	2640	2470	2280	2170	2040	1940
(*)	65510.10	6549.61	6549.55	6549.51	6549.24	6549.32	6548.68	6547.38	6545.94	6545.11	6544.00	6543.16
(**)	-180	-70	-10	-10	-30	+10	-90	-170	-190	-110	-130	-100

CAL YR 2001 MAX 6250 MIN 2760 (**)-340
WTR YR 2002 MAX 3010 MIN 1940 (**)-1080

(*) Elevation, in feet, at end of month.
(**) Change in contents, in acre-feet.

LITTLE COLORADO RIVER BASIN

09392000 SHOW LOW CREEK BELOW JACQUES DAM, NEAR SHOW LOW, AZ

LOCATION.--Lat 34° 11'47", long 110° 00'13", in NW_{1/4} sec. 10, T.9 N., R.22 E., Navajo County, Hydrologic Unit 15020005, on right bank just downstream from Jacques Dam, 3.5 mi northwest of Lakeside, and 4.5 mi southeast of Show Low.

DRAINAGE AREA.--73.0 mi².

PERIOD OF RECORD.--Nov. 1941 to Jan. 1945, June 1953 to Sept. 1955 (monthly discharge only), Oct. 1955 to current year. Monthly discharge only Nov. 1941 to Jan. 1945, published in WSP 1313. Published as "at Jacques damsite, near Lakeside" 1941-45.

REVISED RECORDS.--WSP 1926: Drainage area. WDR AZ-81-1: 1979 (M).

GAGE.--Water-stage recorder and sharp-crested weir, with supplementary water-stage recorder on lake for recording flow over concrete spillway. Elevation of gage is 6,530 ft above sea level, from topographic map. Nov. 1941 to Jan. 1945 nonrecording gage at site 100 ft upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Discharge record is the sum of the diversions from Show Low Lake into Show Low Creek (09392000) and flows over the Show Low Lake spillway which enters Show Low Creek about 0.25 mi downstream of station 09392000. Flow over the spillway occurred from Mar. 15 to Apr. 2 and Apr. 7 to 15 this year. Record since 1953 shows release from Show Low Lake. Flow regulated by several reservoirs, largest of which are Show Low Lake, completed in 1953; Rainbow Lake, completed prior to 1941; and Scott Reservoir, completed in 1946 (combined capacity, 8,800 acre-ft). Diversions for irrigation of about 250 acres above Show Low Lake and diversion by pumping of floodwater stored in Show Low Lake to Forestdale Creek in Salt River basin (see record for Forestdale Creek diversion from Show Low Creek, near Show Low, elsewhere in this report).

AVERAGE DISCHARGE.--48 years (water years 1954-2001), 8.81 ft³/s, 6,480 acre-ft/yr; median of yearly mean discharges, 4.01 ft³/s, 2,910 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,800 ft³/s, spillway flow entering 0.2 mi downstream from station, Dec. 27, 1984, lake elevation, 6,573.72 ft, from rating curve extended above 270 ft³/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 18, 1952, discharge, 6,250 ft³/s at site 5 mi downstream at Show Low, is the largest since at least 1940.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 4.7 ft³/s Oct. 1-18. Minimum daily discharge, no flow Sept. 12-16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	0.91	0.81	0.81	0.81	0.81	0.08	3.8	4.1	3.7	4.0	3.6
2	4.7	0.91	0.81	0.81	0.81	0.81	1.0	4.1	4.0	3.7	0.08	3.6
3	4.7	0.91	0.81	0.67	0.81	0.81	1.5	4.1	4.0	3.8	0.08	3.6
4	4.7	0.91	0.81	0.08	0.81	0.81	1.5	4.1	3.9	4.1	0.04	3.6
5	4.7	0.91	0.81	0.08	0.81	0.81	1.6	4.1	3.9	4.1	2.1	3.6
6	4.7	0.91	0.81	0.08	0.81	0.81	1.6	4.1	3.9	4.1	3.4	3.6
7	4.7	0.91	0.81	0.08	0.81	0.81	0.52	4.1	3.9	4.1	3.4	3.6
8	4.7	0.91	0.81	0.08	0.81	0.81	0.08	4.1	3.9	4.1	3.4	3.6
9	4.7	0.91	0.81	0.08	0.81	0.81	0.08	4.1	3.9	4.1	3.4	3.6
10	4.7	0.91	0.81	0.33	0.74	0.81	0.08	4.1	3.9	4.1	3.4	2.7
11	4.7	0.88	0.81	0.44	0.76	0.81	1.2	4.1	3.8	4.1	3.4	0.02
12	4.7	0.89	0.81	0.44	0.81	0.81	1.7	4.1	3.8	4.1	3.4	0.00
13	4.7	0.91	0.83	0.44	0.81	0.81	1.7	4.1	3.8	4.1	3.7	0.00
14	4.7	0.91	0.88	0.44	0.81	0.81	2.0	4.1	3.8	4.1	3.7	0.00
15	4.7	0.91	0.81	0.48	0.81	0.81	2.7	4.1	3.8	4.1	3.7	0.00
16	4.7	0.91	0.81	0.45	0.81	0.81	2.8	4.1	3.8	4.1	3.7	0.00
17	4.7	0.91	0.81	0.44	0.81	0.81	2.8	4.1	3.8	4.1	3.7	2.2
18	4.7	0.87	0.81	0.44	0.81	0.81	2.8	4.1	3.8	4.1	3.7	3.4
19	3.8	0.87	0.81	0.44	0.81	0.81	2.8	4.1	3.8	4.1	3.7	3.4
20	0.91	0.91	0.81	0.44	0.81	0.81	2.8	4.1	3.8	4.1	3.7	3.5
21	0.91	0.91	0.81	0.44	0.76	0.81	2.7	4.1	3.7	4.1	3.7	3.6
22	0.91	0.90	0.81	0.44	0.76	0.33	3.1	4.1	3.7	4.1	3.7	3.6
23	0.86	0.85	0.81	0.44	0.81	0.08	3.4	4.1	3.7	4.1	3.7	3.6
24	0.84	0.87	0.81	0.44	0.81	0.08	3.4	4.1	3.7	4.1	3.7	3.6
25	0.82	0.85	0.81	0.44	0.81	0.08	3.4	4.1	3.7	4.1	3.7	3.6
26	0.87	0.81	0.81	0.44	0.81	0.08	3.4	4.1	3.7	4.1	3.7	3.6
27	0.87	0.81	0.81	0.44	0.81	0.08	3.4	4.1	3.7	4.1	3.7	3.6
28	0.88	0.81	0.81	0.44	0.81	0.08	3.4	4.1	3.7	4.1	3.7	3.6
29	0.91	0.81	0.81	0.58	---	0.08	3.4	4.1	3.7	4.1	3.7	3.6
30	0.91	0.81	0.81	0.81	---	0.08	3.4	4.1	3.7	4.1	3.7	3.6
31	0.91	---	0.81	0.81	---	0.08	---	4.1	---	4.1	3.7	---
TOTAL	99.00	26.50	25.20	13.27	22.46	18.06	64.34	126.8	114.4	126.0	100.40	83.62
MEAN	3.194	0.883	0.813	0.428	0.802	0.583	2.145	4.090	3.813	4.065	3.239	2.787
MAX	4.7	0.91	0.88	0.81	0.81	0.81	3.4	4.1	4.1	4.1	4.0	3.6
MIN	0.82	0.81	0.81	0.08	0.74	0.08	0.08	3.8	3.7	3.7	0.04	0.00
AC-FT	196	53	50	26	45	36	128	252	227	250	199	166
CAL YR 2001	TOTAL	1770.53	MEAN	4.851	MAX	157	MIN	0.12	AC-FT	3510		
WTR YR 2002	TOTAL	820.05	MEAN	2.247	MAX	4.7	MIN	0.00	AC-FT	1630		

LITTLE COLORADO RIVER BASIN

09394500 LITTLE COLORADO RIVER AT WOODRUFF, AZ

LOCATION--Lat 34° 46' 58", long 110° 02' 37", in NE1/4SW1/4 sec. 17, T.16 N., R.22 E., Navajo County, Hydrologic Unit 15020002, on left bank at abandoned county road bridge in Woodruff, 3.7 mi downstream from Silver Creek.

DRAINAGE AREA--8,072 mi², of which 297 mi² is noncontributing.

PERIOD OF RECORD--Mar. to May 1905; June to July 1905 (gage heights only); Aug. 1905 to May 1907; July 1907 to Apr. 1908, July to Oct. 1908, Dec. 1908, and Dec. 1915 to Sept. 1916 (gage heights only); Oct. 1916 to Aug. 1917 (monthly discharge only); Sept. 1917 to Mar. 1918, Dec. 1918 to Dec. 1919, Apr. 1929 to Dec. 1933, Sept. 1935 to current year. Published as "near Woodruff" 1916-19, 1929-48.

REVISED RECORDS--WSP 1049: 1917. WSP 1213: 1906, 1919(M). WDR AZ--88-1: Drainage area.

GAGE--Water-stage recorder. Datum of gage is 5,130.3 ft above sea level. See WSP 1733 for history of changes prior to Sept. 22, 1949.

REMARKS--Records good except for estimated daily discharges, which are poor. Diversions above station for irrigation of about 22,000 acres, including a pump installation 1,000 ft upstream installed in spring of 1973. Some regulation by reservoirs above station; combined capacity, about 81,400 acre-ft.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge not determined, occurred Jan. 19, 1916; maximum discharge recorded, 25,000 ft³/s Dec. 5, 1919; maximum gage height, 22.9 ft from high-water mark in gage well, Dec. 19, 1978; no flow at times in most years prior to 1960 and in 1974, 1976, 1983, 1999, 2000, and 2001.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 1,900 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 12	unknown	*6,050	*18.38a

Minimum daily discharge, no flow for many days.

a- from floodmark

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	1.5	1.2	2.8	2.1	1.8	0.25	0.28	0.04	0.00	2.0	1.2
2	3.4	2.2	1.6	2.8	2.3	1.6	0.59	0.23	0.00	0.00	5.0	0.60
3	4.8	1.6	2.0	2.9	2.2	1.8	0.77	0.13	0.00	0.00	21	0.02
4	3.6	1.4	2.0	2.9	2.1	1.8	0.55	0.16	0.00	0.00	13	0.00
5	3.7	1.1	2.0	2.4	2.1	1.3	0.21	0.17	0.00	0.00	3.4	0.00
6	7.5	1.6	2.0	2.5	2.1	1.4	0.15	0.28	0.00	0.00	280	0.00
7	74	1.2	1.7	2.3	2.4	1.5	1.5	0.22	0.00	0.00	e20	0.05
8	91	1.4	1.5	2.2	2.3	1.5	32	0.01	0.00	0.00	5.8	230
9	88	1.1	1.4	2.2	2.2	1.5	17	0.00	0.00	0.00	3.5	438
10	74	1.2	1.3	2.2	2.2	1.5	3.8	0.00	0.00	0.00	2.5	709
11	54	1.3	1.4	2.2	2.0	1.00	1.5	0.05	0.00	0.00	2.0	e1830
12	23	1.3	1.5	2.2	1.9	0.10	1.0	0.00	0.00	0.00	1.4	e5000
13	12	1.2	1.5	2.2	2.0	0.16	0.77	0.17	0.00	0.00	0.53	2070
14	8.6	0.75	1.5	2.2	2.0	0.76	0.77	0.15	0.00	0.00	0.04	2310
15	5.2	0.32	1.5	2.2	2.0	0.87	0.82	0.00	0.00	57	0.34	e1780
16	3.5	0.48	1.6	2.2	2.0	0.85	0.76	0.00	0.00	53	1.4	e740
17	4.2	1.1	1.5	2.2	2.0	0.85	0.46	0.00	0.00	29	1.7	e80
18	4.9	0.99	1.9	2.3	2.0	0.86	0.03	0.00	0.00	15	1.0	20
19	4.4	1.1	2.2	1.9	2.0	0.66	0.01	0.00	0.00	2.8	43	537
20	3.9	0.78	2.2	1.7	2.0	0.16	0.08	0.00	0.00	1.5	140	753
21	3.6	0.64	2.2	2.0	2.0	0.33	0.45	0.00	0.00	0.57	6.0	660
22	3.0	1.0	2.2	2.1	2.0	0.48	0.55	0.00	0.00	4.7	2.5	802
23	2.6	0.94	2.5	2.3	1.7	0.39	0.72	0.00	0.00	1.3	1.3	170
24	2.3	0.68	2.7	2.1	1.6	0.21	0.75	0.00	0.00	0.64	1.1	e51
25	1.5	0.32	2.4	2.1	1.7	0.51	0.39	0.00	0.00	34	15	e31
26	1.6	0.56	2.5	2.2	1.8	0.70	0.02	0.00	0.00	2.3	9.8	e24
27	2.8	0.86	2.5	2.3	1.8	0.77	0.00	0.05	0.00	275	3.5	18
28	2.8	1.6	2.0	2.2	1.8	0.74	0.00	0.07	0.00	e436	1.1	12
29	1.5	1.2	2.5	2.2	---	0.31	0.00	0.00	0.00	e14	1.1	6.1
30	0.48	1.2	2.8	2.3	---	0.13	0.15	0.00	0.00	e3.0	0.51	2.3
31	1.3	---	2.8	2.4	---	0.01	---	0.00	---	2.5	0.97	---
TOTAL	499.48	32.62	60.6	70.7	56.3	26.54	66.05	1.97	0.04	932.31	590.49	18275.27
MEAN	16.11	1.087	1.955	2.281	2.011	0.856	2.202	0.064	0.001	30.07	19.05	609.2
MAX	91	2.2	2.8	2.9	2.4	1.8	32	0.28	0.04	436	280	5000
MIN	0.48	0.32	1.2	1.7	1.6	0.01	0.00	0.00	0.00	0.00	0.04	0.00
MED	3.7	1.1	2.0	2.2	2.0	0.77	0.55	0.00	0.00	0.64	2.5	66
AC-FT	991	65	120	140	112	53	131	3.9	0.08	1850	1170	36250
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 2002, BY WATER YEAR (WY)

	MEAN	38.73	23.62	33.42	40.57	56.97	74.88	54.46	20.53	6.252	70.95	140.4	90.43
MAX	301	543	382	599	827	610	789	488	87.8	810	951	630	
(WY)	1973	1906	1920	1993	1932	1941	1905	1973	1955	1919	1955	1929	
MIN	1.05	0.90	1.24	1.12	0.91	0.86	0.003	0.000	0.000	0.53	3.57	0.71	
(WY)	1951	2000	2000	2000	2000	2002	1956	1929	1929	1942	1950	1956	

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1905 - 2002
ANNUAL TOTAL	8259.75	20612.37	
ANNUAL MEAN	22.63	56.47	48.86
HIGHEST ANNUAL MEAN			161
LOWEST ANNUAL MEAN			4.36
HIGHEST DAILY MEAN	613	5000	10000
LOWEST DAILY MEAN	0.00	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	0.00	0.00
MAXIMUM PEAK STAGE			22.90
ANNUAL RUNOFF (AC-FT)	16380	40880	35400
ANNUAL RUNOFF (CFSM)	0.003	0.007	0.006
10 PERCENT EXCEEDS	41	20	90
50 PERCENT EXCEEDS	2.2	1.5	6.6
90 PERCENT EXCEEDS	0.11	0.00	1.0

e Estimated

LITTLE COLORADO RIVER BASIN

09397300 LITTLE COLORADO RIVER NEAR JOSEPH CITY, AZ

LOCATION--Lat 34° 54'04", long 110° 15'17", in NE1/4SE1/4 sec. 6, T.17 N., R.20 E., Navajo County, Hydrologic Unit 15020008, on left bank just upstream from diversion dam, 5.4 mi west of Holbrook, 5.7 mi southeast of Joseph City, and 8.5 mi downstream from Puerco River.

DRAINAGE AREA--12,384 mi², of which 347 mi² are noncontributing.

PERIOD OF RECORD--July 1973 to current year (daily discharge only for those days on which instantaneous discharge exceeds 500 ft³/s).

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

GAGE--Water-stage recorder, crest-stage gage, and concrete diversion dam. Datum of gage is 5,031.10 ft above sea level (U.S. Army Corps of Engineers benchmark). From Oct. 1, 1990, to Mar. 19, 1993, on right bank at same datum.

REMARKS--Records fair except for estimated daily discharges, which are poor. Published record includes only those days when instantaneous discharge over the crest of the dam exceeds 500 ft³/s. Diversions above station for irrigation of about 23,000 acres, diversions at dam on right bank of most low flows for irrigation of about 1,500 acres in vicinity of Joseph City. Some regulation by reservoirs; combined capacity of principal reservoirs, about 91,400 acre-ft.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 25,400 ft³/s Dec. 19, 1978, gage height, 7.64 ft, from rating curve extended above 7,400 ft³/s on basis of slope-area measurement at gage height 6.82 ft.

EXTREMES OUTSIDE PERIOD OF RECORD--A discharge of 60,000 ft³/s was determined for peak of Sept. 19, 1923, at Holbrook (see prior records for sta 09397000, Little Colorado River at Holbrook, for this peak and other peaks 1905-6, 1949-73).

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 5,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 11.....	1130	*9,000	*6.89

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	e1030	---
7	---	---	---	---	---	---	---	---	---	---	e204	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	e1470
10	---	---	---	---	---	---	---	---	---	---	---	1570
11	---	---	---	---	---	---	---	---	---	---	---	7450
12	---	---	---	---	---	---	---	---	---	---	---	5300
13	---	---	---	---	---	---	---	---	---	---	---	e2250
14	---	---	---	---	---	---	---	---	---	---	---	2050
15	---	---	---	---	---	---	---	---	---	---	---	1730
16	---	---	---	---	---	---	---	---	---	239	---	e376
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	299
20	---	---	---	---	---	---	---	---	---	---	133	705
21	---	---	---	---	---	---	---	---	---	---	167	548
22	---	---	---	---	---	---	---	---	---	---	---	791
23	---	---	---	---	---	---	---	---	---	---	---	299
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	e936	---	---
28	---	---	---	---	---	---	---	---	---	e769	---	---
29	---	---	---	---	---	---	---	---	---	e256	---	---
30	---	---	---	---	---	---	---	---	---	---	329	---
31	---	---	---	---	---	---	---	---	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---
AC-FT	---	---	---	---	---	---	---	---	---	---	---	---

e Estimated

LITTLE COLORADO RIVER BASIN

09397500 CHEVELON CREEK BELOW WILDCAT CANYON NEAR WINSLOW, AZ

LOCATION.--Lat 34° 38'11", long 110° 42'49", in SW1/4 sec. 36, T.15 N., R.15 E., Navajo County, Hydrologic Unit 15020010, Sitgreaves National Forest, on right bank 0.4 mi downstream from Wildcat Canyon and 25 mi south of Winslow.

DRAINAGE AREA.--271 mi².

PERIOD OF RECORD.--May 1947 to Sept. 1970 (daily discharge), 1979, 1982--95 (annual maximum only), Oct. 1995 to current year.

REVISED RECORDS.--WSP 1179: 1949(p), WSP 1283: 1951(m).

GAGE.--Water-stage recorder. Datum of gage is 5,905.16 ft above sea level, from Bureau of Reclamation benchmark.

REMARKS.--No estimated daily discharges. Records good. Storage and regulation by Chevelon Canyon Lake (capacity 6,193 acre-ft) 17 mi upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,700 ft³/s Jan. 8, 1993, gage height, 20.78 ft; no flow for many days.

EXTREMES FOR CURRENT YEAR.--No flow for entire year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2002, BY WATER YEAR (WY)

MEAN	2.855	9.660	35.61	73.39	52.70	150.3	144.1	8.808	0.067	0.219	13.18	14.50
MAX	45.9	108	320	523	308	473	658	47.4	1.70	4.45	205	210
(WY)	1959	1960	1966	1952	1957	1960	1952	1952	1955	1964	1951	1970
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1949	1949	1951	1951	1954	1996	1996	1947	1947	1947	1948	1948

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1947 - 2002
ANNUAL TOTAL	8556.63	0.00	
ANNUAL MEAN	23.44	0.000	41.56
HIGHEST ANNUAL MEAN			132
LOWEST ANNUAL MEAN			0.000
HIGHEST DAILY MEAN	322	Mar 23	6860
LOWEST DAILY MEAN	0.00	Jan 1	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00
ANNUAL RUNOFF (AC-FT)	16970		30110
10 PERCENT EXCEEDS	83		87
50 PERCENT EXCEEDS	0.00		0.00
90 PERCENT EXCEEDS	0.00		0.00

LITTLE COLORADO RIVER BASIN

09398300 BLUE RIDGE RESERVOIR NEAR PINE, AZ

LOCATION.--Lat 34° 33' 19", long 111° 11' 00", in NE1/4SE1/4 sec. 33, T.14 N., R.11 E., Coconino County, Hydrologic Unit 15020008, in Coconino National Forest, on upstream side of left end of spillway structure of Blue Ridge Dam on East Clear Creek, at mouth of General Springs Canyon, 7.3 mi east of Clints Well, and 20 mi northeast of Pine.

DRAINAGE AREA.--71.1 mi².

PERIOD OF RECORD.--Dec. 1964 to Mar. 1965 (periodic elevations only), Apr. 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 6,620 ft above sea level; gage readings have been reduced to elevations NGVD. Prior to Apr. 2, 1965, nonrecording-gage readings (at intervals of 3 to 8 days) at NGVD.

REMARKS.--Records good. Reservoir is formed by a concrete arch dam. Dam completed and storage began in Dec. 1964. Total capacity is 19,500 acre-ft at elevation 6,735 ft, of which 15,000 acre-ft is usable storage below 6,720 ft, the spillway crest. Drawdown below 6,646.3 ft, 2,620 acre-ft restricted by sill at mouth of diversion tunnel since Nov. 1981. Reservoir serves as a basin from which water is pumped to the East Verde River. (See records for East Verde River diversion from East Clear Creek, near Pine.) Release is possible through valve in base of dam. Figures given herein represent total contents.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 17,230 acre-ft Feb. 19, 1993, elevation, 6,727.56 ft; minimum contents since reservoir filled (Apr. 1965), 1,450 acre-ft Nov. 18--27, 1981; minimum elevation, 6,630.75 ft Nov. 26, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 8,980 acre-ft Oct. 1, elevation, 6,693.58 ft; minimum daily contents, 5,440 acre-ft Sept. 30; minimum elevation 6,671.86 ft Sept. 30.

RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8940	7910	7650	7460	7260	7070	6870	6650	6390	6100	5950	5640
2	8900	7900	7640	7450	7250	7070	6870	6650	6390	6090	5940	5630
3	8860	7890	7640	7450	7240	7060	6860	6640	6380	6080	5950	5630
4	8820	7880	7640	7440	7240	7050	6850	6630	6370	6080	5940	5620
5	8780	7880	7630	7430	7230	7040	6850	6620	6340	6070	5940	5610
6	8740	7870	7630	7420	7220	7040	6840	6610	6310	6060	5930	5610
7	8700	7850	7620	7420	7220	7030	6840	6600	6290	6060	5930	5620
8	8670	7820	7610	7410	7210	7030	6830	6590	6280	6050	5920	5620
9	8630	7810	7600	7410	7200	7020	6820	6580	6280	6040	5910	5620
10	8580	7810	7600	7400	7200	7010	6820	6570	6270	6040	5910	5620
11	8540	7800	7590	7390	7190	7010	6810	6560	6260	6030	5900	5620
12	8500	7790	7590	7380	7180	7000	6800	6550	6250	6020	5890	5620
13	8460	7780	7580	7380	7180	6990	6800	6540	6240	6020	5880	5620
14	8430	7780	7570	7370	7170	6990	6790	6540	6240	6010	5880	5610
15	8390	7770	7570	7360	7170	6980	6780	6530	6230	6010	5870	5610
16	8350	7760	7560	7360	7160	6970	6770	6520	6220	6010	5860	5600
17	8320	7750	7560	7350	7150	6970	6770	6510	6210	6010	5850	5590
18	8280	7750	7550	7340	7150	6970	6760	6500	6200	6000	5850	5590
19	8250	7740	7540	7340	7140	6960	6750	6500	6200	6000	5840	5580
20	8210	7730	7530	7330	7140	6950	6740	6490	6190	6000	5830	5570
21	8170	7720	7530	7320	7130	6940	6730	6480	6180	5990	5820	5560
22	8140	7710	7520	7320	7120	6940	6720	6470	6170	6000	5810	5560
23	8100	7710	7520	7310	7110	6930	6720	6460	6160	6000	5800	5550
24	8060	7700	7510	7300	7110	6930	6710	6460	6150	5990	5790	5540
25	8030	7700	7500	7300	7100	6920	6700	6450	6150	5990	5780	5540
26	7990	7690	7500	7290	7100	6910	6700	6440	6140	5980	5760	5510
27	7950	7680	7490	7290	7090	6910	6690	6430	6130	5980	5740	5480
28	7940	7670	7480	7280	7080	6900	6680	6420	6120	5970	5710	5450
29	7930	7660	7480	7270	---	6900	6670	6420	6120	5960	5680	5450
30	7920	7660	7470	7270	---	6890	6660	6410	6110	5950	5650	5440
31	7910	---	7470	7260	---	6880	---	6400	---	5950	5650	---
MAX	8940	7910	7650	7460	7260	7070	6870	6650	6390	6100	5950	5640
MIN	7910	7660	7470	7260	7080	6880	6660	6400	6110	5950	5650	5440
(*)	6687.96	6686.54	6685.49	6684.27	6683.14	6681.89	6680.51	6678.72	6676.63	6675.49	6673.33	6671.86
(**)	-1070	-250	-190	-210	-180	-200	-220	-260	-290	-160	-300	-210
CAL YR 2001	MAX 15220	MIN 6120	(**)	+1200								
WTR YR 2002	MAX 8940	MIN 5440	(**)	-3540								

(*) Elevation, in feet, at end of month.

(**) Change in contents, in acre-feet.

LITTLE COLORADO RIVER BASIN

09400350 LITTLE COLORADO RIVER NEAR WINSLOW, AZ

LOCATION--Lat 35° 00'42", long 110° 39'02", in SW_{1/4}SE_{1/4} sec. 28, T.19 N., R.16 E., Navajo County, Hydrologic Unit 15020008, about 4 mi east of Winslow, in the median of I-40, on the east side of the bridge, about 0.5 mi east of exit 257.

DRAINAGE AREA--Unknown.

PERIOD OF RECORD--Dec. 2001 to current year. Records for May 1954 to Sept. 1956 at site 1 mi upstream, a major tributary enters between the two sties, records are not equivalent.

GAGE--Water-stage recorder and crest-stage gage. Datum of gage is 4,863 ft above sea level, from Navajo County survey marker.

REMARKS--Records fair except for estimated daily discharges, which are poor. Flow is regulated by reservoirs upstream. Many diversions for irrigation above gage.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 10,800 ft³/s Sept. 12, 2002, gage height, 18.06 ft; minimum daily discharge, 1.0 ft³/s Aug. 18--19, 2002.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 8,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 12	0100	*10,800	*18.06

Minimum daily discharge, 1.0 ft³/s, Aug. 18--19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	10	8.6	6.1	7.2	3.7	2.6	2.3	35	37
2	---	---	---	8.9	4.6	5.4	7.5	4.2	2.6	2.2	36	9.3
3	---	---	---	8.7	5.3	11	7.9	4.4	2.8	2.3	38	8.7
4	---	---	---	8.8	5.6	7.6	8.7	4.7	2.8	2.6	100	8.0
5	---	---	---	10	4.8	7.7	8.6	4.4	2.8	2.4	68	8.1
6	---	---	---	9.6	6.8	8.2	11	4.2	2.8	2.3	608	6.0
7	---	---	---	9.2	5.4	7.1	21	4.0	2.7	2.3	241	4.6
8	---	---	---	10	4.8	6.6	e19	4.3	2.2	2.4	65	1210
9	---	---	---	9.1	4.4	6.5	e21	4.3	2.2	2.3	26	1460
10	---	---	---	7.9	5.0	6.8	e36	3.4	2.6	2.3	10	1420
11	---	---	---	7.4	5.3	6.2	24	3.3	2.7	2.3	5.6	5420
12	---	---	---	8.8	5.3	6.9	13	4.0	2.7	2.2	2.6	8280
13	---	---	7.8	11	5.7	5.7	9.6	4.1	2.7	2.2	1.6	3450
14	---	---	9.1	9.5	6.0	5.4	8.2	3.6	2.4	2.1	1.3	1840
15	---	---	8.7	7.8	5.5	5.9	5.4	3.6	2.4	2.2	1.2	1650
16	---	---	8.1	7.4	5.6	5.1	5.4	3.6	2.4	32	1.2	904
17	---	---	8.3	6.8	5.1	5.5	4.6	3.5	2.4	34	1.1	261
18	---	---	8.8	5.6	4.7	5.7	4.7	3.3	2.4	25	1.0	98
19	---	---	8.6	5.8	5.1	5.8	4.6	3.1	2.4	20	1.0	109
20	---	---	8.0	5.8	5.0	6.1	4.9	2.9	2.3	5.5	5.1	493
21	---	---	7.8	6.1	5.0	6.3	5.7	2.9	2.1	2.7	144	418
22	---	---	7.0	5.6	5.1	5.8	6.4	3.5	2.3	1.8	134	582
23	---	---	5.8	4.9	5.3	5.4	6.9	3.3	2.4	7.7	35	391
24	---	---	8.1	6.6	5.0	e5.5	6.5	3.6	2.3	4.9	8.8	e93
25	---	---	6.9	5.8	5.0	5.6	6.0	3.5	2.3	25	4.9	e53
26	---	---	7.4	5.8	5.5	5.4	4.8	3.2	2.4	127	4.0	e37
27	---	---	8.7	5.4	5.9	5.4	6.0	3.2	2.4	619	4.0	e30
28	---	---	8.5	5.0	6.5	5.5	5.2	3.2	2.3	521	3.7	e24
29	---	---	8.6	4.9	---	7.7	4.1	3.2	2.4	331	4.3	e18
30	---	---	9.0	4.8	---	7.2	3.5	3.1	2.4	69	331	e17
31	---	---	9.5	5.4	---	7.1	---	2.9	---	41	136	---
TOTAL	---	---	---	228.4	151.9	198.2	287.4	112.2	74.2	1901.0	2058.4	28339.7
MEAN	---	---	---	7.368	5.425	6.394	9.580	3.619	2.473	61.32	66.40	944.7
MAX	---	---	---	11	8.6	11	36	4.7	2.8	619	608	8280
MIN	---	---	---	4.8	4.4	5.1	3.5	2.9	2.1	1.8	1.0	4.6
MED	---	---	---	7.4	5.3	6.1	6.7	3.5	2.4	2.6	8.8	103
AC-FT	---	---	---	453	301	393	570	223	147	3770	4080	56210
CFSM	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06

e Estimated

LITTLE COLORADO RIVER BASIN

09400562 ORAIBI WASH NEAR TOLANI LAKE, AZ

LOCATION--Lat 35° 34'47", long 110° 46'24", NW^{1/4}SW^{1/4}SE^{1/4} sec. 7, T.25 N., R.15 E., Navajo County, Hydrologic Unit 15020012, on right bank, about 27 mi northeast of Leupp, AZ.

DRAINAGE AREA--635 mi².

PERIOD OF RECORD--July 1995 to current year.

GAGE--Water-stage recorder. Elevation of gage is 5,025 ft above sea level, from topographic map.

REMARKS--Records poor.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 799 ft³/s, Aug. 6, 1997, gage height 11.66 ft. Minimum daily discharge, no flow for many days.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 423 ft³/s, Aug. 31, gage height 9.23 ft. Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e25
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	e4.5
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	169
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	182
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	164
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.3	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.9	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.5	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	1.1	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	e0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	e175	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.80	175.30	824.43
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.219	5.655	27.48
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.9	175	182
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13	348	1640
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2002, BY WATER YEAR (WY)

	1995	1996	1997	1998	1999	2000	2001	2002
MEAN	4.519	0.054	0.000	0.000	0.000	0.253	0.134	0.007
MAX	19.0	0.21	0.001	0.000	0.000	1.41	0.94	0.049
(WY)	1998	2001	1998	1996	1996	1998	2000	2001
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1996	2000	1996	1996	1996	1996	1996	1996

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1995 - 2002
ANNUAL TOTAL	652.19	1006.53	
ANNUAL MEAN	1.787	2.758	2.434
HIGHEST ANNUAL MEAN			4.35
LOWEST ANNUAL MEAN			0.50
HIGHEST DAILY MEAN	156 Aug 6	182 Sep 9	276 Aug 6 1997
LOWEST DAILY MEAN	0.00 Jan 1	0.00 Oct 1	0.00 Jul 26 1995
ANNUAL SEVEN-DAY MINIMUM	0.00 Jan 1	0.00 Oct 1	0.00 Jul 26 1995
ANNUAL RUNOFF (AC-FT)	1290	2000	1760
ANNUAL RUNOFF (CFSM)	0.003	0.004	0.004
10 PERCENT EXCEEDS	0.00	0.00	0.00
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

LITTLE COLORADO RIVER BASIN

09400568 POLACCA WASH NEAR SECOND MESA, AZ

LOCATION--Lat 35° 39'21", long 110° 33'41", SE1/4NE1/4SW1/4 sec. 18, T.26 N., R.17 E., Navajo County, Hydrologic Unit 15020013 on the right bank, about 10 mi southwest of Second Mesa.

DRAINAGE AREA--905 mi².

PERIOD OF RECORD--Apr. 1994 to current year.

GAGE--Water-stage reader. Elevation of gage is 5,240 ft above sea level, from topographic map.

REMARKS--Records poor.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 1,020 ft³/s, Aug. 5, 1997, gage height 8.00 ft. Minimum daily discharge, no flow for many days.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 500 ft³/s July 23 at 1900, gage height 7.18 ft. Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.05	0.09	0.19	0.08	0.08	0.07	0.06	0.02	0.00	0.00	0.00
2	0.00	0.05	0.10	0.14	0.12	0.06	0.07	0.06	0.01	0.00	0.00	0.00
3	0.00	0.06	0.10	0.13	0.10	0.05	0.07	0.06	0.02	0.00	0.00	0.00
4	0.00	0.06	0.11	0.13	0.12	0.07	0.08	0.06	0.02	0.00	0.00	0.00
5	0.00	0.06	0.14	0.11	0.10	0.07	0.08	0.06	0.02	0.00	0.00	0.00
6	0.00	0.06	0.10	0.11	0.09	0.08	0.20	0.06	0.02	0.00	0.00	0.00
7	0.01	0.06	0.10	0.13	0.10	0.08	0.22	0.06	0.03	0.00	0.00	0.13
8	0.01	0.07	0.08	0.13	0.11	0.07	0.10	0.05	0.02	0.00	0.00	88
9	0.01	0.07	0.07	0.14	0.09	0.06	0.09	0.05	0.00	0.00	0.00	70
10	0.00	0.06	0.11	0.13	0.09	0.08	0.09	0.05	0.00	0.00	0.00	21
11	0.01	0.07	0.10	0.11	0.10	0.08	0.10	0.03	0.00	0.00	0.00	138
12	0.01	0.06	0.09	0.11	0.11	0.08	0.10	0.03	0.00	0.00	0.00	180
13	0.01	0.07	0.05	0.11	0.09	0.08	0.10	0.05	0.01	0.00	0.00	67
14	0.01	0.06	0.04	0.10	0.11	0.06	0.10	0.05	0.01	0.00	0.00	0.30
15	0.01	0.07	0.08	0.12	0.11	0.07	0.11	0.04	0.01	0.04	0.00	0.07
16	0.02	0.07	0.06	0.13	0.11	0.07	0.09	0.04	0.00	0.14	0.00	0.01
17	0.02	0.07	0.06	0.10	0.10	0.07	0.09	0.05	0.00	0.01	0.00	0.01
18	0.03	0.07	0.10	0.09	0.10	0.08	0.07	0.04	0.00	0.00	0.00	0.01
19	0.03	0.07	0.10	0.06	0.10	0.07	0.07	0.03	0.00	0.00	0.00	0.01
20	0.03	0.07	0.12	0.11	0.10	0.07	0.07	0.03	0.00	0.00	0.00	0.02
21	0.03	0.07	0.14	0.10	0.10	0.08	0.08	0.02	0.00	0.00	0.00	0.02
22	0.04	0.07	0.11	0.13	0.09	0.07	0.08	0.03	0.00	0.00	0.00	0.02
23	0.03	0.10	0.07	0.12	0.09	0.07	0.08	0.03	0.00	121	0.00	0.03
24	0.03	0.08	0.14	0.05	0.09	0.07	0.08	0.03	0.00	59	0.00	0.03
25	0.04	0.11	0.08	0.11	0.09	0.08	0.08	0.03	0.00	11	0.00	0.03
26	0.05	0.08	0.08	0.13	0.08	0.07	0.07	0.04	0.00	0.52	0.00	0.02
27	0.05	0.08	0.13	0.15	0.08	0.07	0.06	0.05	0.00	0.00	0.00	0.02
28	0.05	0.06	0.15	0.13	0.08	0.07	0.07	0.04	0.00	0.00	0.00	0.03
29	0.05	0.09	0.17	0.11	---	0.07	0.07	0.04	0.00	0.00	0.00	0.03
30	0.05	0.10	0.17	0.11	---	0.07	0.07	0.03	0.00	0.00	0.00	0.03
31	0.05	---	0.37	0.07	---	0.07	---	0.03	---	0.00	0.00	---
TOTAL	0.62	2.12	3.41	3.59	2.73	2.22	2.71	1.33	0.17	191.70	0.00	564.82
MEAN	0.020	0.071	0.110	0.116	0.098	0.072	0.090	0.043	0.006	6.184	0.000	18.83
MAX	0.05	0.11	0.37	0.19	0.12	0.08	0.22	0.06	0.03	121	0.00	180
MIN	0.00	0.05	0.04	0.05	0.08	0.05	0.06	0.02	0.00	0.00	0.00	0.00
AC-FT	1.2	4.2	6.8	7.1	5.4	4.4	5.4	2.6	0.3	380	0.00	1120

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2002, BY WATER YEAR (WY)

MEAN	6.867	0.283	0.183	0.226	0.254	0.255	0.212	0.142	0.061	3.342	10.73	7.219
MAX	33.9	0.96	0.35	0.40	0.55	0.42	0.37	0.25	0.092	14.6	31.2	21.5
(WY)	2001	1999	1995	1995	1995	2001	1994	1995	1998	2001	1999	1997
MIN	0.020	0.071	0.060	0.12	0.098	0.072	0.090	0.043	0.006	0.037	0.000	0.011
(WY)	2002	2002	2001	2002	2002	2002	2002	2002	2002	1994	2002	2000

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1994 - 2002

ANNUAL TOTAL	1391.78	775.42	
ANNUAL MEAN	3.813	2.124	2.586
HIGHEST ANNUAL MEAN			6.71 2001
LOWEST ANNUAL MEAN			0.096 1994
HIGHEST DAILY MEAN	201 Jul 10	180 Sep 12	365 Oct 24 2000
LOWEST DAILY MEAN	0.00 Jul 6	0.00 Oct 1	0.00 Nov 6 1999
ANNUAL SEVEN-DAY MINIMUM	0.00 Sep 7	0.00 Oct 1	0.00 Jul 21 2000
ANNUAL RUNOFF (AC-FT)	2760	1540	1870
10 PERCENT EXCEEDS	0.38	0.12	0.37
50 PERCENT EXCEEDS	0.10	0.06	0.13
90 PERCENT EXCEEDS	0.01	0.00	0.02

LITTLE COLORADO RIVER BASIN

09400583 JEDDITO WASH NEAR JEDDITO, AZ

LOCATION--Lat 35° 34' 39", long 110° 27' 42". NE1/4NW1/4NW1/4 sec. 18, T.25 N., R.18 E., Navajo County, Hydrologic Unit 15020014, on right upstream side of State Highway 87 bridge, about 20 mi southwest of Second Mesa, AZ.

DRAINAGE AREA--147 mi².

PERIOD OF RECORD--Sept. 1993 to current year.

GAGE--Water-stage recorder. Elevation of gage is 5,440 ft above sea level, from topographic map.

REMARKS--Records poor.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 1,220 ft³/s, Aug. 19, 1999, gage height 9.31 ft. Minimum daily discharge, no flow for many days.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 832 ft³/s Aug. 6 at 0245, gage height 7.19 ft. Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	22
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	e50
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	e0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e30
11	e0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e10
12	e0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.01
13	e0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
14	e0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
15	e0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	e0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	e0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.00	112.06
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.581	3.735
MAX	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80	50
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MED	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	159	222
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2002, BY WATER YEAR (WY)

MEAN	0.438	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.626	1.612	0.739
MAX	2.81	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.48	6.86	3.74
(WY)	1994	1994	1994	1994	1994	1994	1994	1994	1994	1999	1999	2002
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1995	1994	1994	1994	1994	1994	1994	1994	1994	1996	1998	1995

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1994 - 2002

ANNUAL TOTAL	105.60	192.06	
ANNUAL MEAN	0.289	0.526	0.288
HIGHEST ANNUAL MEAN			0.83 1999
LOWEST ANNUAL MEAN			0.002 1998
HIGHEST DAILY MEAN	35 Jul 15	80 Aug 6	80 Aug 6 2002
LOWEST DAILY MEAN	0.00 Jan 1	0.00 Oct 1	0.00 Oct 1 1993
ANNUAL SEVEN-DAY MINIMUM	0.00 Jan 1	0.00 Oct 1	0.00 Oct 12 1993
ANNUAL RUNOFF (AC-FT)	209	381	209
ANNUAL RUNOFF (CFSM)	0.002	0.004	0.002
10 PERCENT EXCEEDS	0.00	0.00	0.00
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

LITTLE COLORADO RIVER BASIN

09401110 DINNEBITO WASH NEAR SAND SPRINGS, AZ

LOCATION--Lat 35° 46'52", long 110° 55'57", in SW1/4SE1/4SE1/4 sec. 34, T.28 N., R.13 E., Navajo County, Hydrologic Unit 15020017, on the right bank, about 15 mi west of Old Oraibi.

DRAINAGE AREA--473 mi².

PERIOD OF RECORD--June 1993 to current year.

GAGE--Water-stage recorder. Elevation of gage is 5,160 ft above sea level, from topographic map.

REMARKS--Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 2,540 ft³/s, Aug. 11, gage height 12.53 ft.. Minimum daily discharge, 0.05 ft³/s, Aug. 16 and 23, 2002.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 2,090 ft³/s Sept. 11 at 2100, gage height 11.31 ft. Minimum daily discharge, 0.05 ft³/s, Aug. 16 and 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.13	0.42	0.25	e0.23	0.14	0.36	0.40	0.34	0.17	0.08	0.08	4.7
2	0.14	0.39	0.26	e0.23	0.19	0.30	0.39	0.33	0.16	0.07	0.07	0.34
3	0.16	0.40	0.25	0.24	0.20	0.23	0.38	0.33	0.17	0.07	0.09	0.14
4	0.17	0.42	0.38	0.30	0.22	0.29	0.40	0.32	0.17	0.09	0.09	0.12
5	0.18	0.39	0.33	0.23	0.22	0.38	0.39	0.34	0.17	0.09	0.09	0.10
6	0.19	0.38	0.22	0.24	0.20	0.43	0.54	0.32	0.17	0.07	0.08	0.10
7	0.32	0.39	0.23	0.25	0.21	0.41	0.73	0.31	0.16	0.07	0.09	525
8	0.25	0.38	0.22	0.27	0.27	0.38	0.47	0.30	0.14	0.07	0.08	211
9	0.22	0.38	0.21	0.27	0.24	0.35	0.40	0.30	0.12	0.08	0.08	63
10	0.22	0.38	0.22	0.26	0.22	0.39	0.40	0.27	0.13	0.10	0.08	4.2
11	0.24	0.38	0.23	0.22	0.23	0.40	0.41	0.26	0.14	0.11	0.07	e33
12	0.23	0.35	0.22	0.22	0.27	0.38	0.39	0.28	0.15	0.09	0.07	e5.3
13	0.24	0.35	0.17	0.21	0.26	0.38	0.39	0.29	0.13	0.07	0.07	e0.50
14	0.28	0.34	0.09	0.21	0.29	0.36	0.38	0.27	0.13	0.06	0.06	e0.30
15	0.30	0.32	0.08	0.23	0.28	0.37	0.35	0.25	0.11	0.06	0.06	e0.30
16	0.30	0.33	0.39	0.21	0.30	0.37	0.36	0.24	0.11	8.7	0.05	e0.20
17	0.33	0.33	0.19	0.18	0.31	0.39	0.34	0.24	0.11	0.44	0.06	e0.20
18	0.34	0.31	0.19	0.18	0.29	0.41	0.32	0.23	0.10	0.15	0.06	e0.20
19	0.34	0.30	0.19	0.15	0.29	0.39	0.32	0.23	0.10	0.12	0.06	e1.0
20	0.35	0.30	0.20	0.16	0.33	0.39	0.32	0.23	0.09	0.15	0.07	e0.40
21	0.38	0.29	0.22	0.17	0.32	0.41	0.34	0.21	0.09	0.10	0.07	e0.23
22	0.40	0.30	0.19	0.21	0.31	0.40	0.37	0.23	0.09	0.08	0.07	e0.16
23	0.41	0.70	0.17	0.21	0.35	0.36	0.37	0.24	0.09	0.07	0.05	e0.14
24	0.39	0.32	e0.17	0.14	0.34	0.41	0.37	0.24	0.08	31	0.07	e0.10
25	0.43	0.32	0.15	0.14	0.32	0.44	0.37	0.24	0.10	7.6	0.08	e0.10
26	0.46	0.28	0.12	0.18	0.33	0.42	0.34	0.24	0.09	0.50	0.08	e0.10
27	0.47	0.24	0.16	0.25	0.31	0.41	0.34	0.25	0.10	6.4	0.07	e0.10
28	0.43	0.20	e0.22	0.24	0.38	0.41	0.36	0.23	0.08	1.0	0.06	e0.08
29	0.43	0.24	e0.22	0.21	---	0.41	0.36	0.22	0.08	0.14	0.06	e0.07
30	0.44	0.26	e0.22	0.20	---	0.39	0.29	0.20	0.08	0.11	54	e0.07
31	0.44	---	e0.22	0.15	---	0.39	---	0.19	---	0.09	23	---
TOTAL	9.61	10.39	6.58	6.59	7.62	11.81	11.59	8.17	3.61	57.83	79.07	851.25
MEAN	0.310	0.346	0.212	0.213	0.272	0.381	0.386	0.264	0.120	1.865	2.551	28.38
MAX	0.47	0.70	0.39	0.30	0.38	0.44	0.73	0.34	0.17	31	54	525
MIN	0.13	0.20	0.08	0.14	0.14	0.23	0.29	0.19	0.08	0.06	0.05	0.07
AC-FT	19	21	13	13	15	23	23	16	7.2	115	157	1690
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2002, BY WATER YEAR (WY)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		
MEAN	4.328	0.462	0.411	0.442	0.424	0.852	0.387	0.318	0.311	3.807	11.13	10.83
MAX	19.2	0.62	0.57	0.67	0.58	2.69	0.50	0.44	0.98	13.8	36.8	31.9
(WY)	1998	1997	1994	1995	1994	1998	1994	1994	1999	1999	2001	1997
MIN	0.25	0.30	0.21	0.21	0.27	0.37	0.27	0.21	0.12	0.17	0.29	0.18
(WY)	1996	2000	2002	2002	2002	1995	1997	1997	2002	2000	1994	2000

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1993 - 2002

ANNUAL TOTAL	1563.54	1064.12	
ANNUAL MEAN	4.284	2.915	2.963
HIGHEST ANNUAL MEAN			6.16
LOWEST ANNUAL MEAN			0.45
HIGHEST DAILY MEAN	556	Aug 11	525
LOWEST DAILY MEAN	0.07	Sep 11	0.05
ANNUAL SEVEN-DAY MINIMUM	0.14	Sep 6	0.06
ANNUAL RUNOFF (AC-FT)	3100		2110
ANNUAL RUNOFF (CFSM)	0.009		0.006
10 PERCENT EXCEEDS	0.74		0.41
50 PERCENT EXCEEDS	0.34		0.24
90 PERCENT EXCEEDS	0.16		0.08

e Estimated

LITTLE COLORADO RIVER BASIN

09401260 MOENKOPI WASH AT MOENKOPI, AZ

LOCATION--Lat 36° 06'18", long 111° 12'04", in NW^{1/4}NE^{1/4} sec. 3, T.31 N., R.11 E. (unsurveyed), Coconino County, Hydrologic Unit 15020018, in Hopi Indian Reservation on right bank, 100 ft upstream from bridge on State Highway 264, 1.3 mi southeast of Moenkopi, 2.5 mi downstream from former gaging station 09401250, and 12.5 mi downstream from Begashibito Wash.

DRAINAGE AREA--1,629 mi².

PERIOD OF RECORD--July 1976 to current year. Records for Oct. 1973 to July 1976, at site 2.5 mi upstream, not equivalent below 1.5 ft³/s due to channel losses.

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

GAGE--Water-stage recorder and crest stage gages. Elevation of gage is 4,610 ft above sea level, from topographic map.

REMARKS--Records poor.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 10,100 ft³/s Sept. 30, 1983, gage height, 15.10 ft, from rating curve extended above 220 ft³/s on basis of step-backwater computation at gage heights 12.2 ft, 15.0 ft, and 17.8 ft; maximum gage height, 16.64, Sept. 8, 2002, from floodmark. No flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD--A discharge of 15,100 ft³/s occurred Aug. 4, 1929, at former streamflow-gaging station site 3.5 mi downstream.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 1,200 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 8	unknown	*5,200	*16.64
Sept. 11	0845	2,650	13.52

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	1.1	2.1	2.7	e1.0	e2.2	e2.1	2.4	0.00	0.00	0.00	0.86
2	0.00	1.1	2.0	2.2	e1.7	2.2	2.2	2.0	0.00	0.00	0.00	0.41
3	0.00	1.1	1.8	2.1	e2.0	e2.2	2.2	1.9	0.00	0.00	0.00	0.02
4	0.00	1.2	1.9	2.1	e2.0	e2.2	2.2	1.7	0.00	0.00	0.00	0.00
5	0.00	1.5	2.0	2.0	e2.0	2.5	2.2	1.3	0.00	0.00	0.00	0.00
6	0.03	1.5	1.7	2.2	e1.8	2.7	2.3	1.3	0.00	0.00	0.00	0.00
7	2.1	1.5	1.8	2.1	e1.9	2.9	2.6	1.2	0.00	0.00	0.00	676
8	1.7	1.5	2.0	2.0	e2.0	2.6	2.2	e1.0	0.00	0.00	0.00	e1800
9	0.95	1.5	2.3	e2.0	e2.0	2.9	2.2	e0.80	0.00	0.00	0.00	e170
10	0.79	1.5	2.3	e2.0	e2.3	e3.0	2.2	0.73	0.00	0.00	0.00	46
11	0.82	1.5	2.9	e2.0	2.2	e3.0	2.2	0.55	0.00	0.00	0.00	840
12	0.80	1.5	2.9	e2.0	2.3	e3.0	2.2	0.48	0.00	0.00	0.00	72
13	0.83	1.5	2.3	e2.0	e2.2	e2.9	2.2	0.39	0.00	0.00	0.00	71
14	0.83	1.5	2.3	e2.0	e2.4	e2.9	2.1	0.40	0.00	0.00	0.00	16
15	0.83	1.5	2.8	e1.4	2.3	2.8	2.2	0.30	0.00	0.00	0.00	5.9
16	0.83	1.5	2.3	e1.2	2.5	2.7	2.2	0.14	0.00	0.35	0.00	3.4
17	0.83	1.5	2.4	e1.4	e2.4	2.6	2.0	e0.14	0.00	e0.10	0.00	2.6
18	0.83	1.7	2.5	e2.3	2.5	2.9	1.8	e0.14	0.00	0.00	0.00	2.0
19	0.83	1.7	2.4	e0.90	2.6	2.9	1.8	e0.14	0.00	0.00	0.00	1.9
20	0.83	1.6	2.7	e1.2	2.8	2.8	1.9	e0.13	0.00	0.00	0.00	1.8
21	0.83	1.7	3.0	e2.2	2.9	2.9	2.0	e0.13	0.00	0.00	0.00	1.6
22	1.1	1.8	2.6	e2.2	2.8	3.0	2.2	e0.13	0.00	0.00	0.00	1.4
23	0.98	1.8	2.6	e2.3	2.8	2.7	2.1	0.06	0.00	0.00	0.00	1.3
24	0.83	1.7	3.0	e1.3	3.0	e3.0	2.1	0.04	0.00	0.00	0.00	1.3
25	0.84	2.2	2.8	e1.1	2.7	3.0	1.9	0.04	0.00	38	0.00	1.3
26	1.0	2.6	e2.8	e2.0	2.8	2.5	1.9	0.03	0.00	12	0.00	1.2
27	1.1	2.1	e2.8	e2.1	2.3	2.2	1.8	0.04	0.00	51	0.00	1.2
28	1.1	2.7	3.8	e2.0	2.2	e2.2	1.8	0.04	0.00	18	0.00	1.2
29	1.1	2.9	3.7	e1.9	---	2.2	1.8	0.03	0.00	1.2	0.00	1.2
30	1.1	2.9	3.5	e1.6	---	e2.2	2.0	0.01	0.00	0.06	144	1.2
31	1.1	---	2.9	e1.0	---	e2.2	---	0.01	---	0.01	5.5	---
TOTAL	24.91	51.4	78.9	57.50	64.4	82.0	62.6	17.70	0.00	120.72	149.50	3722.79
MEAN	0.804	1.713	2.545	1.855	2.300	2.645	2.087	0.571	0.000	3.894	4.823	124.1
MAX	2.1	2.9	3.8	2.7	3.0	3.0	2.6	2.4	0.00	51	144	1800
MIN	0.00	1.1	1.7	0.90	1.0	2.2	1.8	0.01	0.00	0.00	0.00	0.00
AC-FT	49	102	156	114	128	163	124	35	0.00	239	297	7380

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2002, BY WATER YEAR (WY)

MEAN	10.34	6.040	3.316	4.627	7.066	3.746	2.401	2.103	0.606	13.48	31.11	28.60
MAX	81.8	70.6	13.5	28.1	47.6	10.5	8.54	15.5	10.6	91.6	180	134
(WY)	1982	1988	1979	1993	1993	1993	1988	1992	1988	1977	2001	1983
MIN	0.24	1.14	0.62	1.20	1.90	1.68	1.01	0.31	0.000	0.000	0.000	0.000
(WY)	1992	1981	1981	2001	2001	1997	1979	1984	1984	1979	1978	1979

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1977 - 2002	
ANNUAL TOTAL	7431.00		4432.42			
ANNUAL MEAN	20.36		12.14		9.472	
HIGHEST ANNUAL MEAN					21.7	
LOWEST ANNUAL MEAN					2.14	
HIGHEST DAILY MEAN	1510	Aug 11	1800	Sep 8	3500	Sep 30 1983
LOWEST DAILY MEAN	0.00	May 27	0.00	Oct 1	0.00	Jun 15 1977
ANNUAL SEVEN-DAY MINIMUM	0.00	May 27	0.00	Jun 1	0.00	Jun 15 1977
ANNUAL RUNOFF (AC-FT)	14740		8790		6860	
10 PERCENT EXCEEDS	4.8		2.9		6.0	
50 PERCENT EXCEEDS	1.5		1.5		2.0	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated

LITTLE COLORADO RIVER BASIN

09402000 LITTLE COLORADO RIVER NEAR CAMERON, AZ

LOCATION--Lat 35° 55'35", long 111° 34'00", in NW_{1/4} sec. 5, T.29 N., R.8 E. (unsurveyed), Coconino County, Hydrologic Unit 15020016, in Navajo Indian Reservation, on left bank 3 mi downstream from Coconino damsite, 9.5 mi downstream from Moenkopi Wash, 9.5 mi northwest of Cameron, and 45 mi upstream from mouth.

DRAINAGE AREA--26,459 mi², of which 368 mi² are noncontributing.

PERIOD OF RECORD--June 1947 to current year.

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

GAGE--Water-stage recorder. Datum of gage is 3,979.2 ft above sea level.

REMARKS--Records good except for estimated daily discharges, which are poor. Diversions above station for irrigation of about 32,000 acres. Some regulation by reservoirs above station (combined capacity of principal reservoirs, about 135,000 acre-ft).

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 24,900 ft³/s Jan. 21, 1952, gage height, 20.7 ft; no flow at times in each year.

EXTREMES OUTSIDE PERIOD OF RECORD--A discharge of about 120,000 ft³/s occurred on Sept. 19 or 20, 1923, based on discharge at Grand Falls.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 4,000 ft³/s and (or) maximum (*)

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 7.....	2000	5,340	9.64
Sept. 11.....	0515	*11,400	*13.99
Sept. 16.....	0830	4,010	8.46

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.04	0.00	0.85	22	0.26	0.02	0.00	0.00	0.00	0.00	e60	116
2	e0.01	0.00	0.94	4.7	0.05	0.00	0.00	0.00	0.00	0.00	e20	129
3	0.00	0.00	1.1	3.1	0.02	0.00	0.00	0.00	0.00	0.00	e10	79
4	0.00	0.00	1.3	1.8	0.00	0.00	0.00	0.00	0.00	0.00	e30	44
5	0.00	0.00	1.1	1.4	0.00	0.00	0.00	0.00	0.00	0.00	e30	23
6	0.00	0.00	1.0	1.2	0.00	0.00	0.00	0.00	0.00	0.00	e5.0	9.0
7	43	0.00	0.97	1.0	0.34	0.00	0.00	0.00	0.00	0.00	11	1630
8	51	0.00	0.65	1.3	0.45	0.00	0.00	0.00	0.00	0.00	399	2800
9	44	0.00	0.37	1.5	0.30	0.15	0.00	0.00	0.00	0.00	151	1530
10	2.0	0.00	0.18	1.7	0.88	0.04	0.00	0.00	0.00	0.00	63	2860
11	0.86	0.00	0.05	1.5	0.81	0.00	0.00	0.00	0.00	0.00	40	8360
12	0.62	0.00	0.03	1.2	1.0	0.00	0.00	0.00	0.00	0.00	25	2220
13	0.55	0.00	0.18	0.95	1.0	0.00	0.00	0.00	0.00	0.00	13	1850
14	0.51	0.00	0.16	0.69	1.4	0.00	0.00	0.00	0.00	0.00	5.6	2010
15	0.43	0.00	0.06	0.58	1.6	0.00	0.00	0.00	0.00	0.00	1.9	3040
16	0.43	0.00	0.03	0.85	1.5	0.00	0.00	0.00	0.00	0.00	0.45	3690
17	4.7	0.00	0.00	1.2	1.4	0.00	0.00	0.00	0.00	0.00	0.06	1990
18	3.3	0.00	0.00	0.72	1.3	0.00	0.00	0.00	0.00	0.00	0.01	641
19	1.2	0.00	0.00	0.29	1.3	0.00	0.00	0.00	0.00	0.00	0.00	257
20	0.35	0.00	0.00	0.06	1.3	0.00	0.00	0.00	0.00	0.00	24	99
21	0.14	0.00	0.00	0.04	1.2	0.00	0.00	0.00	0.00	0.00	56	46
22	0.10	0.00	0.00	0.04	0.98	0.00	0.00	0.00	0.00	0.00	3.5	278
23	0.08	0.00	0.00	0.03	1.0	0.00	0.00	0.00	0.00	0.00	3.0	313
24	0.06	0.00	0.00	0.01	0.56	0.00	0.00	0.00	0.00	0.00	42	502
25	0.04	0.02	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	49	263
26	0.02	0.96	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.66	28	80
27	0.00	1.2	0.00	0.00	0.07	0.00	0.00	0.00	0.00	135	15	36
28	0.00	1.4	0.00	0.97	0.05	0.00	0.00	0.00	0.00	29	3.2	17
29	0.00	0.74	0.08	2.7	---	0.00	0.00	0.00	0.00	315	1.1	4.9
30	0.00	0.60	2.5	2.2	---	0.00	0.00	0.00	0.00	513	98	0.97
31	0.00	---	2.5	1.1	---	0.00	---	0.00	---	212	32	---
TOTAL	153.44	4.92	14.05	54.83	19.00	0.21	0.00	0.00	0.00	1204.66	1219.82	34917.87
MEAN	4.950	0.164	0.453	1.769	0.679	0.007	0.000	0.000	0.000	38.86	39.35	1164
MAX	51	1.4	2.5	22	1.6	0.15	0.00	0.00	0.00	513	399	8360
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97
AC-FT	304	9.8	28	109	38	0.4	0.00	0.00	0.00	2390	2420	69260

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2002, BY WATER YEAR (WY)

MEAN	204.3	72.83	96.74	224.5	250.9	462.1	559.2	128.3	15.75	106.6	357.8	238.8
MAX	4192	753	1689	4692	2723	1873	3970	2882	595	616	2264	1164
(WY)	1973	1988	1979	1993	1993	1978	1973	1973	1955	1954	1955	2002
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1951	1956	1957	1964	1964	1951	1971	1950	1950	1960	1960	1979

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1948 - 2002	
ANNUAL TOTAL	29126.41		37588.80			
ANNUAL MEAN	79.80		103.0		226.4	
HIGHEST ANNUAL MEAN					1127	
LOWEST ANNUAL MEAN					14.1	
HIGHEST DAILY MEAN	1680	Aug 15	8360	Sep 11	18400	Oct 19 1972
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 3	0.00	Oct 1 1947
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 27	0.00	Oct 1 1947
ANNUAL RUNOFF (AC-FT)	57770		74560		164000	
10 PERCENT EXCEEDS	251		44		612	
50 PERCENT EXCEEDS	0.71		0.00		2.4	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated

LITTLE COLORADO RIVER BASIN
09402000 LITTLE COLORADO RIVER NEAR CAMERON, AZ—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Oct. 1956 to Sept. 1970, Oct. 1989 to current year.

INSTRUMENTATION.--Automatic pumping sampler since Oct. 1990.

REMARKS.--Suspended-sediment total and sand discharge computed from sample data and by interpretation of a sample based suspended-sediment and streamflow-discharge curve. Record for days when instantaneous discharge over the crest of the dam exceeds 20 ft³/s from Oct. 1989 to current year.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1520	47700	---	---	---	4540	2740	7530	---	---	---	---
2	---	64100	---	---	---	2570	1910	4510	---	---	---	---
3	---	27400	---	---	---	1480	1340	2650	---	---	---	---
4	---	11500	---	---	---	834	976	1660	---	---	79000	---
5	---	6230	---	---	---	485	837	985	---	---	88600	---
6	---	26900	---	---	---	313	820	---	---	---	47900	---
7	---	35100	---	---	---	219	696	---	---	---	80800	---
8	---	17700	---	---	---	1060	538	---	---	---	306000	---
9	---	37400	---	---	---	949	458	---	---	---	37900	---
10	1940	28200	---	---	---	5570	374	---	---	---	50200	---
11	---	15500	---	---	---	7100	321	---	---	35700	350000	---
12	---	6780	---	---	---	2650	275	---	---	110000	380000	---
13	---	3190	---	---	---	9910	7250	---	---	17500	261000	---
14	---	1610	---	---	---	17100	12300	---	---	8310	259000	---
15	---	e833	---	---	---	6780	7270	---	---	4660	348000	50800
16	1020	e487	---	---	---	4260	4900	---	---	---	224000	32100
17	2960	e347	---	---	466	3410	4100	---	---	---	87400	8500
18	920	---	---	---	409	4700	6310	---	---	---	54000	609
19	328	---	---	---	---	13000	8410	---	---	---	21700	1260
20	---	---	---	---	---	8630	6870	---	---	---	9130	18100
21	---	---	---	---	---	4590	3320	---	---	---	6360	2360
22	208000	---	---	---	---	3990	2050	---	---	---	6780	742
23	39400	---	---	---	---	5360	1270	---	---	---	8770	198
24	96700	---	---	---	---	20800	754	---	---	---	8270	71.0
25	385000	---	---	---	---	35600	441	---	---	---	1730	---
26	e397000	---	---	---	641	38900	276	---	---	---	430	---
27	e284000	---	---	---	483	20000	196	---	---	---	---	---
28	e722000	---	---	---	5110	12900	165	---	---	---	---	---
29	e65000	---	---	---	---	8800	118	---	---	---	---	---
30	61600	---	---	---	---	6020	79.0	---	---	---	385	---
31	149000	---	---	---	---	4120	---	---	---	---	e384	---
MAX	---	---	---	---	---	38900	12300	---	---	---	---	---
MIN	---	---	---	---	---	219	79.0	---	---	---	---	---

e Estimated

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	87.0	---	---	---	---	---	---	e10200	18500
2	---	---	---	---	---	---	---	---	---	---	---	16400
3	---	---	---	---	---	---	---	---	---	---	---	8410
4	---	---	---	---	---	---	---	---	---	---	e5740	4140
5	---	---	---	---	---	---	---	---	---	---	e5470	1990
6	---	---	---	---	---	---	---	---	---	---	---	---
7	990	---	---	---	---	---	---	---	---	---	---	388000
8	4240	---	---	---	---	---	---	---	---	---	101000	657000
9	4820	---	---	---	---	---	---	---	---	---	28400	305000
10	---	---	---	---	---	---	---	---	---	---	9530	938000
11	---	---	---	---	---	---	---	---	---	---	4990	4030000
12	---	---	---	---	---	---	---	---	---	---	2450	345000
13	---	---	---	---	---	---	---	---	---	---	---	213000
14	---	---	---	---	---	---	---	---	---	---	---	233000
15	---	---	---	---	---	---	---	---	---	---	---	375000
16	---	---	---	---	---	---	---	---	---	---	---	293000
17	---	---	---	---	---	---	---	---	---	---	---	104000
18	---	---	---	---	---	---	---	---	---	---	---	31600
19	---	---	---	---	---	---	---	---	---	---	---	11600
20	---	---	---	---	---	---	---	---	---	---	2190	4150
21	---	---	---	---	---	---	---	---	---	---	5250	1670
22	---	---	---	---	---	---	---	---	---	---	---	16800
23	---	---	---	---	---	---	---	---	---	---	---	22300
24	---	---	---	---	---	---	---	---	---	---	2860	35800
25	---	---	---	---	---	---	---	---	---	---	2830	13900
26	---	---	---	---	---	---	---	---	---	---	1540	2680
27	---	---	---	---	---	---	---	---	---	53700	---	560
28	---	---	---	---	---	---	---	---	---	3310	---	---
29	---	---	---	---	---	---	---	---	---	91800	---	---
30	---	---	---	---	---	---	---	---	---	116000	17600	---
31	---	---	---	---	---	---	---	---	---	38100	4080	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

e Estimated

LITTLE COLORADO RIVER BASIN
09402000 LITTLE COLORADO RIVER NEAR CAMERON, AZ—CONTINUED

SEDIMENT DISCHARGE, SUSPENDED, SIEVE DIAM. GREATER THAN .062 MM (TONS/DAY)
 WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	591	---	---	---	17	220	38	---	---	---	---
2	---	657	---	---	---	12	116	12	---	---	---	---
3	---	186	---	---	---	8.8	57	4.2	---	---	---	---
4	---	69	---	---	---	5.3	37	2.6	---	---	2050	---
5	---	31	---	---	---	3.9	39	2.0	---	---	1330	---
6	---	269	---	---	---	3.2	56	---	---	---	589	---
7	---	376	---	---	---	2.9	50	---	---	---	1900	---
8	---	165	---	---	---	5.2	30	---	---	---	7900	---
9	---	400	---	---	---	1.7	22	---	---	---	94	---
10	6.8	364	---	---	---	98	15	---	---	---	435	---
11	---	198	---	---	---	100	12	---	---	78	4410	---
12	---	65	---	---	---	13	8.3	---	---	184	8380	---
13	---	20	---	---	---	178	211	---	---	7.7	5150	---
14	---	13	---	---	---	389	378	---	---	0.96	4660	---
15	---	e9.7	---	---	---	218	225	---	---	0.25	7080	1050
16	4.3	e7.3	---	---	---	123	166	---	---	---	4680	793
17	11	e5.5	---	---	2.2	87	108	---	---	---	1850	285
18	3.1	---	---	---	1.9	124	297	---	---	---	672	24
19	0.85	---	---	---	---	399	613	---	---	---	99	33
20	---	---	---	---	---	342	457	---	---	---	21	539
21	---	---	---	---	---	271	293	---	---	---	20	78
22	5480	---	---	---	---	234	172	---	---	---	30	26
23	859	---	---	---	---	274	111	---	---	---	92	8.0
24	3030	---	---	---	---	1060	54	---	---	---	113	1.3
25	9370	---	---	---	---	1850	37	---	---	---	16	---
26	e11600	---	---	---	5.1	2080	35	---	---	---	2.8	---
27	e6160	---	---	---	4.5	1530	18	---	---	---	---	---
28	e14100	---	---	---	22	1140	8.2	---	---	---	---	---
29	e850	---	---	---	---	839	2.8	---	---	---	---	---
30	953	---	---	---	---	597	0.66	---	---	---	0.73	---
31	4260	---	---	---	---	379	---	---	---	---	e0.37	---

e Estimated

SEDIMENT DISCHARGE, SUSPENDED, SIEVE DIAM. GREATER THAN .062 MM (TONS/DAY)
 WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	0.51	---	---	---	---	---	---	e20	93
2	---	---	---	---	---	---	---	---	---	---	---	24
3	---	---	---	---	---	---	---	---	---	---	---	8.9
4	---	---	---	---	---	---	---	---	---	---	e0.85	3.1
5	---	---	---	---	---	---	---	---	---	---	e0.46	0.86
6	---	---	---	---	---	---	---	---	---	---	---	---
7	8.1	---	---	---	---	---	---	---	---	---	---	21700
8	81	---	---	---	---	---	---	---	---	---	919	22700
9	38	---	---	---	---	---	---	---	---	---	117	7410
10	---	---	---	---	---	---	---	---	---	---	11	45100
11	---	---	---	---	---	---	---	---	---	---	3.2	247000
12	---	---	---	---	---	---	---	---	---	---	1.2	24800
13	---	---	---	---	---	---	---	---	---	---	---	15300
14	---	---	---	---	---	---	---	---	---	---	---	17700
15	---	---	---	---	---	---	---	---	---	---	---	40400
16	---	---	---	---	---	---	---	---	---	---	---	52800
17	---	---	---	---	---	---	---	---	---	---	---	12600
18	---	---	---	---	---	---	---	---	---	---	---	1300
19	---	---	---	---	---	---	---	---	---	---	---	125
20	---	---	---	---	---	---	---	---	---	---	6.8	12
21	---	---	---	---	---	---	---	---	---	---	22	2.7
22	---	---	---	---	---	---	---	---	---	---	---	84
23	---	---	---	---	---	---	---	---	---	---	---	49
24	---	---	---	---	---	---	---	---	---	---	5.9	306
25	---	---	---	---	---	---	---	---	---	---	5.5	75
26	---	---	---	---	---	---	---	---	---	---	1.2	14
27	---	---	---	---	---	---	---	---	---	2900	---	2.7
28	---	---	---	---	---	---	---	---	---	2.9	---	---
29	---	---	---	---	---	---	---	---	---	950	---	---
30	---	---	---	---	---	---	---	---	---	927	96	---
31	---	---	---	---	---	---	---	---	---	132	2.8	---

e Estimated

COTTONWOOD CREEK BASIN

09402450 COTTONWOOD SPRING ABOVE CONFLUENCE WITH COTTONWOOD CREEK, NEAR GRAND CANYON, AZ

LOCATION--Lat 36° 01'25", long 111° 59'15", in sec. 32, T.31 N., R.4 E. (unsurveyed), Hydrologic Unit 15010002, on the right bank 8 mi northeast of Grand Canyon Village, AZ.

DRAINAGE AREA--0.54 mi².

PERIOD OF RECORD--Sept. 1994 to current year.

GAGE--Water-stage recorder. Elevation of gage is 3,920 ft above sea level, from topographic map.

REMARKS--Records poor. Daily discharges are not calculated for periods of no gage-height record and when instantaneous discharge exceeds 0.20 ft³/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.000	0.001	0.011	0.015	0.014	0.007	0.003	0.001	0.000	0.000	0.000	0.000
2	0.000	0.001	0.011	0.013	0.015	0.007	0.003	0.001	0.000	0.000	0.000	0.000
3	0.000	0.002	0.010	0.011	0.013	0.007	0.002	0.001	0.000	0.000	0.000	0.000
4	0.002	0.001	0.014	0.011	0.012	0.007	0.002	0.001	0.000	0.000	0.000	0.000
5	0.003	0.002	0.010	0.011	0.011	0.007	0.003	0.001	0.000	0.000	0.000	0.000
6	0.003	0.003	0.009	0.011	0.009	0.007	0.003	0.001	0.000	0.000	0.000	0.000
7	0.003	0.003	0.010	0.011	0.006	0.013	0.004	0.001	0.000	0.000	0.000	---
8	0.003	0.003	0.011	0.011	0.006	0.023	0.004	0.001	0.000	0.000	0.000	---
9	0.002	0.003	0.011	0.011	0.005	0.016	0.003	0.001	0.000	0.000	0.000	---
10	0.002	0.004	---	0.011	0.005	0.013	0.003	0.000	0.000	0.000	0.000	---
11	0.002	0.003	---	0.011	0.006	0.010	0.003	0.000	0.000	0.000	0.000	---
12	0.002	0.003	---	0.011	0.006	0.008	0.003	0.000	0.000	0.000	0.000	---
13	0.002	0.003	---	0.011	0.007	0.007	0.003	0.000	0.000	0.000	0.000	---
14	0.002	0.003	---	0.011	0.007	0.007	0.003	0.000	0.000	0.000	0.000	---
15	0.002	0.003	---	0.011	0.006	0.008	0.003	0.000	0.000	0.000	0.000	---
16	0.001	0.003	---	0.011	0.006	0.015	0.003	0.000	0.000	0.000	0.000	---
17	0.002	0.003	---	0.011	0.006	0.026	0.003	0.000	0.000	0.000	0.000	---
18	0.002	0.003	---	0.011	0.006	0.024	0.003	0.000	0.000	0.000	0.000	---
19	0.002	0.003	---	0.014	0.006	0.013	0.003	0.000	0.000	0.000	0.000	---
20	0.001	0.003	---	0.013	0.006	0.010	0.002	0.000	0.000	0.000	0.000	---
21	0.002	0.003	---	0.013	0.005	0.008	0.002	0.000	0.000	0.000	0.000	---
22	0.003	0.003	---	0.012	0.005	0.007	0.002	0.000	0.000	0.000	0.000	---
23	0.003	0.011	---	0.011	0.005	0.006	0.002	0.000	0.000	0.000	0.000	---
24	0.004	0.011	---	0.010	0.005	0.008	0.001	0.000	0.000	0.000	0.000	---
25	0.003	0.022	0.010	0.011	0.008	0.007	0.001	0.000	0.000	0.000	0.000	---
26	0.001	0.016	0.008	0.012	0.008	0.005	0.001	0.000	0.000	0.000	0.000	---
27	0.001	0.015	0.008	0.012	0.008	0.004	0.001	0.000	0.000	0.000	0.000	---
28	0.001	0.012	0.008	0.012	0.008	0.005	0.001	0.000	0.000	0.000	0.000	---
29	0.001	0.011	0.008	0.011	---	0.005	0.001	0.000	0.000	0.000	0.000	---
30	0.001	0.011	0.008	0.011	---	0.004	0.001	0.000	0.000	0.000	0.000	---
31	0.001	---	0.019	0.012	---	0.003	---	0.000	---	0.000	0.000	---
TOTAL	0.057	0.168	---	0.358	0.210	0.297	0.072	0.009	0.000	0.000	0.000	---
MEAN	0.002	0.006	---	0.012	0.007	0.010	0.002	0.000	0.000	0.000	0.000	---
MAX	0.004	0.022	---	0.015	0.015	0.026	0.004	0.001	0.000	0.000	0.000	---
MIN	0.000	0.001	---	0.010	0.005	0.003	0.001	0.000	0.000	0.000	0.000	---
AC-FT	0.1	0.3	---	0.7	0.4	0.6	0.1	0.02	0.00	0.00	0.00	---

COLORADO RIVER MAIN STEM

09402500 COLORADO RIVER NEAR GRAND CANYON, AZ

LOCATION.--Lat 36° 06'05", long 112° 05'08", in sec. 5, T.31 N., R.3 E. (unsurveyed), Coconino County, Hydrologic Unit 15010001, in Grand Canyon National Park, on left bank 0.2 mi upstream from Kaibab Bridge, 0.4 mi upstream from Bright Angel Creek, 4.5 mi northeast of village of Grand Canyon, 26 mi downstream from Little Colorado River, and 267 mi upstream from Hoover Dam.

DRAINAGE AREA.--141,600 mi² approximately, including 3,959 mi² in Great Divide basin in southern Wyoming which is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct. 1922 to current year. Prior to 1944, published as "Colorado River at Bright Angel Creek, near Grand Canyon." Gage-height records collected 1.5 mi downstream 1908-13, published in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder. Datum of gage is 2,418.7 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated by Lake Powell, 104 mi upstream, since Mar. 13, 1963. (See elsewhere in this report.) Many diversions above station for irrigation, municipal, and industrial uses.

EXTREMES FOR PERIOD OF RECORD.--1922--62: Maximum discharge, 127,000 ft³/s July 2, 1927, gage height, 29.25 ft; minimum, 700 ft³/s Dec. 28, 1924, gage height, -0.70 ft.

1963--2001: Maximum discharge, 96,200 ft³/s June 29, 1983, gage height, 26.26 ft; minimum, 850 ft³/s Jan. 26, 1963, gage height, -0.55 ft, result of closing coffer dam at Glen Canyon Dam.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1884, 300,000 ft³/s about July 8, 1884 (computed on basis of flood studies at Lees Ferry). Crest discharge of flood of June 19, 1921, was 220,000 ft³/s, gage height, 37.5 ft from floodmarks, from rating curve extended above 120,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 21,400 ft³/s Sept. 11 at 1330, gage height, 12.37 ft. Minimum daily discharge, 7,600 ft³/s Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7600	10700	11400	14100	13800	11400	9710	10900	8480	12400	15900	14700
2	10500	10800	14200	12100	11700	10600	10800	10700	12700	15400	15200	9340
3	10600	10900	10800	14200	10400	9750	10800	10900	12300	15500	15200	7990
4	10600	10000	14200	13900	9940	9760	10700	11300	13500	15500	14700	8970
5	10700	9590	14400	14100	11700	10300	10700	10500	13500	13700	13900	8850
6	10700	10900	14200	12400	11700	10400	10800	9880	13300	15200	15000	8790
7	10700	10900	14100	11600	11400	10500	9840	11000	13300	14800	15300	10100
8	8210	10800	14000	13900	11300	10600	9780	10900	13300	13700	15600	11700
9	10600	10600	13300	13900	11400	10600	10800	10900	12500	15100	15800	10800
10	10900	10900	10400	14000	10500	9930	10800	10800	12200	15000	15500	10100
11	10900	10500	13900	14000	10100	9700	10800	10900	13300	15100	14500	16100
12	10700	9370	13900	14100	11800	10600	11100	10200	13300	15900	13900	12700
13	10800	10800	14000	12600	11800	10400	10900	9820	13300	15600	15100	10800
14	10600	10800	13900	11500	11700	10500	9980	10800	13300	15600	15200	10800
15	8120	10900	13900	13800	11700	10600	9750	10900	13300	13800	15200	10700
16	10500	10900	13500	13700	11700	10600	10800	10900	12600	15600	15300	11400
17	10700	10700	10600	14100	10500	10000	10800	11000	12200	15600	15400	11600
18	10700	10600	13800	14000	10300	9940	10800	10800	13300	15700	14700	10100
19	10800	9730	13900	13900	11700	10900	10900	10600	13300	15700	14000	9350
20	10800	11000	14200	12100	11800	10500	11000	9810	13300	15300	15700	9200
21	10600	10900	14100	11400	11700	10400	10100	10500	13400	15200	15300	9110
22	8120	10800	14000	13900	11700	10500	9850	10800	13500	13800	15300	8400
23	10600	9900	13700	14000	11700	10500	11100	10900	12700	15500	14500	8080
24	10700	10900	10700	14000	10500	9540	11000	10700	12100	15600	15200	9060
25	10800	10800	13900	14000	10200	9710	11000	8530	13300	15400	14600	9270
26	10700	9900	11100	14000	11700	10300	11000	8450	13400	15400	13900	9050
27	10700	11400	13800	12100	11700	10300	10900	8460	13400	15500	15400	8880
28	10600	11400	14100	12400	11500	10500	10100	8460	13400	15300	15500	8850
29	8080	11500	14100	14100	---	10400	9770	8460	13300	14000	15400	7890
30	10500	11300	13500	13700	---	10500	10800	8450	12600	15700	15300	7820
31	10600	---	11400	13800	---	9640	---	8480	---	16000	15400	---
TOTAL	317730	320190	411000	415400	317640	319870	317180	315700	387380	467600	466900	300500
MEAN	10250	10670	13260	13400	11340	10320	10570	10180	12910	15080	15060	10020
MAX	10900	11500	14400	14200	13800	11400	11100	11300	13500	16000	15900	16100
MIN	7600	9370	10400	11400	9940	9540	9710	8450	8480	12400	13900	7820
AC-FT	630200	635100	815200	823900	630000	634500	629100	626200	768400	927500	926100	596000
CAL YR 2001	TOTAL 4287720	MEAN 11750	MAX 15800	MIN 7410	AC-FT 8505000							
WTR YR 2002	TOTAL 4357090	MEAN 11940	MAX 16100	MIN 7600	AC-FT 8642000							

09402500 COLORADO RIVER NEAR GRAND CANYON , AZ--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD--Oct. 1925 to Nov. 1942, Sept. 1943 to Dec. 1987, Aug. 1990 to Apr. 1993, Apr. 1998 to current year.

PERIOD OF DAILY RECORD--

WATER TEMPERATURE: Oct. 1940 to Oct. 1942, Sept. 1943 to Sept. 1976, Apr. 1983 to Dec. 1987, Aug. 1990 to Apr. 1993, Apr. 1998 to current year.

SPECIFIC CONDUCTANCE: Oct. 1964 to Mar. 1974, Apr. 1983 to Dec. 1987, Aug. 1990 to Apr. 1993, Apr. 1998 to current year.

pH: Aug. 1990 to Apr. 1993.

DISSOLVED OXYGEN: Aug. 1990 to Apr. 1993.

SUSPENDED-SEDIMENT DISCHARGE: Oct. 1925 to Nov. 1942, Sept. 1943 to Sept. 1972, June 1983 to Dec. 1983, Sept. 1985 to Feb. 1986.

TURBIDITY: Feb. 1998 to Sept. 2000.

INSTRUMENTATION--Water-temperature recorder Nov. 1952 to Sept. 1976, Apr. 1983 to Dec. 1987, Aug. 1990 to Apr. 1993, Apr. 1998 to current year. Specific conductance recorder Oct. 1964 to Mar. 1974, Apr. 1983 to Dec. 1987, Aug. 1990 to Apr. 1993, Apr. 1998 to current year.

REMARKS--Temperature and specific conductance records are good. Unpublished chemical analyses for period Oct. 1930 to Sept. 1940, daily specific conductance measurements Oct. 1937 to Nov. 1942, Sept. 1943 to Sept. 1964, and daily water temperature Oct. 1936 to Sept. 1940, available from the district office in Tucson, AZ.

EXTREMES FOR PERIOD OF RECORD--

WATER TEMPERATURE (Apr. 1983 to Dec. 1987, Aug. 1990 to Apr. 1993, Apr. 1998 to Sept. 1998): Maximum recorded, 16.0° C on Aug. 26, 1984; minimum recorded, 5.7° C on Dec. 24, 25, 1990.

SPECIFIC CONDUCTANCE (Apr. 1983 to Dec. 1987, Aug. 1990 to Apr. 1993, Apr. 1998 to Sept. 1998): Maximum recorded, 1,440 microsiemens on Mar. 20, 1986; minimum recorded, 631 microsiemens Dec. 22, 1986.

pH: Maximum recorded 8.6 units, Nov. 5, 1990; minimum recorded, 7.7 units Nov. 5, 1990.

DISSOLVED OXYGEN: Maximum recorded, 11.4 mg/l, Jan. 23, 1993; minimum recorded, 9.8 mg/l, Nov. 27–30, 1991, May 26, 1992, Mar. 21 and 23, 1993.

TURBIDITY: Minimum daily 1.1 NTU on many days.

EXTREMES FOR CURRENT YEAR--

WATER TEMPERATURE: Maximum recorded, 15.9° C Sept. 11; minimum recorded, 7.3° C Feb. 10 and Mar. 4.

SPECIFIC CONDUCTANCE: Maximum recorded, 1,200 microsiemens, Sept. 9; minimum recorded, 699 microsiemens Sept. 12.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	12.9	12.4	12.7	11.0	10.4	10.7	9.3	8.7	9.0	10.0	9.7	9.8
2	12.9	12.3	12.5	10.9	10.3	10.6	9.5	9.1	9.2	9.8	9.4	9.5
3	12.4	12.0	12.2	10.7	10.1	10.4	9.7	9.2	9.4	9.4	9.0	9.2
4	12.4	11.9	12.1	10.6	10.2	10.4	9.5	9.2	9.3	9.4	9.0	9.2
5	12.4	11.9	12.1	11.1	10.5	10.7	9.3	9.0	9.1	9.3	8.8	9.1
6	12.4	12.0	12.2	11.1	10.5	10.8	9.3	8.8	9.0	9.4	9.0	9.1
7	12.2	11.8	12.0	11.0	10.7	10.8	9.3	8.8	9.0	9.5	9.0	9.2
8	12.5	11.8	12.0	11.1	10.7	10.9	9.2	8.7	9.0	9.6	9.2	9.4
9	12.5	11.9	12.1	11.0	10.6	10.8	9.0	8.5	8.8	9.6	9.3	9.4
10	12.1	11.4	11.7	10.9	10.3	10.5	8.8	8.4	8.5	9.6	9.3	9.4
11	11.5	10.8	11.1	10.6	10.0	10.3	8.9	8.5	8.6	9.4	9.0	9.2
12	11.1	10.5	10.8	10.8	10.3	10.5	9.1	8.6	8.8	9.3	8.9	9.1
13	11.1	10.3	10.6	10.8	10.4	10.6	9.1	8.6	8.8	9.3	8.9	9.1
14	11.3	10.8	11.0	10.7	10.0	10.3	9.0	8.5	8.7	9.3	8.7	8.9
15	11.6	11.0	11.2	10.4	9.8	10.1	8.9	8.5	8.7	8.9	8.6	8.8
16	11.6	11.0	11.3	10.3	9.7	10.0	8.7	8.2	8.4	8.9	8.6	8.8
17	11.4	11.0	11.2	10.2	9.6	9.9	8.6	8.2	8.4	9.1	8.7	8.8
18	11.4	10.8	11.1	10.3	9.8	10.0	8.7	7.8	8.2	8.9	8.3	8.6
19	11.3	10.7	11.0	10.3	9.8	10.1	9.1	8.6	8.8	8.6	8.1	8.3
20	11.3	10.7	11.0	10.3	9.6	9.9	9.3	8.8	9.0	8.4	8.0	8.1
21	11.2	10.7	10.9	10.0	9.5	9.7	9.3	9.1	9.2	8.5	7.9	8.1
22	11.6	10.9	11.1	9.9	9.5	9.6	9.6	9.1	9.3	8.8	8.2	8.4
23	11.6	10.7	11.2	9.9	9.3	9.7	9.4	9.1	9.2	8.7	8.3	8.4
24	11.3	10.7	11.0	9.8	9.2	9.5	9.2	8.8	9.0	8.4	7.8	8.0
25	11.1	10.4	10.7	9.5	9.0	9.2	9.3	8.8	9.0	8.2	7.7	7.9
26	10.8	10.1	10.5	9.1	8.5	8.8	9.2	8.7	8.9	8.4	7.9	8.1
27	10.7	10.2	10.4	9.0	8.1	8.5	9.2	8.7	8.9	8.6	8.2	8.3
28	11.0	10.5	10.6	8.6	7.9	8.2	9.6	9.0	9.2	8.5	8.2	8.3
29	11.3	10.7	10.9	8.6	8.2	8.4	9.8	9.4	9.7	8.6	8.2	8.4
30	11.3	10.7	11.0	9.1	8.4	8.6	10.1	9.7	9.8	8.5	8.1	8.2
31	11.1	10.8	10.9	---	---	---	10.0	9.7	9.8	8.2	7.5	7.8
MONTH	12.9	10.1	11.3	11.1	7.9	9.9	10.1	7.8	9.0	10.0	7.5	8.7

COLORADO RIVER MAIN STEM
09402500 COLORADO RIVER NEAR GRAND CANYON , AZ—CONTINUED

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	8.0	7.4	7.6	8.8	8.3	8.5	11.4	10.9	11.1	11.9	11.2	11.4
2	8.0	7.5	7.6	8.6	7.5	7.9	11.3	10.8	11.0	11.7	10.9	11.2
3	8.2	7.5	7.7	8.1	7.4	7.7	11.4	10.8	11.0	11.6	10.7	11.1
4	8.2	7.5	7.9	8.1	7.3	7.7	11.4	10.8	11.1	11.7	11.0	11.3
5	8.2	7.5	7.8	8.6	7.8	8.0	11.4	10.9	11.1	12.0	11.2	11.5
6	8.2	7.6	7.9	9.0	8.2	8.4	11.3	10.6	10.8	12.3	11.4	11.8
7	8.2	7.6	7.9	9.2	8.7	8.8	11.3	10.4	10.7	12.3	11.8	12.0
8	8.3	7.7	7.9	9.3	8.8	9.0	11.3	10.8	11.0	12.2	11.5	11.9
9	8.3	7.6	7.9	9.3	8.6	8.9	11.5	10.7	11.0	12.1	11.4	11.7
10	8.1	7.3	7.7	9.2	8.6	8.8	11.4	10.9	11.2	12.0	11.4	11.7
11	8.2	7.4	7.8	9.5	8.6	8.8	11.5	11.0	11.2	12.1	11.4	11.7
12	8.3	7.6	7.9	9.6	9.0	9.3	11.5	10.8	11.1	12.2	11.4	11.7
13	8.3	7.8	8.0	10.2	9.3	9.6	11.9	10.8	11.2	12.4	11.7	12.0
14	8.6	8.0	8.2	10.1	9.1	9.5	11.8	11.3	11.5	12.6	12.0	12.2
15	8.6	8.0	8.3	9.5	8.7	9.0	11.6	11.3	11.4	12.6	12.0	12.3
16	8.7	8.1	8.4	9.2	8.3	8.6	11.5	10.8	11.1	12.7	11.9	12.2
17	8.7	8.3	8.5	9.0	8.1	8.4	11.3	10.8	11.0	12.7	12.0	12.4
18	8.5	8.2	8.3	9.1	8.5	8.7	11.2	10.5	10.8	13.0	12.1	12.5
19	8.6	8.1	8.3	9.6	8.7	9.0	11.1	10.4	10.7	12.9	12.2	12.5
20	8.9	8.2	8.5	10.0	9.3	9.5	11.0	10.1	10.4	12.9	12.2	12.5
21	9.1	8.5	8.7	10.1	9.5	9.8	11.0	10.0	10.4	12.8	11.9	12.2
22	9.2	8.5	8.8	10.5	9.8	10.0	11.1	10.4	10.7	12.2	11.5	11.8
23	9.1	8.5	8.8	10.5	9.8	10.1	11.2	10.6	10.8	12.1	11.4	11.6
24	9.3	8.4	8.7	10.0	9.6	9.7	11.6	10.7	11.1	12.1	11.0	11.5
25	9.3	8.6	8.9	10.3	9.5	9.8	11.9	11.2	11.5	12.5	11.6	12.0
26	9.2	8.5	8.8	10.3	9.7	9.9	12.0	11.4	11.7	12.5	11.9	12.3
27	8.9	8.2	8.6	10.7	9.9	10.1	11.8	11.0	11.4	13.3	12.0	12.6
28	8.9	8.1	8.4	10.7	10.1	10.4	11.7	10.8	11.2	13.6	12.5	13.1
29	---	---	---	10.9	10.2	10.5	11.8	11.1	11.4	13.8	12.6	13.2
30	---	---	---	11.1	10.5	10.7	12.0	11.2	11.5	14.2	13.0	13.6
31	---	---	---	11.3	10.7	10.9	---	---	---	14.2	13.2	13.8
MONTH	9.3	7.3	8.2	11.3	7.3	9.2	12.0	10.0	11.1	14.2	10.7	12.1

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	14.1	13.2	13.7	13.2	12.2	12.6	12.7	11.9	12.4	12.3	11.8	12.0
2	14.1	13.0	13.4	13.0	12.2	12.6	12.1	11.6	12.0	12.4	11.7	11.9
3	13.0	12.2	12.5	12.4	11.8	12.1	12.0	11.6	11.8	13.0	12.1	12.4
4	12.3	11.5	11.9	12.2	11.7	11.9	12.1	11.9	12.0	13.5	13.0	13.2
5	12.3	11.5	11.9	---	---	e12.0	12.6	11.9	12.3	13.3	12.7	12.9
6	12.7	11.7	12.1	12.8	12.1	12.4	12.2	11.9	12.0	13.0	12.7	12.8
7	13.0	11.9	12.4	12.5	12.2	12.3	12.0	11.7	11.8	13.4	12.6	12.8
8	13.2	12.2	12.6	13.1	12.1	12.6	11.9	11.4	11.7	14.2	12.0	13.2
9	13.4	12.3	12.8	13.2	12.5	12.9	12.2	11.8	12.0	14.6	13.6	14.2
10	13.3	12.5	12.9	13.0	12.6	12.8	12.1	11.8	12.0	14.4	13.0	13.5
11	13.0	12.3	12.6	13.0	12.5	12.8	12.3	11.9	12.1	15.9	12.8	14.4
12	12.8	11.8	12.2	12.7	12.3	12.4	12.6	11.9	12.2	15.5	14.5	15.0
13	12.8	11.8	12.2	12.6	12.3	12.4	12.6	12.0	12.3	14.5	13.7	13.9
14	13.0	11.8	12.4	12.8	12.4	12.6	12.5	12.1	12.3	13.9	13.5	13.7
15	13.1	12.1	12.5	13.2	12.2	12.7	12.4	12.0	12.2	14.4	13.6	13.8
16	13.1	12.1	12.6	12.9	12.3	12.5	12.6	11.9	12.3	15.3	14.2	14.6
17	13.3	12.2	12.7	12.4	12.0	12.2	12.6	12.1	12.4	15.2	14.4	14.7
18	13.1	12.3	12.7	12.4	12.1	12.2	12.6	12.0	12.4	14.4	13.2	13.9
19	13.1	12.2	12.6	12.2	11.5	11.9	12.7	12.2	12.4	13.2	12.6	12.9
20	13.1	12.2	12.6	12.4	11.5	11.9	12.4	11.6	12.2	12.7	12.3	12.4
21	13.1	12.3	12.6	12.4	12.0	12.2	12.8	11.4	11.8	12.4	12.0	12.2
22	13.1	12.2	12.6	12.6	12.1	12.3	12.3	11.7	11.9	12.6	12.0	12.2
23	13.0	12.3	12.6	13.1	12.4	12.7	12.3	11.9	12.2	13.1	12.3	12.5
24	13.3	12.2	12.7	13.0	12.4	12.7	12.1	11.6	11.8	13.1	12.6	12.8
25	13.1	12.4	12.7	12.9	12.3	12.6	12.0	11.6	11.8	12.9	12.5	12.7
26	12.9	12.2	12.5	12.9	12.4	12.7	12.3	11.5	11.9	12.6	12.4	12.5
27	13.1	12.3	12.6	12.8	12.4	12.7	12.1	11.7	11.9	12.4	12.2	12.4
28	12.9	12.2	12.5	12.8	12.2	12.6	12.0	11.7	11.9	12.4	12.0	12.1
29	13.0	12.2	12.6	12.8	12.3	12.5	12.0	11.7	11.9	12.3	11.9	12.0
30	13.1	12.2	12.7	12.7	12.3	12.5	12.3	11.6	11.9	12.3	11.8	12.0
31	---	---	---	12.7	12.3	12.5	12.2	11.8	12.0	---	---	---
MONTH	14.1	11.5	12.6	---	---	12.4	12.8	11.4	12.1	15.9	11.7	13.1

e Estimated

COLORADO RIVER MAIN STEM

09402500 COLORADO RIVER NEAR GRAND CANYON , AZ—CONTINUED

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN																																																																																																																																																																																																																																																																																																																																																																																																																			
													OCTOBER			NOVEMBER			DECEMBER			JANUARY																																																																																																																																																																																																																																																																																																																																																																																																									
													1	894	844	866	857	816	830	837	811	820	819	786	799	2	880	822	851	859	812	829	836	798	813	818	785	808	3	854	815	829	851	812	826	846	799	826	827	799	809	4	855	815	831	849	815	830	841	796	816	826	796	811	5	855	816	830	859	816	835	819	793	802	---	---	e798	6	859	811	833	849	808	824	814	793	799	817	795	806	7	861	821	835	849	808	820	822	788	801	823	803	812	8	874	822	849	851	811	824	808	787	795	814	787	797	9	901	823	858	851	816	827	816	787	801	811	787	796	10	878	812	831	856	817	829	842	783	825	816	791	800	11	845	813	825	861	819	832	835	796	816	816	792	800	12	849	815	828	858	820	836	826	796	807	814	786	796	13	857	813	829	846	807	822	823	787	801	813	786	801	14	852	816	828	841	806	817	816	783	797	826	795	808	15	871	826	848	846	808	820	813	785	796	825	792	804	16	878	816	851	850	810	823	813	785	800	816	792	800	17	849	816	826	859	812	828	836	797	822	815	776	797	18	859	817	832	848	809	822	844	791	817	824	794	806	19	854	810	827	854	811	831	814	791	801	818	791	800	20	850	810	824	842	810	822	815	787	798	819	791	808	21	855	813	827	843	810	821	810	787	796	835	806	821	22	871	819	847	850	813	824	815	785	797	823	785	799	23	875	821	848	853	814	830	819	789	802	825	791	801	24	858	820	831	847	806	824	834	791	818	823	796	806	25	855	819	832	841	806	819	823	785	802	838	800	823	26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816
2	880	822	851	859	812	829	836	798	813	818	785	808	3	854	815	829	851	812	826	846	799	826	827	799	809	4	855	815	831	849	815	830	841	796	816	826	796	811	5	855	816	830	859	816	835	819	793	802	---	---	e798	6	859	811	833	849	808	824	814	793	799	817	795	806	7	861	821	835	849	808	820	822	788	801	823	803	812	8	874	822	849	851	811	824	808	787	795	814	787	797	9	901	823	858	851	816	827	816	787	801	811	787	796	10	878	812	831	856	817	829	842	783	825	816	791	800	11	845	813	825	861	819	832	835	796	816	816	792	800	12	849	815	828	858	820	836	826	796	807	814	786	796	13	857	813	829	846	807	822	823	787	801	813	786	801	14	852	816	828	841	806	817	816	783	797	826	795	808	15	871	826	848	846	808	820	813	785	796	825	792	804	16	878	816	851	850	810	823	813	785	800	816	792	800	17	849	816	826	859	812	828	836	797	822	815	776	797	18	859	817	832	848	809	822	844	791	817	824	794	806	19	854	810	827	854	811	831	814	791	801	818	791	800	20	850	810	824	842	810	822	815	787	798	819	791	808	21	855	813	827	843	810	821	810	787	796	835	806	821	22	871	819	847	850	813	824	815	785	797	823	785	799	23	875	821	848	853	814	830	819	789	802	825	791	801	24	858	820	831	847	806	824	834	791	818	823	796	806	25	855	819	832	841	806	819	823	785	802	838	800	823	26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805													
3	854	815	829	851	812	826	846	799	826	827	799	809	4	855	815	831	849	815	830	841	796	816	826	796	811	5	855	816	830	859	816	835	819	793	802	---	---	e798	6	859	811	833	849	808	824	814	793	799	817	795	806	7	861	821	835	849	808	820	822	788	801	823	803	812	8	874	822	849	851	811	824	808	787	795	814	787	797	9	901	823	858	851	816	827	816	787	801	811	787	796	10	878	812	831	856	817	829	842	783	825	816	791	800	11	845	813	825	861	819	832	835	796	816	816	792	800	12	849	815	828	858	820	836	826	796	807	814	786	796	13	857	813	829	846	807	822	823	787	801	813	786	801	14	852	816	828	841	806	817	816	783	797	826	795	808	15	871	826	848	846	808	820	813	785	796	825	792	804	16	878	816	851	850	810	823	813	785	800	816	792	800	17	849	816	826	859	812	828	836	797	822	815	776	797	18	859	817	832	848	809	822	844	791	817	824	794	806	19	854	810	827	854	811	831	814	791	801	818	791	800	20	850	810	824	842	810	822	815	787	798	819	791	808	21	855	813	827	843	810	821	810	787	796	835	806	821	22	871	819	847	850	813	824	815	785	797	823	785	799	23	875	821	848	853	814	830	819	789	802	825	791	801	24	858	820	831	847	806	824	834	791	818	823	796	806	25	855	819	832	841	806	819	823	785	802	838	800	823	26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																										
4	855	815	831	849	815	830	841	796	816	826	796	811	5	855	816	830	859	816	835	819	793	802	---	---	e798	6	859	811	833	849	808	824	814	793	799	817	795	806	7	861	821	835	849	808	820	822	788	801	823	803	812	8	874	822	849	851	811	824	808	787	795	814	787	797	9	901	823	858	851	816	827	816	787	801	811	787	796	10	878	812	831	856	817	829	842	783	825	816	791	800	11	845	813	825	861	819	832	835	796	816	816	792	800	12	849	815	828	858	820	836	826	796	807	814	786	796	13	857	813	829	846	807	822	823	787	801	813	786	801	14	852	816	828	841	806	817	816	783	797	826	795	808	15	871	826	848	846	808	820	813	785	796	825	792	804	16	878	816	851	850	810	823	813	785	800	816	792	800	17	849	816	826	859	812	828	836	797	822	815	776	797	18	859	817	832	848	809	822	844	791	817	824	794	806	19	854	810	827	854	811	831	814	791	801	818	791	800	20	850	810	824	842	810	822	815	787	798	819	791	808	21	855	813	827	843	810	821	810	787	796	835	806	821	22	871	819	847	850	813	824	815	785	797	823	785	799	23	875	821	848	853	814	830	819	789	802	825	791	801	24	858	820	831	847	806	824	834	791	818	823	796	806	25	855	819	832	841	806	819	823	785	802	838	800	823	26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																							
5	855	816	830	859	816	835	819	793	802	---	---	e798	6	859	811	833	849	808	824	814	793	799	817	795	806	7	861	821	835	849	808	820	822	788	801	823	803	812	8	874	822	849	851	811	824	808	787	795	814	787	797	9	901	823	858	851	816	827	816	787	801	811	787	796	10	878	812	831	856	817	829	842	783	825	816	791	800	11	845	813	825	861	819	832	835	796	816	816	792	800	12	849	815	828	858	820	836	826	796	807	814	786	796	13	857	813	829	846	807	822	823	787	801	813	786	801	14	852	816	828	841	806	817	816	783	797	826	795	808	15	871	826	848	846	808	820	813	785	796	825	792	804	16	878	816	851	850	810	823	813	785	800	816	792	800	17	849	816	826	859	812	828	836	797	822	815	776	797	18	859	817	832	848	809	822	844	791	817	824	794	806	19	854	810	827	854	811	831	814	791	801	818	791	800	20	850	810	824	842	810	822	815	787	798	819	791	808	21	855	813	827	843	810	821	810	787	796	835	806	821	22	871	819	847	850	813	824	815	785	797	823	785	799	23	875	821	848	853	814	830	819	789	802	825	791	801	24	858	820	831	847	806	824	834	791	818	823	796	806	25	855	819	832	841	806	819	823	785	802	838	800	823	26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																				
6	859	811	833	849	808	824	814	793	799	817	795	806	7	861	821	835	849	808	820	822	788	801	823	803	812	8	874	822	849	851	811	824	808	787	795	814	787	797	9	901	823	858	851	816	827	816	787	801	811	787	796	10	878	812	831	856	817	829	842	783	825	816	791	800	11	845	813	825	861	819	832	835	796	816	816	792	800	12	849	815	828	858	820	836	826	796	807	814	786	796	13	857	813	829	846	807	822	823	787	801	813	786	801	14	852	816	828	841	806	817	816	783	797	826	795	808	15	871	826	848	846	808	820	813	785	796	825	792	804	16	878	816	851	850	810	823	813	785	800	816	792	800	17	849	816	826	859	812	828	836	797	822	815	776	797	18	859	817	832	848	809	822	844	791	817	824	794	806	19	854	810	827	854	811	831	814	791	801	818	791	800	20	850	810	824	842	810	822	815	787	798	819	791	808	21	855	813	827	843	810	821	810	787	796	835	806	821	22	871	819	847	850	813	824	815	785	797	823	785	799	23	875	821	848	853	814	830	819	789	802	825	791	801	24	858	820	831	847	806	824	834	791	818	823	796	806	25	855	819	832	841	806	819	823	785	802	838	800	823	26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																																	
7	861	821	835	849	808	820	822	788	801	823	803	812	8	874	822	849	851	811	824	808	787	795	814	787	797	9	901	823	858	851	816	827	816	787	801	811	787	796	10	878	812	831	856	817	829	842	783	825	816	791	800	11	845	813	825	861	819	832	835	796	816	816	792	800	12	849	815	828	858	820	836	826	796	807	814	786	796	13	857	813	829	846	807	822	823	787	801	813	786	801	14	852	816	828	841	806	817	816	783	797	826	795	808	15	871	826	848	846	808	820	813	785	796	825	792	804	16	878	816	851	850	810	823	813	785	800	816	792	800	17	849	816	826	859	812	828	836	797	822	815	776	797	18	859	817	832	848	809	822	844	791	817	824	794	806	19	854	810	827	854	811	831	814	791	801	818	791	800	20	850	810	824	842	810	822	815	787	798	819	791	808	21	855	813	827	843	810	821	810	787	796	835	806	821	22	871	819	847	850	813	824	815	785	797	823	785	799	23	875	821	848	853	814	830	819	789	802	825	791	801	24	858	820	831	847	806	824	834	791	818	823	796	806	25	855	819	832	841	806	819	823	785	802	838	800	823	26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																																														
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16	878	816	851	850	810	823	813	785	800	816	792	800	17	849	816	826	859	812	828	836	797	822	815	776	797	18	859	817	832	848	809	822	844	791	817	824	794	806	19	854	810	827	854	811	831	814	791	801	818	791	800	20	850	810	824	842	810	822	815	787	798	819	791	808	21	855	813	827	843	810	821	810	787	796	835	806	821	22	871	819	847	850	813	824	815	785	797	823	785	799	23	875	821	848	853	814	830	819	789	802	825	791	801	24	858	820	831	847	806	824	834	791	818	823	796	806	25	855	819	832	841	806	819	823	785	802	838	800	823	26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																																																																																																																																																																			
17	849	816	826	859	812	828	836	797	822	815	776	797	18	859	817	832	848	809	822	844	791	817	824	794	806	19	854	810	827	854	811	831	814	791	801	818	791	800	20	850	810	824	842	810	822	815	787	798	819	791	808	21	855	813	827	843	810	821	810	787	796	835	806	821	22	871	819	847	850	813	824	815	785	797	823	785	799	23	875	821	848	853	814	830	819	789	802	825	791	801	24	858	820	831	847	806	824	834	791	818	823	796	806	25	855	819	832	841	806	819	823	785	802	838	800	823	26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																																																																																																																																																																																
18	859	817	832	848	809	822	844	791	817	824	794	806	19	854	810	827	854	811	831	814	791	801	818	791	800	20	850	810	824	842	810	822	815	787	798	819	791	808	21	855	813	827	843	810	821	810	787	796	835	806	821	22	871	819	847	850	813	824	815	785	797	823	785	799	23	875	821	848	853	814	830	819	789	802	825	791	801	24	858	820	831	847	806	824	834	791	818	823	796	806	25	855	819	832	841	806	819	823	785	802	838	800	823	26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																																																																																																																																																																																													
19	854	810	827	854	811	831	814	791	801	818	791	800	20	850	810	824	842	810	822	815	787	798	819	791	808	21	855	813	827	843	810	821	810	787	796	835	806	821	22	871	819	847	850	813	824	815	785	797	823	785	799	23	875	821	848	853	814	830	819	789	802	825	791	801	24	858	820	831	847	806	824	834	791	818	823	796	806	25	855	819	832	841	806	819	823	785	802	838	800	823	26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																																																																																																																																																																																																										
20	850	810	824	842	810	822	815	787	798	819	791	808	21	855	813	827	843	810	821	810	787	796	835	806	821	22	871	819	847	850	813	824	815	785	797	823	785	799	23	875	821	848	853	814	830	819	789	802	825	791	801	24	858	820	831	847	806	824	834	791	818	823	796	806	25	855	819	832	841	806	819	823	785	802	838	800	823	26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																																																																																																																																																																																																																							
21	855	813	827	843	810	821	810	787	796	835	806	821	22	871	819	847	850	813	824	815	785	797	823	785	799	23	875	821	848	853	814	830	819	789	802	825	791	801	24	858	820	831	847	806	824	834	791	818	823	796	806	25	855	819	832	841	806	819	823	785	802	838	800	823	26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																																																																																																																																																																																																																																				
22	871	819	847	850	813	824	815	785	797	823	785	799	23	875	821	848	853	814	830	819	789	802	825	791	801	24	858	820	831	847	806	824	834	791	818	823	796	806	25	855	819	832	841	806	819	823	785	802	838	800	823	26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																																																																																																																																																																																																																																																	
23	875	821	848	853	814	830	819	789	802	825	791	801	24	858	820	831	847	806	824	834	791	818	823	796	806	25	855	819	832	841	806	819	823	785	802	838	800	823	26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																																																																																																																																																																																																																																																														
24	858	820	831	847	806	824	834	791	818	823	796	806	25	855	819	832	841	806	819	823	785	802	838	800	823	26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																																																																																																																																																																																																																																																																											
25	855	819	832	841	806	819	823	785	802	838	800	823	26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																																																																																																																																																																																																																																																																																								
26	863	816	833	848	813	830	823	784	810	827	797	811	27	858	816	830	844	811	827	826	796	808	824	797	811	28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																																																																																																																																																																																																																																																																																																					
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28	851	807	825	840	809	819	---	---	e801	836	807	818	29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																																																																																																																																																																																																																																																																																																																															
29	877	814	848	843	803	819	810	789	795	824	786	801	30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																																																																																																																																																																																																																																																																																																																																												
30	880	829	854	837	808	817	816	789	802	810	787	794	31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																																																																																																																																																																																																																																																																																																																																																									
31	861	815	833	---	---	---	822	793	811	832	793	816	MONTH	901	807	837	861	803	825	---	---	806	---	---	805																																																																																																																																																																																																																																																																																																																																																																																																						
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e Estimated

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN																																																																																																																																																																																																																																																																																																																																																																																																																			
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													1	830	799	816	860	829	842	926	897	909	941	925	931	2	851	803	833	853	832	844	921	885	904	949	919	938	3	858	833	845	891	844	863	914	883	900	935	908	921	4	855	829	841	916	891	904	924	896	906	931	902	913	5	843	802	824	898	839	870	923	895	905	960	912	938	6	829	801	810	870	835	849	926	897	908	954	933	945	7	825	801	811	875	853	862	926	906	916	933	893	917	8	828	806	814	870	849	857	940	916	926	920	892	909	9	828	807	814	866	846	854	928	902	915	932	915	922	10	834	809	822	914	865	891	928	901	915	943	918	928	11	847	820	831	948	904	924	937	882	904	937	908	919	12	832	800	815	930	884	898	959	931	944	959	923	945	13	821	800	807	904	863	886	940	910	926	954	921	937	14	827	802	810	900	878	886	927	909	918	939	909	921	15	834	806	815	891	867	877	951	922	936	935	895	916	16	834	808	816	938	865	899	937	907	924	939	901	926	17	837	808	823	942	912	931	914	897	903	913	889	900	18	847	819	830	943	891	923	955	898	930	911	886	899	19	831	805	815	914	891	901	948	910	927	928	902	912	20	829	805	812	918	893	905	985	911	958	933	902	914	21	843	809	825	924	895	905	975	927	954	926	905	912	22	839	816	824	918	879	894	943	910	924	927	903	912	23	837	815	826	916	887	894	975	938	956	927	904	912	24	840	821	829	916	882	895	944	922	935	928	886	911	25	849	825	836	920	891	902	945	914	927	972	885	934	26	855	825	837	936	891	914	932	912	920	963	942	948	27	864	837	846	932	908	918	921	908	914	945	915	928	28	869	830	847	925	896	908	954	920	938	941	915	929	29	---	---	---	929	897	909	955	918	934	937	925	928	30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930
2	851	803	833	853	832	844	921	885	904	949	919	938	3	858	833	845	891	844	863	914	883	900	935	908	921	4	855	829	841	916	891	904	924	896	906	931	902	913	5	843	802	824	898	839	870	923	895	905	960	912	938	6	829	801	810	870	835	849	926	897	908	954	933	945	7	825	801	811	875	853	862	926	906	916	933	893	917	8	828	806	814	870	849	857	940	916	926	920	892	909	9	828	807	814	866	846	854	928	902	915	932	915	922	10	834	809	822	914	865	891	928	901	915	943	918	928	11	847	820	831	948	904	924	937	882	904	937	908	919	12	832	800	815	930	884	898	959	931	944	959	923	945	13	821	800	807	904	863	886	940	910	926	954	921	937	14	827	802	810	900	878	886	927	909	918	939	909	921	15	834	806	815	891	867	877	951	922	936	935	895	916	16	834	808	816	938	865	899	937	907	924	939	901	926	17	837	808	823	942	912	931	914	897	903	913	889	900	18	847	819	830	943	891	923	955	898	930	911	886	899	19	831	805	815	914	891	901	948	910	927	928	902	912	20	829	805	812	918	893	905	985	911	958	933	902	914	21	843	809	825	924	895	905	975	927	954	926	905	912	22	839	816	824	918	879	894	943	910	924	927	903	912	23	837	815	826	916	887	894	975	938	956	927	904	912	24	840	821	829	916	882	895	944	922	935	928	886	911	25	849	825	836	920	891	902	945	914	927	972	885	934	26	855	825	837	936	891	914	932	912	920	963	942	948	27	864	837	846	932	908	918	921	908	914	945	915	928	28	869	830	847	925	896	908	954	920	938	941	915	929	29	---	---	---	929	897	909	955	918	934	937	925	928	30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930	MONTH	869	799	824	948	829	892	985	882	924	972	885	923													
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15	834	806	815	891	867	877	951	922	936	935	895	916	16	834	808	816	938	865	899	937	907	924	939	901	926	17	837	808	823	942	912	931	914	897	903	913	889	900	18	847	819	830	943	891	923	955	898	930	911	886	899	19	831	805	815	914	891	901	948	910	927	928	902	912	20	829	805	812	918	893	905	985	911	958	933	902	914	21	843	809	825	924	895	905	975	927	954	926	905	912	22	839	816	824	918	879	894	943	910	924	927	903	912	23	837	815	826	916	887	894	975	938	956	927	904	912	24	840	821	829	916	882	895	944	922	935	928	886	911	25	849	825	836	920	891	902	945	914	927	972	885	934	26	855	825	837	936	891	914	932	912	920	963	942	948	27	864	837	846	932	908	918	921	908	914	945	915	928	28	869	830	847	925	896	908	954	920	938	941	915	929	29	---	---	---	929	897	909	955	918	934	937	925	928	30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930	MONTH	869	799	824	948	829	892	985	882	924	972	885	923																																																																																																																																																																																						
16	834	808	816	938	865	899	937	907	924	939	901	926	17	837	808	823	942	912	931	914	897	903	913	889	900	18	847	819	830	943	891	923	955	898	930	911	886	899	19	831	805	815	914	891	901	948	910	927	928	902	912	20	829	805	812	918	893	905	985	911	958	933	902	914	21	843	809	825	924	895	905	975	927	954	926	905	912	22	839	816	824	918	879	894	943	910	924	927	903	912	23	837	815	826	916	887	894	975	938	956	927	904	912	24	840	821	829	916	882	895	944	922	935	928	886	911	25	849	825	836	920	891	902	945	914	927	972	885	934	26	855	825	837	936	891	914	932	912	920	963	942	948	27	864	837	846	932	908	918	921	908	914	945	915	928	28	869	830	847	925	896	908	954	920	938	941	915	929	29	---	---	---	929	897	909	955	918	934	937	925	928	30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930	MONTH	869	799	824	948	829	892	985	882	924	972	885	923																																																																																																																																																																																																			
17	837	808	823	942	912	931	914	897	903	913	889	900	18	847	819	830	943	891	923	955	898	930	911	886	899	19	831	805	815	914	891	901	948	910	927	928	902	912	20	829	805	812	918	893	905	985	911	958	933	902	914	21	843	809	825	924	895	905	975	927	954	926	905	912	22	839	816	824	918	879	894	943	910	924	927	903	912	23	837	815	826	916	887	894	975	938	956	927	904	912	24	840	821	829	916	882	895	944	922	935	928	886	911	25	849	825	836	920	891	902	945	914	927	972	885	934	26	855	825	837	936	891	914	932	912	920	963	942	948	27	864	837	846	932	908	918	921	908	914	945	915	928	28	869	830	847	925	896	908	954	920	938	941	915	929	29	---	---	---	929	897	909	955	918	934	937	925	928	30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930	MONTH	869	799	824	948	829	892	985	882	924	972	885	923																																																																																																																																																																																																																
18	847	819	830	943	891	923	955	898	930	911	886	899	19	831	805	815	914	891	901	948	910	927	928	902	912	20	829	805	812	918	893	905	985	911	958	933	902	914	21	843	809	825	924	895	905	975	927	954	926	905	912	22	839	816	824	918	879	894	943	910	924	927	903	912	23	837	815	826	916	887	894	975	938	956	927	904	912	24	840	821	829	916	882	895	944	922	935	928	886	911	25	849	825	836	920	891	902	945	914	927	972	885	934	26	855	825	837	936	891	914	932	912	920	963	942	948	27	864	837	846	932	908	918	921	908	914	945	915	928	28	869	830	847	925	896	908	954	920	938	941	915	929	29	---	---	---	929	897	909	955	918	934	937	925	928	30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930	MONTH	869	799	824	948	829	892	985	882	924	972	885	923																																																																																																																																																																																																																													
19	831	805	815	914	891	901	948	910	927	928	902	912	20	829	805	812	918	893	905	985	911	958	933	902	914	21	843	809	825	924	895	905	975	927	954	926	905	912	22	839	816	824	918	879	894	943	910	924	927	903	912	23	837	815	826	916	887	894	975	938	956	927	904	912	24	840	821	829	916	882	895	944	922	935	928	886	911	25	849	825	836	920	891	902	945	914	927	972	885	934	26	855	825	837	936	891	914	932	912	920	963	942	948	27	864	837	846	932	908	918	921	908	914	945	915	928	28	869	830	847	925	896	908	954	920	938	941	915	929	29	---	---	---	929	897	909	955	918	934	937	925	928	30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930	MONTH	869	799	824	948	829	892	985	882	924	972	885	923																																																																																																																																																																																																																																										
20	829	805	812	918	893	905	985	911	958	933	902	914	21	843	809	825	924	895	905	975	927	954	926	905	912	22	839	816	824	918	879	894	943	910	924	927	903	912	23	837	815	826	916	887	894	975	938	956	927	904	912	24	840	821	829	916	882	895	944	922	935	928	886	911	25	849	825	836	920	891	902	945	914	927	972	885	934	26	855	825	837	936	891	914	932	912	920	963	942	948	27	864	837	846	932	908	918	921	908	914	945	915	928	28	869	830	847	925	896	908	954	920	938	941	915	929	29	---	---	---	929	897	909	955	918	934	937	925	928	30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930	MONTH	869	799	824	948	829	892	985	882	924	972	885	923																																																																																																																																																																																																																																																							
21	843	809	825	924	895	905	975	927	954	926	905	912	22	839	816	824	918	879	894	943	910	924	927	903	912	23	837	815	826	916	887	894	975	938	956	927	904	912	24	840	821	829	916	882	895	944	922	935	928	886	911	25	849	825	836	920	891	902	945	914	927	972	885	934	26	855	825	837	936	891	914	932	912	920	963	942	948	27	864	837	846	932	908	918	921	908	914	945	915	928	28	869	830	847	925	896	908	954	920	938	941	915	929	29	---	---	---	929	897	909	955	918	934	937	925	928	30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930	MONTH	869	799	824	948	829	892	985	882	924	972	885	923																																																																																																																																																																																																																																																																				
22	839	816	824	918	879	894	943	910	924	927	903	912	23	837	815	826	916	887	894	975	938	956	927	904	912	24	840	821	829	916	882	895	944	922	935	928	886	911	25	849	825	836	920	891	902	945	914	927	972	885	934	26	855	825	837	936	891	914	932	912	920	963	942	948	27	864	837	846	932	908	918	921	908	914	945	915	928	28	869	830	847	925	896	908	954	920	938	941	915	929	29	---	---	---	929	897	909	955	918	934	937	925	928	30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930	MONTH	869	799	824	948	829	892	985	882	924	972	885	923																																																																																																																																																																																																																																																																																	
23	837	815	826	916	887	894	975	938	956	927	904	912	24	840	821	829	916	882	895	944	922	935	928	886	911	25	849	825	836	920	891	902	945	914	927	972	885	934	26	855	825	837	936	891	914	932	912	920	963	942	948	27	864	837	846	932	908	918	921	908	914	945	915	928	28	869	830	847	925	896	908	954	920	938	941	915	929	29	---	---	---	929	897	909	955	918	934	937	925	928	30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930	MONTH	869	799	824	948	829	892	985	882	924	972	885	923																																																																																																																																																																																																																																																																																														
24	840	821	829	916	882	895	944	922	935	928	886	911	25	849	825	836	920	891	902	945	914	927	972	885	934	26	855	825	837	936	891	914	932	912	920	963	942	948	27	864	837	846	932	908	918	921	908	914	945	915	928	28	869	830	847	925	896	908	954	920	938	941	915	929	29	---	---	---	929	897	909	955	918	934	937	925	928	30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930	MONTH	869	799	824	948	829	892	985	882	924	972	885	923																																																																																																																																																																																																																																																																																																											
25	849	825	836	920	891	902	945	914	927	972	885	934	26	855	825	837	936	891	914	932	912	920	963	942	948	27	864	837	846	932	908	918	921	908	914	945	915	928	28	869	830	847	925	896	908	954	920	938	941	915	929	29	---	---	---	929	897	909	955	918	934	937	925	928	30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930	MONTH	869	799	824	948	829	892	985	882	924	972	885	923																																																																																																																																																																																																																																																																																																																								
26	855	825	837	936	891	914	932	912	920	963	942	948	27	864	837	846	932	908	918	921	908	914	945	915	928	28	869	830	847	925	896	908	954	920	938	941	915	929	29	---	---	---	929	897	909	955	918	934	937	925	928	30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930	MONTH	869	799	824	948	829	892	985	882	924	972	885	923																																																																																																																																																																																																																																																																																																																																					
27	864	837	846	932	908	918	921	908	914	945	915	928	28	869	830	847	925	896	908	954	920	938	941	915	929	29	---	---	---	929	897	909	955	918	934	937	925	928	30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930	MONTH	869	799	824	948	829	892	985	882	924	972	885	923																																																																																																																																																																																																																																																																																																																																																		
28	869	830	847	925	896	908	954	920	938	941	915	929	29	---	---	---	929	897	909	955	918	934	937	925	928	30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930	MONTH	869	799	824	948	829	892	985	882	924	972	885	923																																																																																																																																																																																																																																																																																																																																																															
29	---	---	---	929	897	909	955	918	934	937	925	928	30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930	MONTH	869	799	824	948	829	892	985	882	924	972	885	923																																																																																																																																																																																																																																																																																																																																																																												
30	---	---	---	938	903	916	942	921	929	928	925	926	31	---	---	---	930	906	916	---	---	---	939	925	930	MONTH	869	799	824	948	829	892	985	882	924	972	885	923																																																																																																																																																																																																																																																																																																																																																																																									
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MONTH	869	799	824	948	829	892	985	882	924	972	885	923																																																																																																																																																																																																																																																																																																																																																																																																																			

COLORADO RIVER MAIN STEM
09402500 COLORADO RIVER NEAR GRAND CANYON , AZ—CONTINUED

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	940	927	932	888	865	875	835	821	827	839	804	822
2	931	873	905	875	838	855	842	825	833	854	804	831
3	901	873	888	870	843	858	844	821	828	924	854	904
4	904	865	886	---	---	e854	840	818	828	895	864	880
5	885	858	872	---	---	e869	854	821	837	901	864	879
6	900	858	877	892	842	864	854	814	833	910	872	889
7	889	863	875	868	854	860	831	811	818	890	832	868
8	883	852	872	870	851	860	836	811	825	965	779	856
9	898	879	886	871	842	854	---	---	e826	1200	773	953
10	896	881	888	873	844	855	844	821	830	1030	916	971
11	900	884	891	863	848	853	840	824	832	1040	699	875
12	921	854	885	865	844	855	842	829	835	829	699	766
13	908	861	885	860	842	853	848	816	830	---	---	e849
14	891	852	872	863	842	853	832	814	820	---	---	e890
15	873	851	864	869	847	856	835	815	822	---	---	e896
16	889	863	881	862	838	847	832	814	819	885	860	872
17	905	887	895	872	846	854	834	813	819	863	850	857
18	900	864	884	860	838	852	826	805	816	887	852	866
19	893	861	873	853	837	848	818	804	810	912	860	880
20	893	860	875	861	839	850	827	792	806	905	866	880
21	889	860	871	857	833	845	---	---	e788	903	865	879
22	887	860	872	874	847	859	813	784	797	902	864	877
23	892	866	880	869	839	850	813	781	799	1020	861	892
24	896	870	885	856	839	844	826	795	806	1020	886	921
25	889	861	875	862	823	844	816	797	805	963	865	904
26	885	853	867	859	831	844	845	800	819	902	855	874
27	869	850	858	856	827	838	828	797	811	895	853	867
28	882	857	871	878	831	855	816	797	804	894	848	865
29	888	856	871	880	819	841	815	797	806	894	847	869
30	881	856	871	909	818	854	820	799	807	904	871	882
31	---	---	---	900	826	855	824	801	814	---	---	---
MONTH	940	850	880	---	---	853	---	---	818	---	---	877

e Estimated

PUMP HOUSE WASH SPRING BASIN

09403013 PUMP HOUSE WASH SPRING NEAR GRAND CANYON, AZ

LOCATION.--Lat 36° 04'43", long 112° 07'31", in sec. 13, T.31 N., R.2 E. (unsurveyed), Coconino County, Hydrologic Unit 15010002, on right bank at Indian Garden, 100 ft northeast of pump station and 2 mi north of Grand Canyon Village in Grand Canyon National Park.

DRAINAGE AREA.--Less than 0.05 mi².

PERIOD OF RECORD.--June 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,800 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharge. Records fair.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.09	0.09	0.09
2	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09
3	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.11	0.09	0.10	0.09	0.09
4	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.09	0.09	0.09	0.09
5	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
6	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.09	0.10
7	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10
8	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10
9	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10
10	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10
11	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10
12	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10
13	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10
14	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10
15	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.09	0.09	0.09	0.10
16	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.09	0.09	0.09	0.10
17	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.09	0.09	0.09	0.11
18	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.09	0.09	0.09	0.10
19	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.09	0.09	0.09	0.09
20	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
21	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.09
22	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.09
23	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.09
24	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.09
25	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
26	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
27	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10
28	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10
29	0.09	0.09	0.09	0.09	---	0.09	0.10	0.10	0.09	0.09	0.09	0.09
30	0.09	0.09	0.09	0.09	---	0.09	0.09	0.10	0.09	0.09	0.09	0.10
31	0.09	---	0.09	0.09	---	0.09	---	0.10	---	0.09	0.09	---
TOTAL	2.93	2.70	2.79	2.79	2.52	2.79	2.71	2.93	2.71	2.81	2.83	2.87
MEAN	0.095	0.090	0.090	0.090	0.090	0.090	0.090	0.095	0.090	0.091	0.091	0.096
MAX	0.10	0.09	0.09	0.09	0.09	0.09	0.10	0.11	0.10	0.10	0.10	0.11
MIN	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
AC-FT	5.8	5.4	5.5	5.5	5.0	5.5	5.4	5.8	5.4	5.6	5.6	5.7
CAL YR 2001	TOTAL 36.33	MEAN 0.100	MAX 0.11	MIN 0.09	AC-FT 72							
WTR YR 2002	TOTAL 33.38	MEAN 0.091	MAX 0.11	MIN 0.09	AC-FT 66							

HERMIT CREEK BASIN

09403043 HERMIT CREEK ABOVE TONTO TRAIL NEAR GRAND CANYON, AZ

LOCATION.--Lat 36° 04'51", long 112° 12'47", in sec. 7, T.31 N., R.2 E. (unsurveyed), Hydrologic Unit 15010002, on the right bank approximately 0.25 mi upstream of Tonto Trail crossing, and 5 mi northwest of Grand Canyon Village in Grand Canyon National Park.

DRAINAGE AREA.--10.50 mi².

PERIOD OF RECORD.--Sept. 1994 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,920 ft above sea level, from topographic map.

REMARKS.--Records poor. Daily discharges are not calculated for periods of no gage-height record and when instantaneous discharge exceeds 1.5 ft³/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.76	0.67	0.67	0.67	0.65	0.67	0.66	0.80	0.67	0.63	0.67	0.67
2	0.76	0.67	0.68	0.67	0.65	0.67	0.67	0.78	0.67	0.63	0.69	0.67
3	0.76	0.67	0.67	0.67	0.65	0.67	0.66	0.76	0.67	0.70	0.71	0.67
4	0.76	0.67	0.68	0.67	0.65	0.67	0.64	0.76	0.67	0.70	0.69	0.67
5	0.76	0.67	0.67	0.67	0.66	0.67	0.66	0.76	0.67	0.67	0.67	0.67
6	0.76	0.67	0.67	0.67	0.66	0.67	0.67	0.76	0.67	0.67	0.67	0.67
7	0.80	0.67	0.67	0.67	0.65	0.67	0.69	0.76	0.64	0.67	0.67	---
8	0.80	0.67	0.67	0.67	0.66	0.68	0.71	0.78	0.63	0.67	0.67	0.74
9	0.80	0.67	0.67	0.67	0.66	0.67	0.71	0.76	0.63	0.67	0.67	---
10	0.80	0.67	0.67	0.67	0.66	0.67	0.71	0.76	0.63	0.67	0.67	---
11	0.79	0.66	0.67	0.67	0.66	0.67	0.71	0.76	0.63	0.67	0.67	---
12	0.76	0.63	0.67	0.67	0.66	0.67	0.70	0.76	0.63	0.67	0.67	---
13	0.76	0.63	0.67	0.67	0.66	0.67	0.71	0.76	0.63	0.67	0.67	---
14	0.76	0.63	0.67	0.67	0.66	0.67	0.70	0.76	0.63	0.67	0.67	---
15	0.76	0.63	0.67	0.67	0.66	0.67	0.70	0.76	0.63	0.67	0.67	---
16	0.76	0.63	0.67	0.67	0.66	0.67	0.72	0.76	0.63	0.67	0.67	---
17	0.76	0.63	0.67	0.67	0.66	0.67	0.72	0.76	0.63	0.67	0.67	0.69
18	0.76	0.63	0.67	0.67	0.65	0.67	0.74	0.76	0.63	0.67	0.67	0.67
19	0.74	0.64	0.67	0.67	0.66	0.67	0.74	0.76	0.63	0.67	0.67	0.67
20	0.71	0.67	0.67	0.66	0.66	0.67	0.72	0.71	0.63	0.67	0.68	0.67
21	0.71	0.67	0.67	0.65	0.66	0.67	0.71	0.71	0.63	0.67	0.67	0.67
22	0.71	0.67	0.67	0.66	0.66	0.67	0.71	0.71	0.63	0.67	0.67	0.67
23	0.71	0.67	0.67	0.67	0.67	0.67	0.71	0.71	0.63	0.67	0.67	0.67
24	0.71	0.67	0.67	0.65	0.66	0.67	0.71	0.71	0.63	0.69	0.67	0.67
25	0.71	0.68	0.67	0.64	0.66	0.67	0.72	0.71	0.63	0.69	0.67	0.67
26	0.71	0.70	0.67	0.66	0.65	0.67	0.75	0.71	0.63	0.67	0.67	0.67
27	0.68	0.67	0.67	0.67	0.67	0.67	0.79	0.71	0.63	0.67	0.67	0.67
28	0.67	0.67	0.67	0.64	0.67	0.67	0.79	0.71	0.63	0.67	0.67	0.67
29	0.67	0.67	0.67	0.66	---	0.67	0.80	0.67	0.63	0.67	0.67	0.67
30	0.67	0.67	0.67	0.66	---	0.67	0.80	0.67	0.63	0.67	0.67	0.67
31	0.67	---	0.68	0.65	---	0.67	---	0.67	---	0.67	0.67	---
TOTAL	22.94	19.82	20.80	20.60	18.44	20.78	21.43	22.92	19.15	20.79	20.86	---
MEAN	0.740	0.661	0.671	0.665	0.659	0.670	0.714	0.739	0.638	0.671	0.673	---
MAX	0.80	0.70	0.68	0.67	0.67	0.68	0.80	0.80	0.67	0.70	0.71	---
MIN	0.67	0.63	0.67	0.64	0.65	0.67	0.64	0.67	0.63	0.63	0.67	---

KANAB CREEK BASIN

09403600 KANAB CREEK NEAR KANAB, UT

LOCATION--Lat 37° 06' 02", long 112° 32' 50", in NE1/4NE1/4SW1/4 sec. 5, T. 43 S., R. 6 W., Kane County, Hydrologic Unit 15010003, on left bank at upstream side of bridge on U.S. Highway 89, 300 ft upstream from Tiny Canyon and 3.5 mi north of Kanab.

DRAINAGE AREA--198 mi².

PERIOD OF RECORD--July 1959 to Sept. 1968 (peaks only). January 1979 to current year

REVISED RECORDS--WDR UT-98-1: 1997, daily values.

GAGE--Water-stage recorder and crest-stage gage. Elevation of gage is 5,060 ft above NGVD of 1929, from topographic map. A crest-stage gage from July 22, 1959, to Sept. 30, 1968, at different datum. July 6, 1979 to September 18, 1984 water-stage recorder at same site, different datum.

REMARKS--Records poor. Several diversions above station for irrigation and stock watering.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 3,030 ft³/s, Sept. 8, 1961, gage height, 8.39 ft, from rating curve extended above 31 ft³/s on basis of slope area measurement at gage height, 7.09 ft; minimum daily discharge, 2.9 ft³/s, July 27, 2000.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 200 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 28.....	1200	*14	*5.68

Minimum daily discharge, 3.3 ft³/s, Jan 23, Jun 1, Aug 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	4.5	6.6	6.1	e3.9	6.3	10	7.8	3.3	5.2	4.5	4.2
2	5.5	4.6	6.2	6.2	e4.0	7.7	9.2	7.8	4.0	5.5	5.0	4.4
3	5.7	4.6	5.8	6.4	e4.6	8.7	11	7.3	5.8	6.0	5.6	4.5
4	5.7	4.7	6.5	6.4	5.0	6.8	9.4	6.5	6.3	5.8	5.0	4.5
5	5.7	4.7	6.0	6.2	5.6	6.7	9.1	6.1	6.4	5.9	4.8	4.4
6	5.6	4.7	5.9	6.0	6.1	6.1	7.7	5.8	5.4	5.5	4.9	5.0
7	5.8	4.8	5.7	5.6	5.7	6.5	7.1	6.8	5.7	5.9	4.8	7.1
8	5.8	4.9	5.6	5.8	5.4	7.1	6.9	7.8	5.0	5.9	4.7	6.2
9	5.5	5.0	5.7	5.7	5.1	7.5	7.4	7.8	4.7	6.3	4.3	5.5
10	5.2	4.7	6.1	5.8	5.6	7.8	7.6	8.3	5.4	6.0	3.8	5.8
11	5.3	4.5	6.0	5.7	5.1	7.5	8.6	8.6	5.6	5.6	3.4	5.8
12	5.4	4.5	6.1	5.6	4.6	7.8	7.7	8.9	5.1	5.9	3.6	5.5
13	5.4	4.9	e5.8	5.8	5.1	8.2	7.9	8.7	4.9	5.9	3.5	4.5
14	5.4	4.9	e6.1	5.5	4.2	9.9	7.6	8.4	4.7	5.9	3.7	4.5
15	5.3	4.7	e6.0	4.9	4.5	8.6	7.3	7.4	5.1	6.5	3.8	3.8
16	5.2	4.6	e5.8	5.0	5.2	10	6.9	6.4	4.7	7.2	3.9	4.7
17	5.1	4.5	e5.9	5.6	5.0	11	7.7	5.9	4.9	7.4	3.5	4.6
18	4.8	4.7	e6.0	5.6	5.0	10	7.3	5.5	4.9	6.9	4.0	4.8
19	4.8	5.0	e6.1	e5.4	5.2	9.1	7.2	5.9	4.8	7.4	3.9	4.6
20	4.7	5.3	e6.5	5.7	6.4	11	7.8	7.6	5.0	7.9	3.3	4.7
21	4.8	5.3	e6.3	4.3	5.8	9.3	8.3	8.4	5.4	7.4	3.9	4.6
22	4.9	5.3	e6.1	3.6	6.3	9.8	7.1	8.3	5.6	6.7	4.1	4.4
23	4.7	5.5	e6.0	e3.3	7.1	11	6.3	10	5.9	5.6	4.2	4.4
24	4.5	6.3	e5.5	e3.6	7.2	11	6.5	10	6.3	6.4	4.0	4.4
25	5.0	7.5	e5.4	e3.9	8.0	10	6.3	9.5	5.8	6.6	3.7	4.3
26	4.7	7.2	e5.3	4.4	7.3	9.3	5.8	9.1	5.8	6.3	4.1	4.0
27	4.6	7.0	e5.3	5.1	7.7	11	5.9	8.9	5.7	5.6	4.3	4.1
28	4.5	7.3	e5.8	4.2	7.3	9.8	7.1	8.2	5.5	5.3	4.4	4.1
29	4.5	7.1	e6.2	4.4	---	9.4	8.0	5.8	5.5	5.2	4.1	4.6
30	4.5	6.7	6.6	e4.0	---	9.4	6.9	4.2	5.6	5.0	4.3	5.1
31	4.3	---	6.2	e3.9	---	9.4	---	3.6	---	4.7	4.6	---
TOTAL	158.6	160.0	185.1	159.7	158.0	273.7	229.6	231.3	158.8	189.4	129.7	143.1
MEAN	5.116	5.333	5.971	5.152	5.643	8.829	7.653	7.461	5.293	6.110	4.184	4.770
MAX	5.8	7.5	6.6	6.4	8.0	11	11	10	6.4	7.9	5.6	7.1
MIN	4.3	4.5	5.3	3.3	3.9	6.1	5.8	3.6	3.3	4.7	3.3	3.8
AC-FT	315	317	367	317	313	543	455	459	315	376	257	284

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2002, BY WATER YEAR (WY)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
MEAN	10.43	9.956	10.80	12.36	15.91	23.83	22.39	9.655	6.963	7.112	8.228	9.971												
MAX	25.7	15.2	21.7	27.9	45.1	72.4	132	27.6	12.1	13.8	16.5	28.1												
(WY)	1982	1988	1980	1997	1980	1983	1980	1980	1981	1981	1981	1998												
MIN	5.12	5.33	5.31	5.15	5.64	8.83	6.81	5.62	4.36	3.90	4.07	4.77												
(WY)	2002	2002	1990	2002	2002	2002	1990	2001	1986	2000	1995	2002												

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1980 - 2002
ANNUAL TOTAL	2821.7	2177.0	
ANNUAL MEAN	7.731	5.964	12.27
HIGHEST ANNUAL MEAN			28.4
LOWEST ANNUAL MEAN			5.96
HIGHEST DAILY MEAN	54	Sep 17	354
LOWEST DAILY MEAN	3.2	Aug 5	2.9
ANNUAL SEVEN-DAY MINIMUM	3.5	Jul 30	3.0
ANNUAL RUNOFF (AC-FT)	5600	4320	8890
10 PERCENT EXCEEDS	16	8.3	19
50 PERCENT EXCEEDS	5.7	5.7	8.9
90 PERCENT EXCEEDS	4.3	4.2	5.3

e Estimated

HAVASU CREEK BASIN

09404110 HAVASU CREEK AT SUPAI, AZ

LOCATION --Lat 36° 13'37", long 112° 41'15" (unsurveyed), in Coconino County, Hydrologic Unit 15010004, on the Havasupai Indian Reservation on the right bank, about 1.5 mi upstream from Supai.

DRAINAGE AREA --2,809 mi², including 209 mi² which are non-contributing.

PERIOD OF RECORD --Sept. 1995 to current year.

GAGE --Water-stage recorder. Elevation of gage is 3,240 ft above sea level from topographic map.

REMARKS --Records fair except for estimated daily discharges and daily discharges greater than 100 ft³/s, which are poor. Several diversions and small impoundments upstream for irrigation and public supply.

EXTREMES OUTSIDE PERIOD OF RECORD --Jan. 2, 1910, maximum discharge unknown, flood wave reported as about 20 ft high through Supai Village. Sept. 3, 1990, 20,300 ft³/s, based on slope-area computation for site 12 mi downstream at the mouth. Flood wave through Supai Village reported as about 14 ft for this event; minimum discharge unknown.

EXTREMES FOR PERIOD OF RECORD --Maximum discharge, unknown, Aug. 10, 1997, gage height, 20.8 ft (estimated from highwater mark); minimum daily 56 ft³/s, Dec. 15, 1998.

EXTREMES FOR CURRENT YEAR --Maximum discharge, unknown Sept. 8 at 1445, gage height, 19.46 ft. Minimum daily discharge, 62 ft³/s on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	63	65	66	64	65	65	67	66	65	64	62
2	64	62	64	65	65	64	65	67	66	65	64	62
3	65	62	65	66	63	64	65	66	66	65	64	63
4	66	62	66	65	64	64	64	66	64	65	64	62
5	66	62	64	65	64	65	65	66	63	65	64	63
6	86	63	64	65	64	65	66	67	63	65	64	65
7	66	64	64	65	64	66	66	67	63	65	64	136
8	66	62	64	65	64	66	66	66	65	65	64	125
9	66	62	64	65	62	64	66	65	66	64	64	65
10	66	63	66	65	63	65	65	65	67	64	64	65
11	66	64	66	66	64	65	65	65	67	64	63	e100
12	65	63	66	66	64	65	65	64	66	64	62	71
13	65	64	66	65	65	65	67	66	66	63	62	68
14	65	64	66	66	65	65	64	66	66	63	62	67
15	64	64	65	66	65	65	64	65	66	64	62	65
16	64	64	64	65	65	66	64	65	66	65	62	65
17	64	64	65	65	65	65	65	64	66	65	62	65
18	64	64	65	65	65	65	65	65	66	66	62	66
19	64	64	65	65	65	64	65	65	64	66	62	65
20	64	64	65	65	65	63	66	65	64	66	64	65
21	64	64	65	65	64	64	65	66	65	66	64	65
22	64	65	65	65	64	65	66	66	64	66	64	65
23	64	66	65	65	65	65	66	65	63	65	64	65
24	64	66	64	65	65	65	66	65	64	68	64	65
25	64	68	64	65	64	66	66	65	65	64	64	64
26	63	66	64	65	63	66	66	65	66	64	64	64
27	64	66	64	66	64	66	66	65	66	64	64	65
28	63	65	63	65	64	65	66	65	66	64	64	65
29	62	66	64	65	---	65	66	65	66	64	63	65
30	63	65	65	66	---	65	66	65	65	64	62	64
31	64	---	67	64	---	65	---	65	---	64	62	---
TOTAL	2019	1921	2009	2022	1798	2013	1962	2029	1956	2007	1962	2112
MEAN	65.13	64.03	64.81	65.23	64.21	64.94	65.40	65.45	65.20	64.74	63.29	70.40
MAX	86	68	67	66	65	66	67	67	67	68	64	136
MIN	62	62	63	64	62	63	64	64	63	63	62	62
AC-FT	4000	3810	3980	4010	3570	3990	3890	4020	3880	3980	3890	4190
CFSM	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2002, BY WATER YEAR (WY)

	1995	1996	1997	1998	1999	2000	2001	2002				
MEAN	64.99	62.72	64.92	64.33	64.12	64.59	65.82	64.74	65.31	66.98	68.83	69.51
MAX	69.6	65.0	67.1	65.6	65.9	67.1	69.4	69.4	68.9	70.5	73.5	82.7
(WY)	2001	1998	1998	1996	2000	1999	1999	2000	1996	1998	2000	1998
MIN	59.7	60.7	63.4	63.3	62.3	63.3	63.0	61.6	62.4	63.6	63.3	64.0
(WY)	2000	2000	2000	1999	1998	2001	1996	1997	1997	2000	2002	2001

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1995 - 2002
ANNUAL TOTAL	23873	23810	
ANNUAL MEAN	65.41	65.23	65.57
HIGHEST ANNUAL MEAN			67.0 1998
LOWEST ANNUAL MEAN			65.0 1996
HIGHEST DAILY MEAN	150 Jul 6	136 Sep 7	300 Aug 10 1997
LOWEST DAILY MEAN	58 Jan 7	62 Oct 29	56 Dec 15 1998
ANNUAL SEVEN-DAY MINIMUM	59 Jan 4	62 Aug 12	57 Dec 13 1998
ANNUAL RUNOFF (AC-FT)	47350	47230	47500
ANNUAL RUNOFF (CFSM)	0.023	0.023	0.023
10 PERCENT EXCEEDS	68	66	68
50 PERCENT EXCEEDS	65	65	65
90 PERCENT EXCEEDS	62	63	62

e Estimated

HAVASU CREEK BASIN

09404115 HAVASU CREEK ABOVE THE MOUTH, NEAR SUPAI, AZ

LOCATION--Lat 36° 18'24", long 112° 45'39", unsurveyed, Coconino County, Hydrologic Unit 15010004, in Grand Canyon National Park, 8.0 mi downstream from Supai, 69 mi downstream from Phantom Ranch, 173 mi downstream from Glen Canyon Dam, and 199 mi upstream from Hoover Dam.

DRAINAGE AREA--3,020 mi², including 209 mi² which are noncontributing.

PERIOD OF RECORD--Nov. 1990 to Sept. 1997, June 2000 to current year.

GAGE--Water-stage recorder. Datum of gage is 1,793.81 ft above sea level.

REMARKS--Records good, except for discharges greater than 100 ft³/s which are poor. Several diversions and small impoundments upstream for irrigation and public supply.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 13,400 ft³/s, Feb. 21, 1991, gage height, 23.4 ft; minimum daily 63 ft³/s on many days in 1997.

EXTREMES OUTSIDE PERIOD OF RECORD--Maximum discharge unknown, Jan. 2, 1910, flood wave reported as about 20 ft high through Supai village. Sept. 3, 1990, 26.3 ft, 20,300 ft³/s, based on slope-area computation, flood wave through Supai village reported as about 14 ft for this event. Minimum discharge unknown.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 1,850 ft³/s July 24 at 1630, gage height, 13.12 ft. Minimum daily discharge, 65 ft³/s Feb. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	69	72	69	66	68	68	68	69	67	69	70
2	70	68	71	69	67	67	67	69	69	68	69	70
3	70	68	71	69	67	67	67	69	69	69	70	71
4	70	69	73	69	67	67	67	69	69	69	69	70
5	70	69	72	68	67	67	67	69	69	68	69	71
6	87	69	71	67	67	68	68	68	69	68	70	75
7	74	69	70	67	67	68	68	69	68	68	69	144
8	71	69	70	68	67	68	68	69	68	68	68	117
9	70	69	71	68	66	68	67	69	68	68	69	77
10	70	69	70	68	65	68	67	69	68	69	69	75
11	69	69	70	67	66	68	67	70	68	69	69	106
12	69	69	70	67	67	68	68	69	67	69	69	75
13	69	70	69	67	67	69	68	69	67	70	70	72
14	69	70	70	68	67	72	68	70	68	68	70	71
15	69	69	70	68	67	72	69	70	67	67	70	70
16	68	69	69	67	67	69	69	69	67	69	69	70
17	69	69	68	67	68	68	69	69	67	69	70	70
18	69	69	68	67	69	69	69	69	67	68	70	70
19	69	69	69	66	68	68	68	69	67	68	70	70
20	68	69	69	67	68	68	68	69	67	68	69	69
21	68	70	69	67	67	68	68	70	67	68	69	68
22	69	70	69	67	67	68	68	69	68	68	68	68
23	69	70	69	67	68	68	68	69	68	67	69	68
24	68	70	68	66	68	70	67	69	68	194	68	68
25	68	71	68	66	68	70	68	70	68	68	68	68
26	68	71	68	67	67	69	68	70	68	69	69	68
27	69	70	69	67	67	69	69	70	68	67	69	67
28	68	70	69	67	67	69	68	69	68	67	68	69
29	67	71	69	68	---	69	68	70	68	69	69	69
30	68	72	69	68	---	69	68	70	67	68	69	68
31	69	---	70	67	---	69	---	70	---	68	70	---
TOTAL	2162	2085	2160	2090	1879	2125	2037	2147	2036	2240	2143	2264
MEAN	69.74	69.50	69.68	67.42	67.11	68.55	67.90	69.26	67.87	72.26	69.13	75.47
MAX	87	72	73	69	69	72	69	70	69	194	70	144
MIN	67	68	68	66	65	67	67	68	67	67	68	67
AC-FT	4290	4140	4280	4150	3730	4210	4040	4260	4040	4440	4250	4490
CAL YR 2001	TOTAL 26191	MEAN 71.76	MAX 157	MIN 67	AC-FT 51950							
WTR YR 2002	TOTAL 25368	MEAN 69.50	MAX 194	MIN 65	AC-FT 50320							

COLORADO RIVER MAIN STEM

09404200 COLORADO RIVER ABOVE DIAMOND CREEK NEAR PEACH SPRINGS, AZ

LOCATION--Lat 35° 46'25", long 113° 21'46", sec. 33, T.28 N., R.10 W., unsurveyed, Mohave County, Hydrologic Unit 15010002, in Lake Mead National Recreation Area, on the right bank, 0.6 mi upstream from Diamond Creek, 138 mi downstream from Phantom Ranch, 25 mi north of Peach Springs, 242 mi downstream from Glen Canyon Dam, and 130 mi upstream from Hoover Dam.

DRAINAGE AREA--149,316 mi², including 3,959 mi² in Great Divide basin in southern Wyoming, and 697 mi² on the Colorado Plateau, which are noncontributing.

PERIOD OF RECORD--June 1983 to Dec. 1983, Sept. 1985 to Feb. 1986, Oct. 1989 to current year.

GAGE--Water-stage recorder. Elevation of gage is 1,340 ft above sea level, from topographic map.

REMARKS--Records good, except for estimated daily discharges which are fair. Flow regulated since Mar. 13, 1963, by Lake Powell 242 mi upstream. Many diversions above Lake Powell for irrigation, municipal, and industrial use. Several unregulated tributaries below Glen Canyon Dam.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge 97,000 ft³/s, June 30, 1983, gage height, unknown; minimum 3,710 ft³/s, Mar. 21, 1990, gage height, 43.89 ft.

EXTREMES OUTSIDE PERIOD OF RECORD--Maximum discharge since at least 1868, about 300,000 ft³/s, about July 8, 1884, based on flow studies at Lees Ferry.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 21,600 ft³/s Sept.12 at 1245, gage height, 51.90 ft. Minimum daily discharge, 7,880 ft³/s Oct. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8490	10800	11600	11800	14400	11800	9860	10900	8780	12900	16700	16100
2	7880	10900	11700	14800	14400	11700	9860	11000	8770	12500	16600	15300
3	10400	e11000	14700	12500	12100	e11800	10900	10800	12500	16000	15900	9980
4	10800	e11000	11200	14800	10600	e10300	10900	10900	12500	16200	15900	8430
5	10700	e10300	14800	14600	10200	e10000	10900	11400	13800	16100	15300	9090
6	10800	e9800	15100	14800	11800	10400	10900	10700	13900	14100	14500	9160
7	10900	11100	15000	12800	11900	10500	11000	10000	13600	15700	15600	9200
8	10800	11100	14700	11900	11700	10600	10000	11100	13600	15300	16000	10700
9	8600	11000	14700	14500	11500	10700	9950	11000	13600	14100	16300	12100
10	10500	10800	13800	14600	11600	10700	10900	10900	12700	15600	16600	11000
11	11100	11100	10700	14700	10600	10100	10900	10900	12400	15600	16200	10100
12	11100	10700	14400	14700	10200	9910	10900	11000	13600	15600	15100	16400
13	10900	9590	14600	14800	12000	10600	11200	10400	13600	16500	14500	13200
14	10900	11000	14700	13000	12000	10500	11000	9980	13600	16300	15800	11000
15	10800	11000	14500	11700	12000	10600	10200	10900	13700	16200	15800	10900
16	8540	11100	14500	14300	11900	10700	9900	11000	13700	14600	15900	10700
17	10400	11100	14100	14200	11900	10700	10900	11000	12800	16400	16000	11400
18	10900	10900	10900	14800	10700	10200	10900	11100	12400	16400	16000	11800
19	10900	10800	14300	14600	10400	10100	10900	10900	13600	16400	15200	10200
20	10900	9930	14500	14600	11900	11000	11000	10700	13700	16400	14500	9510
21	11000	11100	14900	12500	12000	10700	11100	9990	13700	16000	16300	9310
22	10800	11100	14800	11600	12000	10600	10300	10600	13700	15900	16000	9230
23	8570	11000	14700	14500	11900	10700	10000	10900	13900	14300	15300	8620
24	10500	10100	14200	14600	12000	10700	11200	11000	13000	16100	15800	8300
25	10800	11100	11000	14600	10700	9790	11100	10900	12300	16500	15800	9020
26	10900	11100	14400	14600	10400	9920	11100	9070	13600	16100	15100	9350
27	10900	10000	11400	14600	11900	10400	11100	8780	13700	16000	14300	9160
28	10900	11600	14300	12500	12000	10400	11000	8770	13700	16200	15900	9010
29	10800	11600	14700	12700	---	10700	10200	8770	13700	15900	16200	8970
30	8590	11800	14800	14700	---	10600	9920	8800	13700	14500	16100	8260
31	10500	---	14100	14300	---	10600	---	8740	---	16400	16000	---
TOTAL	320570	325520	427800	429700	326700	328020	319990	322900	391850	482800	487200	315500
MEAN	10340	10850	13800	13860	11670	10580	10670	10420	13060	15570	15720	10520
MAX	11100	11800	15100	14800	14400	11800	11200	11400	13900	16500	16700	16400
MIN	7880	9590	10700	11600	10200	9790	9860	8740	8770	12500	14300	8260
AC-FT	635900	645700	848500	852300	648000	650600	634700	640500	777200	957600	966400	625800
CAL YR 2001	TOTAL	4430600	MEAN	12140	MAX	17200	MIN	7600	AC-FT	8788000		
WTR YR 2002	TOTAL	4478550	MEAN	12270	MAX	16700	MIN	7880	AC-FT	8883000		

e Estimated

COLORADO RIVER MAIN STEM

09404200 COLORADO RIVER ABOVE DIAMOND CREEK NEAR PEACH SPRINGS, AZ—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD --June 1983 to Dec. 1983, Sept. 1985 to Feb. 1985, Sept. 1989 to Apr. 1993, and Nov. 1996 to current year.

PERIOD OF DAILY RECORD--

SPECIFIC CONDUCTANCE: Aug. 1990 to Apr. 1993.

pH: Aug. 1990 to Apr. 1993.

WATER TEMPERATURES: Aug. 1990 to Apr. 1993.

DISSOLVED-OXYGEN CONCENTRATION: Aug. 1990 to Apr. 1993.

SUSPENDED-SEDIMENT DISCHARGE: Aug. 1990 to Apr. 1993.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)		
Date			MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	BROMIDE DIS-SOLVED (MG/L AS BR) (71870)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
NOV															
15...	1205	9	12200	730	11.6	111	8.2	850	19.5	11.5	110	260	65.7		
15...	1215	7	12200	--	--	--	--	--	19.5	11.5	--	--	--		
DEC															
13...	1045	9	16200	740	11.1	98	8.3	838	6.5	8.5	110	260	64.8		
13...	1055	7	16200	--	--	--	--	--	6.5	8.5	--	--	--		
JAN															
15...	1050	9	11700	--	10.9	94	8.2	802	12.9	9.2	100	240	60.9		
15...	1100	7	11700	--	10.9	--	8.3	802	12.9	9.2	--	--	--		
MAR															
14...	1145	9	10900	728	10.7	100	8.4	923	13.7	10.6	130	270	68.9		
14...	1155	7	10900	--	--	--	--	--	13.7	10.6	--	--	--		
APR															
17...	1010	9	10900	725	S11.6F	S108F	8.5	898	24.1	14.1	120	280	70.6		
17...	1020	7	10900	--	--	--	--	--	24.1	14.1	--	--	--		
JUN															
04...	1035	9	12700	728	8.7	95	8.1	936	36.5	17.0	130	270	67.7		
04...	1045	7	12700	--	--	--	--	--	36.5	17.0	--	--	--		
26...	1105	9	15300	727	10.7	116	8.2	890	30.0	17.0	140	280	71.5		
26...	1115	7	15300	727	10.7	116	8.3	892	30.0	17.0	140	280	71.2		
AUG															
14...	0830	9	18400	730	10.2	108	7.9	859	34.5	16.0	140	270	70.6		
14...	0840	7	18400	--	--	--	--	--	34.5	16.0	--	--	--		

COLORADO RIVER MAIN STEM

09404200 COLORADO RIVER ABOVE DIAMOND CREEK NEAR PEACH SPRINGS, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	U-235 2 SIGMA SED, SUSP, TOTAL, DRY WGT (PCI/G) (75947)	U-235 SED, SUSP, TOTAL, DRY WGT (PCI/L) (75975)	U-238 2 SIGMA SED, SUSP, TOTAL, DRY WGT (PCI/G) (04113)	U-238 SED, SUSP, TOTAL, DRY WGT (PCI/G) (75940)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L) (80154)	UV ABSORB- ANCE 254 NM, WTR FLT (UNITS (50624)	UV ABSORB- ANCE 280 NM, WTR FLT (UNITS (61726)	NITRO- GEN, PAR TICULTE WAT FLT SUSP (MG/L) AS N) (49570)	CARBON, INORG + ORGANIC TOTAL (MG/L) AS C) (00694)	CARBON, INOR- GANIC, PARTIC. TOTAL (MG/L) AS C) (00688)	
NOV												
15...	--	--	--	--	71	44	1450	.059p1	.043p1	.03	.9	<.1
15...	--	--	--	--	58	29	955	--	--	--	--	--
DEC												
13...	--	--	--	--	41	35	1530	.053	.036	.09	1.9	.4
13...	--	--	--	--	42	32	1400	--	--	--	--	--
JAN												
15...	--	--	--	--	43	97	3060	.051	.034	.03	.8	.5
15...	--	--	--	--	43	125	3950	.051	.034	.03	.8	<.1
MAR												
14...	--	--	--	--	49	31	912	.057	.039	.03	.5	<.1
14...	--	--	--	--	55	26	765	--	--	--	--	--
APR												
17...	--	--	--	--	31	20	589	.054	.037	.03	.5	<.1
17...	--	--	--	--	28	21	618	--	--	--	--	--
JUN												
04...	--	--	--	--	32	125	4290	.055	.037	.05	.9	<.1
04...	--	--	--	--	25	168	5760	--	--	--	--	--
26...	--	--	--	--	16	88	3640	.058	.040	<.02	.7	<.1
26...	--	--	--	--	13	84	3470	.036	.025	<.02	.9	<.1
AUG												
14...	.01	M	.05	.1	76	536	26600	.060	.042	.20	2.0	.1
14...	--	--	--	--	82	482	23900	--	--	--	--	--

Remark codes used in this report:

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified
S -- Most probable value

Value qualifier codes used in this report:

f -- Sample field preparation problem
l -- Sample lab preparation problem
n -- Below the NDV
p -- Value reported is preferred
r -- Value verified by rerun, same method

09404200 COLORADO RIVER ABOVE DIAMOND CREEK NEAR PEACH SPRINGS, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Water-quality measurements in the following table were made as part of the National Stream-Quality Accounting Network. The following analyses are quality-assurance samples processed during the 2002 sampling period and are defined in the introductory text section titled "Water-Quality Control Data".

Date	Time	Sample type	UV ABSORB- ANCE 254 NM, WTR FLT (UNITS /CM) (50624)	UV ABSORB- ANCE 280 NM, WTR FLT (UNITS /CM) (61726)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, PAR TICULTE WAT FLT SUSP (MG/L AS N) (49570)	ORTHO- PHOS- PHATE, DIS- SOLVED (MG/L AS P) (00671)
NOV 15...	1213	2	<.004p1	<.004p1	E.01	<.008	<.09	<.13	<.015	<.013	<.002	<.02	<.007
AUG 14...	0834	2	--	--	--	--	--	--	--	--	--	--	--
14...	0835	2	--	--	--	--	--	--	--	--	--	--	--
14...	0836	2	--	--	--	--	--	--	--	--	--	--	--
14...	0837	2	--	--	--	--	--	--	--	--	--	--	--
14...	0838	2	<.004	<.004	<.01	<.008	<.09	<.13	<.015	<.013	<.002	<.02	<.007
Date	CARBON, INORG + ORGANIC PARTIC. TOTAL (MG/L AS C) (00694)	CARBON, INOR- GANIC, PARTIC. TOTAL (MG/L AS C) (00688)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC- PARTIC- ULATE TOTAL (MG/L AS C) (00689)	ALUM- INUM, DIS- SOLVED (MG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (MG/L AS SB) (01095)	ARSENIC DIS- SOLVED (MG/L AS AS) (01000)	BARIUM, DIS- SOLVED (MG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (MG/L AS BE) (01010)	BORON, DIS- SOLVED (MG/L AS B) (01020)	CADMIUM DIS- SOLVED (MG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (MG/L AS CR) (01030)	COBALT, DIS- SOLVED (MG/L AS CO) (01035)
NOV 15...	<.1	<.1	E.2n	<.1	<1	<.05	E.1	<1	<.06	<7	<.04	<.8	<.02
AUG 14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	<.1	<.1	E.2n	<.1	<1	<.05	<.2	<1	<.06	<7	<.04	<.8	<.02
Date	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	THAL- LIUM, DIS- SOLVED (UG/L AS TL) (01057)
NOV 15...	<.2	--	<10	<.08	--	<.3	<.1	<.2	<.06	<.3	<1	<.08	<.04
AUG 14...	--	<.6	--	--	<1	--	--	--	--	--	--	--	--
14...	--	<.6	--	--	<1	--	--	--	--	--	--	--	--
14...	--	<.6	--	--	<1	--	--	--	--	--	--	--	--
14...	--	<.6	--	--	<1	--	--	--	--	--	--	--	--
14...	V1.7v	--	<10	.57v	--	<.3	<.1	<.2	<.06	<.3	<1	<.08	<.04
Date	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)									
NOV 15...	<.2	<1	--	<.02									
AUG 14...	--	--	<1	--									
14...	--	--	<1	--									
14...	--	--	<1	--									
14...	--	--	<1	--									
14...	<.2	1v	--	<.02									

Remark codes used in this report:
 < -- Less than
 E -- Estimated value
 V -- Contamination

Value qualifier codes used in this report:
 l -- Sample lab preparation problem
 n -- Below the NDV
 p -- Value reported is preferred
 v -- Analyte detected in laboratory blank

COLORADO RIVER BASIN

09404208 DIAMOND CREEK NEAR PEACH SPRINGS, AZ

LOCATION--Lat 35° 45'54", Long 113° 22'03", sec. 32, T.28 N. , R.10 W. , unsurveyed, Mohave County, Hydrologic Unit 15010002, on the Hualapai Reservation, on the right bank, 0.25 mi upstream from mouth, and 20.4 mi north of Peach Springs by dirt road.

DRAINAGE AREA--279.5 mi².

PERIOD OF RECORD--May 1993 to current year.

GAGE--Water-stage recorder. Elevation of gage is 1,400 ft above sea level, from topographic map.

REMARKS--Records poor.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 10,500 ft³/s Aug. 29, 2000, gage height 15.32 ft. from floodmark; minimum daily discharge, 0.64 ft³/s, Aug. 9, 1993.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 600 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 23	2130	*41	*8.90

Minimum daily discharge, 1.2 ft³/s, July 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	2.9	3.2	4.0	4.8	4.2	3.9	2.2	1.6	1.3	1.5	1.8
2	2.6	2.9	3.1	4.0	4.8	4.3	3.9	2.3	1.7	1.4	1.5	1.8
3	2.4	2.9	2.9	4.0	4.8	4.3	3.7	2.3	1.8	1.5	1.5	1.8
4	2.1	2.9	3.6	4.0	4.8	4.3	3.7	2.2	1.8	1.5	1.4	1.8
5	1.9	3.3	3.3	4.0	4.8	4.3	3.7	2.1	1.9	1.5	1.5	1.8
6	1.8	3.3	3.1	4.3	4.8	4.3	3.9	1.9	1.9	1.4	1.5	1.9
7	2.4	3.2	3.1	4.3	4.8	4.0	3.8	1.8	2.0	1.3	1.5	3.6
8	2.7	3.2	3.1	4.3	4.8	4.1	3.6	1.7	1.9	1.3	1.5	2.7
9	2.5	3.1	3.1	4.3	4.8	4.0	3.7	1.8	1.9	1.2	1.5	2.5
10	2.5	3.2	3.2	4.4	4.8	4.0	3.8	2.0	2.1	1.4	1.5	3.4
11	2.5	3.1	3.1	3.8	4.8	3.9	3.9	2.1	2.1	1.4	1.5	3.7
12	2.5	3.1	3.1	4.0	4.8	3.9	3.8	2.1	2.0	1.5	1.5	3.0
13	2.6	3.1	3.1	4.3	4.6	3.7	3.7	1.9	2.0	1.4	1.5	2.9
14	2.6	3.2	3.1	4.1	4.3	3.9	3.5	1.9	1.9	1.3	1.6	2.6
15	2.6	3.1	3.1	4.0	4.2	4.1	3.4	1.9	2.1	1.3	1.6	2.5
16	2.7	2.9	3.1	4.0	4.3	4.2	3.6	1.9	2.0	1.4	1.6	2.4
17	2.6	2.9	3.1	4.2	4.4	4.3	3.3	1.9	1.9	e4.0	1.7	2.5
18	2.7	2.9	3.1	4.3	4.6	3.9	3.3	1.9	1.9	e1.5	1.7	2.6
19	2.7	2.9	3.2	4.4	4.6	3.6	3.3	1.8	2.0	e1.4	1.7	2.6
20	2.7	3.1	3.3	4.5	4.5	3.3	3.3	1.7	1.8	e1.4	1.6	2.7
21	2.8	3.1	3.3	4.5	4.5	3.1	3.2	2.0	1.8	e1.4	1.6	2.6
22	2.8	3.2	3.1	4.5	4.5	3.1	3.0	2.0	1.8	e1.4	1.7	2.6
23	2.8	3.3	3.1	4.4	4.5	3.2	2.8	2.0	1.7	3.6	1.7	2.6
24	2.9	3.3	3.1	4.5	4.5	3.3	2.5	2.0	1.7	2.3	1.7	2.5
25	2.9	3.7	3.1	4.5	4.5	3.4	2.3	2.0	1.5	1.7	1.7	2.4
26	2.9	3.5	3.1	4.5	4.5	3.3	2.4	1.9	1.4	1.7	1.7	2.5
27	2.9	3.6	3.3	4.5	4.5	3.4	2.5	1.9	1.4	1.6	1.8	2.5
28	2.9	3.5	3.5	4.6	4.4	3.7	2.5	1.8	1.4	1.5	1.8	2.8
29	2.9	3.4	3.5	4.8	---	3.7	2.3	1.8	1.4	1.5	1.8	2.6
30	2.9	3.3	3.7	4.8	---	3.7	2.2	1.7	1.3	1.5	1.8	2.7
31	2.9	---	3.9	4.8	---	3.8	---	1.7	---	1.5	1.8	---
TOTAL	81.4	95.1	99.7	133.6	129.0	118.3	98.5	60.2	53.7	50.1	50.0	76.4
MEAN	2.626	3.170	3.216	4.310	4.607	3.816	3.283	1.942	1.790	1.616	1.613	2.547
MAX	2.9	3.7	3.9	4.8	4.8	4.3	3.9	2.3	2.1	4.0	1.8	3.7
MIN	1.8	2.9	2.9	3.8	4.2	3.1	2.2	1.7	1.3	1.2	1.4	1.8
AC-FT	161	189	198	265	256	235	195	119	107	99	99	152

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2002, BY WATER YEAR (WY)

MEAN	3.062	3.642	3.958	4.463	4.453	5.110	3.786	2.853	2.445	5.573	4.211	4.599
MAX	3.57	4.56	4.79	5.34	5.01	11.3	4.51	3.56	3.81	25.8	19.2	18.6
(WY)	1999	1999	1999	1997	2000	1995	1998	1993	2000	1999	2000	1999
MIN	2.63	3.05	3.17	3.29	3.70	3.82	3.28	1.94	1.79	1.09	1.61	2.26
(WY)	2002	1996	1995	1995	1995	2002	2002	2002	2002	1993	2002	1995

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1993 - 2002

ANNUAL TOTAL	1151.3	1046.0	
ANNUAL MEAN	3.154	2.866	4.014
HIGHEST ANNUAL MEAN			7.07
LOWEST ANNUAL MEAN			2.14
HIGHEST DAILY MEAN	10	Mar 11	484
LOWEST DAILY MEAN	1.0	Jul 8	0.64
ANNUAL SEVEN-DAY MINIMUM	1.1	Jul 7	0.82
ANNUAL RUNOFF (AC-FT)	2280	2070	2910
10 PERCENT EXCEEDS	4.6	4.4	4.8
50 PERCENT EXCEEDS	3.1	2.9	3.3
90 PERCENT EXCEEDS	1.6	1.5	2.0

e Estimated

LITTLE COLORADO RIVER BASIN

09404222 SPENCER CREEK NEAR PEACH SPRINGS, AZ

LOCATION--Lat 35° 48' 03", long 113° 39' 29", in NE1/4SW1/4NE1/4 sec. 22, T.13 W. , R.28 N. , Mohave County, Hydrologic Unit 15010005, on the Hualapai Reservation, on the left bank, about 2 mi upstream from the mouth.

DRAINAGE AREA--Undetermined.

PERIOD OF RECORD--Mar. 1998 to current year.

GAGE--Water-stage recorder. Elevation of gage is 1,620 ft above sea level, from topographic map.

REMARKS--Records fair except for estimated daily discharges and days above 20 ft³/s, which are poor.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 2,250 ft³/s, Aug. 30, 1999, gage height, 10.74 ft, from highwater mark; minimum daily discharge, 0.80 ft³/s, May 11, 2002.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 588 ft³/s July 16 at 2200, gage height, 7.15 ft from floodmark. Minimum daily discharge, 0.80 ft³/s, May 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1.1	1.0	0.90	0.96	0.94	0.97	1.1	1.3	1.5	0.93	1.0
2	1.5	1.0	0.99	0.97	0.94	0.94	0.98	1.0	1.4	1.5	0.94	1.0
3	1.5	0.99	0.98	1.0	0.94	0.94	0.98	0.96	1.5	1.5	0.96	1.0
4	1.5	1.0	0.99	1.0	0.94	0.94	0.99	0.98	1.6	1.5	0.99	1.0
5	1.5	1.1	0.99	0.96	0.94	0.94	0.99	0.90	1.5	1.5	1.0	1.0
6	1.5	1.0	0.99	0.94	0.94	0.94	1.0	0.91	1.5	1.5	1.0	1.0
7	5.0	1.0	0.97	0.94	0.94	0.94	1.1	0.93	1.5	1.5	1.0	1.0
8	1.4	1.0	0.90	0.94	0.92	0.94	1.1	0.86	1.6	1.4	1.0	1.0
9	1.3	1.0	0.84	0.94	0.92	0.99	1.1	0.88	1.6	1.4	1.0	1.1
10	1.2	1.0	0.85	0.94	0.99	1.0	1.0	0.82	1.6	1.4	1.0	1.0
11	1.1	1.0	0.85	0.94	1.0	1.0	1.1	0.80	1.6	1.4	1.0	1.0
12	1.1	1.0	0.85	0.94	0.94	1.0	1.1	0.85	1.6	1.3	1.1	1.0
13	1.1	1.0	0.85	0.94	0.89	1.0	1.2	0.92	1.5	1.3	1.0	1.0
14	1.1	1.0	0.86	0.94	0.85	1.0	1.2	0.93	1.5	1.3	1.0	1.0
15	1.1	1.0	0.85	0.94	0.85	1.1	1.1	0.95	1.5	1.3	1.1	1.0
16	0.99	1.0	0.85	0.94	0.85	1.2	1.1	0.93	1.5	e7.3	1.1	1.0
17	1.0	1.0	0.85	0.98	0.85	1.0	1.0	0.92	1.8	e2.1	1.1	1.1
18	1.0	1.0	0.85	1.0	0.94	1.1	1.1	0.91	1.8	1.1	1.2	1.1
19	1.0	0.97	0.85	1.0	0.94	1.0	1.1	0.90	1.6	1.1	1.2	1.1
20	1.0	0.94	0.86	1.0	0.94	1.0	1.2	0.92	1.6	1.0	1.2	1.1
21	1.1	0.94	0.90	1.0	0.94	1.0	1.3	0.94	1.6	0.96	1.1	1.1
22	1.1	0.94	0.93	0.88	0.94	1.1	1.2	0.97	1.6	0.92	1.1	1.0
23	1.1	0.94	0.93	0.97	0.94	1.1	1.1	0.98	1.6	0.88	1.2	1.0
24	1.1	0.95	0.92	1.0	0.94	1.1	1.1	1.0	1.5	0.91	1.2	1.0
25	1.1	1.1	0.93	0.95	0.93	1.1	1.1	1.1	1.5	0.88	1.2	1.0
26	1.1	1.1	0.93	0.94	0.85	1.0	1.1	1.1	1.5	0.88	1.2	1.0
27	1.1	1.1	0.94	0.94	0.89	1.1	1.0	1.1	1.5	0.86	1.1	1.0
28	1.1	0.99	0.94	0.94	0.94	1.1	0.99	1.2	1.5	0.89	1.1	1.0
29	1.1	1.0	0.94	0.96	---	0.99	0.98	1.2	1.5	0.89	1.1	1.0
30	1.1	1.0	0.90	0.98	---	0.98	0.99	1.2	1.5	0.85	1.1	1.0
31	1.1	---	0.86	0.98	---	0.97	---	1.3	---	0.87	1.1	---
TOTAL	40.49	30.16	28.14	29.69	25.85	31.45	32.27	30.46	46.4	43.69	33.32	30.6
MEAN	1.306	1.005	0.908	0.958	0.923	1.015	1.076	0.983	1.547	1.409	1.075	1.020
MAX	5.0	1.1	1.0	1.0	1.0	1.2	1.3	1.3	1.8	7.3	1.2	1.1
MIN	0.99	0.94	0.84	0.88	0.85	0.94	0.97	0.80	1.3	0.85	0.93	1.0
MED	1.1	1.0	0.90	0.94	0.94	1.0	1.1	0.94	1.5	1.3	1.1	1.0
AC-FT	80	60	56	59	51	62	64	60	92	87	66	61

CAL YR 2001 TOTAL 668.79 MEAN 1.832 MAX 69 MIN 0.84 MED 1.7 AC-FT 1330
WTR YR 2002 TOTAL 402.52 MEAN 1.103 MAX 7.3 MIN 0.80 MED 1.0 AC-FT 798

e Estimated

COLORADO RIVER BASIN

09404343 TRUXTON WASH NEAR VALENTINE, AZ

LOCATION--Lat 35° 23'03", long 113° 39'25", in SE1/4NE1/4NW1/4, sec. 15, T.23 N., R.13 W., Mohave County, Hydrologic Unit 15010007, on the Hualapai Reservation, just southwest of Valentine, south of old Route 66, 29 mi east of Kingman and 20 mi west of Peach Springs.

DRAINAGE AREA--380.3 mi².

PERIOD OF RECORD--Mar. 1993 to current year.

GAGE--Water-stage recorder. Elevation of gage is 3,770 ft above sea level, from topographic map.

REMARKS--Records poor. Numerous small stock ponds located upstream with a combined capacity of less than 1,500 acre ft. Several minor diversions.

EXTREMES OUTSIDE CURRENT PERIOD--Maximum discharge July or Aug. 1904, 49,000 ft³/s estimated in Truxton Canyon approximately 12 mi upstream, see WSP 147.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 7,430 ft³/s, Sept. 11, 1999, gage height, 14.07 ft., from floodmark; minimum daily discharge, no flow for many days.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 55 ft³/s, Sept. 8, gage height, 4.09 ft, from floodmark. Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.1
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e2.5
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.7	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e3.5	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.20	0.00	5.60
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.168	0.000	0.187
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.5	0.00	3.1
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10	0.00	11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2002, BY WATER YEAR (WY)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		
MEAN	0.286	0.272	0.361	1.109	1.482	2.076	0.429	0.367	0.693	2.508	2.012	2.786
MAX	0.77	0.76	0.81	7.09	11.1	16.1	1.26	1.12	3.17	14.3	7.08	21.6
(WY)	1994	1996	1994	1995	1995	1995	1993	1993	2000	1999	2001	1999
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.000	0.006
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2000	2002	2001

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1993 - 2002
ANNUAL TOTAL	272.12	10.80	
ANNUAL MEAN	0.746	0.030	1.228
HIGHEST ANNUAL MEAN			3.37
LOWEST ANNUAL MEAN			0.030
HIGHEST DAILY MEAN	136	Aug 12	283
LOWEST DAILY MEAN	0.00	Apr 26	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 7	0.00
ANNUAL RUNOFF (AC-FT)	540	21	889
10 PERCENT EXCEEDS	0.10	0.00	0.90
50 PERCENT EXCEEDS	0.00	0.00	0.17
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

VIRGIN RIVER BASIN

09413700 VIRGIN RIVER ABOVE THE NARROWS NEAR LITTLEFIELD, AZ

LOCATION.--Lat 36° 55' 16", long 113° 49' 52", in NE1/4SE1/4sec. 29, T.41 N., R.14 W., Mohave County, Hydrologic Unit 15010010, on right bank, 50 ft east of edge of roadway of I-15, 225 ft south of mile marker 15, 6.8 mi upstream from Littlefield, and 43 mi upstream from Lake Mead.

DRAINAGE AREA.--4,415 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1998 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,000 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. See schematic diagram of Colorado River Basin.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 1, 1989, 61,000 ft³/s, on basis of slope-area measurement of peak flow at site about 1 mi downstream, owing to failure of Quail Creek Dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 1,220 ft³/s, Sept. 7, gage height, 9.78 ft. Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	58	107	111	e57	55	32	40	3.5	0.42	5.0	0.75
2	33	62	101	100	e77	73	28	28	0.94	0.35	0.58	0.23
3	28	68	107	136	e75	61	26	28	0.05	0.76	1.1	1.9
4	30	59	96	97	e81	58	26	12	6.0	1.2	1.7	0.00
5	32	73	104	95	e73	58	22	13	6.2	2.2	4.3	0.00
6	28	74	95	95	e74	78	17	11	7.7	0.18	4.6	0.18
7	44	58	99	93	e74	63	21	18	4.2	0.14	0.69	311
8	67	59	99	96	e75	52	31	15	3.1	0.76	1.4	186
9	54	51	101	92	e65	46	27	8.8	0.11	0.03	0.21	284
10	67	57	97	100	e59	53	31	12	1.0	0.19	0.33	98
11	34	57	107	87	e48	46	31	8.5	0.85	0.00	0.25	92
12	41	83	108	89	e46	40	27	14	0.77	0.59	0.00	106
13	51	52	105	99	e39	45	21	8.1	1.2	0.02	0.02	91
14	47	69	105	93	e44	52	23	12	0.98	0.07	0.00	63
15	62	79	111	72	e39	42	22	9.4	0.69	0.00	0.13	51
16	85	77	108	67	e44	49	43	10	0.00	0.00	0.00	40
17	57	70	105	72	e47	56	39	12	0.00	0.14	0.00	48
18	70	79	102	91	e46	54	44	8.7	0.02	0.05	0.00	26
19	61	86	110	94	e54	42	40	5.8	0.23	1.5	0.00	27
20	68	80	111	91	e56	47	39	7.3	0.05	3.1	0.00	30
21	73	71	114	97	39	49	30	7.2	0.00	2.3	0.00	24
22	93	92	114	94	59	45	31	5.3	0.36	5.1	0.00	22
23	71	79	114	e74	70	39	37	16	0.56	1.9	0.00	16
24	62	83	120	e68	51	32	34	7.7	1.3	4.6	0.00	23
25	68	110	148	e67	43	50	31	5.5	1.9	82	0.00	15
26	64	113	151	e75	40	54	26	1.5	0.33	78	0.00	20
27	47	100	151	e75	41	44	48	3.3	0.00	20	0.08	24
28	49	107	157	e81	43	39	62	15	0.00	3.9	0.00	19
29	71	98	164	e79	---	42	55	7.3	0.01	6.7	0.00	18
30	60	107	183	e73	---	42	48	4.0	0.34	1.6	0.00	80
31	52	---	151	e69	---	41	---	3.3	---	8.5	0.76	---
TOTAL	1706	2311	3645	2722	1559	1547	992	357.7	42.39	226.30	21.15	1717.06
MEAN	55.03	77.03	117.6	87.81	55.68	49.90	33.07	11.54	1.413	7.300	0.682	57.24
MAX	93	113	183	136	81	78	62	40	7.7	82	5.0	311
MIN	28	51	95	67	39	32	17	1.5	0.00	0.00	0.00	0.00
AC-FT	3380	4580	7230	5400	3090	3070	1970	709	84	449	42	3410

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2002, BY WATER YEAR (WY)

	1998	1999	2000	2001	2002	2002	2002	2002	2002	2002	2002	2001
MEAN	92.48	117.9	126.3	114.8	126.6	120.6	136.2	95.46	17.15	59.85	42.37	114.3
MAX	145	212	216	172	180	194	209	162	49.3	153	81.5	376
(WY)	1999	1999	1999	1999	1999	2000	2001	2001	1999	1998	1999	1998
MIN	55.0	77.0	85.2	87.8	55.7	49.9	33.1	11.5	1.41	7.30	0.68	27.8
(WY)	2002	2002	2000	2002	2002	2002	2002	2002	2002	2002	2002	2001

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	FOR 2002 WATER YEAR	WATER YEARS 1998 - 2002
ANNUAL TOTAL	32879.93	16846.60		
ANNUAL MEAN	90.08	46.16		89.25
HIGHEST ANNUAL MEAN				128 1999
LOWEST ANNUAL MEAN				46.2 2002
HIGHEST DAILY MEAN	359 Mar 10	311 Sep 7		2600 Sep 12 1998
LOWEST DAILY MEAN	0.00 Jun 21	0.00 Jun 16		0.00 Jun 21 2001
ANNUAL SEVEN-DAY MINIMUM	0.00 Jun 28	0.00 Aug 16		0.00 Jun 28 2001
MAXIMUM PEAK FLOW		1220 Sep 7		61000 Jan 1 1989
MAXIMUM PEAK STAGE		9.78 Sep 7		
ANNUAL RUNOFF (AC-FT)	65220	33420		64660
10 PERCENT EXCEEDS	197	100		203
50 PERCENT EXCEEDS	85	42		73
90 PERCENT EXCEEDS	10	0.10		5.1

e Estimated

VIRGIN RIVER BASIN
09413700 VIRGIN RIVER ABOVE THE NARROWS NEAR LITTLEFIELD, AZ—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1998 to current year.

REMARKS.--In June 1998, station was established in cooperation with the Southern Nevada Water Authority to characterize the hydraulics and water quality of the Virgin River Basin.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample type	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
OCT									
01...	1000	ENVIRONMENTAL	37	710	8.8	103	8.5	3230	19.0
DEC									
03...	0900	ENVIRONMENTAL	114	707	11.3	141	8.3	2790	22.0
APR									
23...	0830	ENVIRONMENTAL	38	710	9.3	98	8.3	3470	14.0
SEP									
23...	0930	ENVIRONMENTAL	18	709	8.6	98	8.4	3460	17.5

VIRGIN RIVER BASIN

09415000 VIRGIN RIVER AT LITTLEFIELD, AZ

LOCATION--Lat 36° 53' 30", long 113° 55' 25", in SW_{1/4} SW_{1/4}, sec. 4, T.40 N., R.15 W., Mohave County, Hydrologic Unit 15010010, on right bank, 0.5 mi downstream from Beaver Dam Wash, 0.4 mi upstream from Littlefield, and 36 mi upstream from Lake Mead.

DRAINAGE AREA--5,090 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD--October 1929 to current year.

REVISED RECORDS--WSP 959: 1932. WSP 979: 1930-31, 1933-37. WSP 1313: 1940 (M).

GAGE--Water-stage recorder. Datum of gage is 1,763.68 ft above sea level. Prior to May 28, 1933, nonrecording gage at site 300 ft upstream, and May 28, 1933, to Nov. 7, 1939, at same site, both at datum 2.53 ft higher. Nov. 8, 1939, to Mar. 31, 1942, nonrecording gage at same site at datum 2.00 ft higher. Apr. 1, 1942, to Sept. 30, 1970, water-stage recorder at same site at same datum. Oct. 1, 1970, to Aug. 7, 1979, at site 300 ft upstream at same datum.

REMARKS--Records fair except for estimated daily discharges, which are poor. See schematic diagram of Colorado River Basin.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 61,000 ft³/s, January 1, 1989, gage height, 22.37 ft, due to failure of Quail Creek Dam; minimum daily, 40, ft³/s August 6, 1966.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 3,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 7.....	1130	*1,700	*6.64

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	99	113	161	160	115	101	107	107	57	52	61	52
2	96	109	151	142	134	129	107	87	53	54	54	53
3	88	119	157	184	132	108	109	92	52	53	54	54
4	93	104	147	142	138	104	109	74	56	51	53	50
5	95	122	155	141	127	100	101	73	60	56	56	51
6	89	126	143	137	128	126	96	69	62	52	59	52
7	109	107	147	133	128	136	95	76	58	52	51	538
8	138	107	144	138	130	112	105	76	52	54	51	332
9	123	99	149	135	119	108	101	66	50	53	50	470
10	138	100	144	147	114	107	101	68	49	53	50	188
11	107	105	155	128	104	100	102	66	51	54	48	248
12	106	132	161	129	101	92	98	69	50	54	47	183
13	119	136	154	144	94	97	88	67	51	55	47	175
14	119	118	156	136	97	102	89	70	52	53	47	129
15	123	128	171	137	92	99	86	70	51	53	47	107
16	148	132	168	131	97	100	106	67	50	54	46	95
17	112	117	160	140	100	115	106	69	49	55	47	102
18	121	127	157	132	99	115	108	63	50	56	46	81
19	115	137	163	130	106	102	104	54	50	57	47	74
20	115	137	168	133	109	105	100	58	51	58	47	80
21	e120	118	174	139	108	106	97	60	49	59	48	70
22	139	143	174	138	103	103	92	59	51	61	48	71
23	137	125	178	134	94	97	93	71	52	59	48	61
24	119	131	182	128	95	98	92	63	53	61	48	69
25	124	163	206	127	93	121	85	61	54	144	47	60
26	117	166	209	135	89	137	80	55	51	186	48	61
27	99	151	209	132	91	118	108	54	49	91	49	71
28	95	156	212	138	94	108	123	69	49	62	49	65
29	127	149	217	136	---	114	124	61	50	60	49	63
30	116	162	234	130	---	117	115	57	50	56	50	133
31	106	---	211	126	---	115	---	55	---	62	51	---
TOTAL	3552	3839	5317	4262	3031	3392	3027	2106	1562	1980	1543	3838
MEAN	114.6	128.0	171.5	137.5	108.2	109.4	100.9	67.94	52.07	63.87	49.77	127.9
MAX	148	166	234	184	138	137	124	107	62	186	61	538
MIN	88	99	143	126	89	92	80	54	49	51	46	50
MED	116	127	161	136	103	107	101	67	51	55	48	72
AC-FT	7050	7610	10550	8450	6010	6730	6000	4180	3100	3930	3060	7610

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2002, BY WATER YEAR (WY)

	MEAN	148.3	191.1	223.5	235.4	317.1	362.4	402.5	417.0	140.4	107.7	174.4	152.9
MAX (WY)	602	552	1247	775	2330	1805	1385	2122	1119	381	976	737	
MIN (WY)	53.4	101	111	108	108	85.4	61.6	49.9	46.8	51.6	49.8	53.3	
(WY)	1965	1991	1964	1964	2002	1977	1934	1990	1964	1965	2002	1964	

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1930 - 2002
ANNUAL TOTAL	52201	37449	
ANNUAL MEAN	143.0	102.6	239.0
HIGHEST ANNUAL MEAN			697
LOWEST ANNUAL MEAN			100
HIGHEST DAILY MEAN	331	Apr 29	538
LOWEST DAILY MEAN	43	Jul 24	46
ANNUAL SEVEN-DAY MINIMUM	46	Jul 23	47
MAXIMUM PEAK FLOW			1700
MAXIMUM PEAK STAGE			6.64
ANNUAL RUNOFF (AC-FT)	103500	74280	61000
10 PERCENT EXCEEDS	240	155	419
50 PERCENT EXCEEDS	141	101	147
90 PERCENT EXCEEDS	68	51	62

e Estimated

VIRGIN RIVER BASIN

09415000 VIRGIN RIVER AT LITTLEFIELD, AZ—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948 to current year.

PERIOD OF DAILY RECORD.--

CHEMICAL ANALYSES: July 1949 to September 1969.

SPECIFIC CONDUCTANCE: October 1947 to March 1988.

WATER TEMPERATURE: October 1947 to March 1988.

SEDIMENT DATA: October 1947 to September 1968, October 1992 to September 1995.

REMARKS.--Data was collected in cooperation with the Southern Nevada Water Authority to characterize the hydraulics and water quality of the Virgin River Basin and to establish information on chemical loading into Lake Mead. Streamflow is not completely homogenous chemically from bank to bank. Flow adjacent to north (right) bank is generally more dilute than average, particularly at times of low streamflow; monthly data collected during June 1975–September 1976 indicate that specific conductance off north bank was 93 to 100 percent of streamwide average (range of discharge, 60–230 ft³/s). Water temperature characteristically shows little or no variation from bank to bank. Detailed sampling information for period since June 1975 is available from U.S. Geological Survey, Carson City, NV.

EXTREMES MEASURED FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 4,650 microsiemens/cm, Aug. 21, 1966; minimum, 615 microsiemens/cm, May 27, 28, 30, 31, 1983.

WATER TEMPERATURE: Maximum, 33.5° C, July 7, 1953; minimum, 2.0° C Jan. 4, 1949; January 4, 1950; Jan. 4, 5, 1971.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TURBIDITY LAB HACH 2100AN (NTU) (99872)	UV ABSORBANCE 254 NM, WTR FLT (UNITS) /CM (50624)	UV ABSORBANCE 280 NM, WTR FLT (UNITS) /CM (61726)	BARO-METRIC PRES-SURE OF HG (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	PH WATER FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)		
NOV 27...	1015	ENVIRONMENTAL	163	63	.032	.022	714	10.3	101	7.8	2880	11.2	246		
FEB 27...	1000	ENVIRONMENTAL	92	9.3	.026	.020	717	8.5	88	7.8	3200	13.5	283		
MAY 20...	0845	ENVIRONMENTAL	67	5.1	.009	.006	709	9.3	115	7.8	3140	21.5	336		
AUG 27...	0930	ENVIRONMENTAL	50	2.5	.008	.006	709	8.4	103	7.8	3130	21.4	353		
Date			MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS LAB CACO3 (MG/L) (29801)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	BICAR-BONATE WATER DIS IT (MG/L AS HCO3) (00453)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE AT 180 DEG. C DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L AS N) (70301)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00608)
NOV 27...			75.0	22.9	257	273	260	317	354	.8	18.4	792	2050	1940	E.03
FEB 27...			86.7	23.8	269	299	287	350	394	.9	17.1	979	2410	2240	.05
MAY 20...			101	25.9	248	273	283	345	339	1.0	16.6	989	2350	2230	.06
AUG 27...			101	25.2	247	245	260	307	352	1.0	20.8	1000	2430	2260	<.04
Date			NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, PAR TICULTE WAT FLT SUSP (MG/L AS N) (49570)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	CARBON, INORG + ORGANIC PARTIC. (MG/L AS C) (00694)	CARBON, INOR-GANIC, PARTIC. (MG/L AS C) (00688)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	E COLI, MTEC MF (COL/100 ML) (31633)
NOV 27...			E.09	.47	1.08	E.006	.18	E.04	.04	.21	6.4	2.4	1.5	4.0	130
FEB 27...			.12	.21	.76	E.007	.04	.11	.11	.15	1.1	<.1	1.3	1.1	79
MAY 20...			<.10	.31	E.03	<.008	.27	<.06	<.02	E.03	2.4	<.1	.7	2.4	120
AUG 27...			<.10	.10	.13	<.008	.04	<.06	<.02	<.06	.4	<.1	.7	.4	42

09415000 VIRGIN RIVER AT LITTLEFIELD, AZ-CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	COLI-FORM, FECCAL, 0.7 UM-MF (COLS./100 ML) (31625)	FECAL STREP, KF STRP (COL/100 ML) (31673)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM, DIS-SOLVED (UG/L AS LI) (01130)	SELENIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRONTIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANADIUM, DIS-SOLVED (UG/L AS V) (01085)	2,4,5-T DIS-SOLVED (UG/L) (39742)	2,4-D, DIS-SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, REC (UG/L) (38746)	2,6-DI-ETHYL ANILINE, WAT FLT GF, REC (UG/L) (82660)
NOV 27...	191	847	7.5	756	<10	303	1.1	3170	1.5	<.07	<.16	<.25	<.002
FEB 27...	20	220	9.0	959	<10	427	<.7	3860	4.1	<.07	<.16	<.25	<.006
MAY 20...	43	128	7.5	911	<30	421	2.8	3720	2.0	<.07	<.16	<.25	<.006
AUG 27...	96	289	8.0	841	<30	413	2.8	3740	2.5	<.07	<.16	<.25	<.006
Date	3HYDRXY CARBO-FURAN, WAT, FLT GF 0.7U REC (UG/L) (49308)	ACETO-CHLOR, WATER, FLTRD REC (UG/L) (49260)	UORFEN, WATER, FLTRD REC (UG/L) (49315)	ALA-CHLOR, WATER, DISS, REC (UG/L) (46342)	ALDI-CARB SULFONE, WAT, FLT GF 0.7U REC (UG/L) (49313)	ALDICA-FOXIDE, WAT, FLT GF 0.7U REC (UG/L) (49314)	ALDI-CARB, WATER, FLTRD REC (UG/L) (49312)	ALPHA BHC, WATER, DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	^a BDMC, SURROG, UNFLTRD REC PERCENT (99835)	FLUR-ALIN, WAT FLD GF, REC (UG/L) (82673)	BEN-ZON, WATER, FLTRD, REC (UG/L) (38711)	BRO-MACIL, WATER, DISS, REC (UG/L) (04029)
NOV 27...	<.11	<.004	<.05	<.002	<.20	<.27	<.21	<.005	<.007	91.4	<.010	<.05	<.14
FEB 27...	<.11	<.006	<.05	<.004	<.20	<.27	<.21	<.005	<.007	95.0	<.010	<.05	<.10
MAY 20...	<.11	<.006	<.05	<.004	<.20	<.27	<.21	<.005	<.007	78.1	<.010	<.05	<.09
AUG 27...	<.11	<.006	<.05	<.004	<.20	<.27	<.21	<.005	<.007	73.7	<.010	<.05	<.09
Date	BRO-MOXYNIL, WATER, FLTRD, GF 0.7U REC (UG/L) (49311)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL, WATER, FLTRD REC (UG/L) (49310)	CAR-BARYL, WATER, GF, REC (UG/L) (82680)	CARBO-FURAN, WATER, FLTRD REC (UG/L) (49309)	CARBO-FURAN, WATER, FLTRD GF, REC (UG/L) (82674)	CHLOR-AM BEN, METHYL ESTER, WATER, FLTRD (UG/L) (61188)	CHLORO-THALO-NIL, WAT, FLT GF 0.7U REC (UG/L) (49306)	CHLOR-PYRIFOS, DIS-SOLVED (UG/L) (38933)	CLOPYR-ALID, WATER, FLTRD, REC (UG/L) (49305)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DACTHAL-MONO-ACID, WAT, FLT GF 0.7U REC (UG/L) (49304)	DCPA, WATER, FLTRD GF, REC (UG/L) (82682)
NOV 27...	<.07	<.002	<.080	<.041	<.15	<.020	<.21	<.25	<.005	<.42	<.018	<.07	<.003
FEB 27...	<.07	<.002	<.080	<.041	<.15	<.020	<.21	<.25	<.005	<.42	<.018	<.16	<.003
MAY 20...	<.07	<.002	<.080	<.041	<.15	<.020	<.21	<.25	<.005	<.42	<.018	<.07	<.003
AUG 27...	<.07	<.002	<.080	<.041	<.15	<.020	<.21	<.25	<.005	<.42	<.018	<.07	<.003
Date	DEETHYL-ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	^a DIAZ-INON, D10 SRG WAT FLT GF, REC PERCENT (91063)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DICAMBA, WATER, FLTRD REC (UG/L) (38442)	DICHLO-BENIL, WATER, FLTRD GF 0.7U REC (UG/L) (49303)	DICHLOR PROP, WATER, FLTRD GF 0.7U REC (UG/L) (49302)	DI-ELDRIN, DIS-SOLVED (UG/L) (39381)	DINOSEB, WATER, FLTRD GF 0.7U REC (UG/L) (49301)	DISUL-FOTON, WATER, FLTRD GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD GF 0.7U REC (UG/L) (49300)	DNOC, WAT, FLT GF 0.7U REC (UG/L) (49299)	EPTC, WATER, FLTRD GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN, WAT FLT GF, REC (UG/L) (82663)
NOV 27...	<.006	95.7	.008	<.11	<.09	<.12	<.005	<.09	<.02	<.12	<.25	<.002	<.009
FEB 27...	<.006	119	.009	<.11	<.09	<.12	<.005	<.09	<.02	<.12	<.25	<.002	<.009
MAY 20...	<.006	103	E.003	<.11	<.09	<.12	<.005	<.14	<.02	<.12	<.25	<.002	<.009
AUG 27...	<.006	126	<.005	<.11	<.09	<.12	<.005	<.15	<.02	<.12	<.25	<.002	<.009
Date	ETHO-PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (82672)	FEN-URON, WATER, FLTRD REC (UG/L) (49297)	FLUO-METURON, WATER, FLTRD REC (UG/L) (38811)	FONOFOS, WATER, DISS REC (UG/L) (04095)	^a HCH ALPHA D6 SRG, WAT FLT GF, REC PERCENT (91065)	LINDANE, DIS-SOLVED (UG/L) (39341)	LINURON, WATER, FLTRD REC (UG/L) (38478)	LIN-URON, WATER, FLTRD GF 0.7U REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	MCPA, WATER, FLTRD REC (UG/L) (38482)	MCPB, WATER, FLTRD REC (UG/L) (38487)	METHIO-CARB, WATER, FLTRD, REC (UG/L) (38501)	METH-OMYL, WATER, FLTRD, REC (UG/L) (49296)
NOV 27...	<.005	<.17	<.06	<.003	87.2	<.004	<.06	<.035	<.027	<.33	<.26	<.07	<.22
FEB 27...	<.005	<.07	<.06	<.003	95.5	<.004	<.06	<.035	<.027	<.20	<.26	<.07	<.38
MAY 20...	<.005	<.07	<.06	<.003	95.3	<.004	<.06	<.035	<.027	<.20	<.26	<.07	<.22
AUG 27...	<.005	<.07	<.06	<.003	95.9	<.004	<.06	<.035	<.027	<.20	<.26	<.07	<.22

VIRGIN RIVER BASIN

09415000 VIRGIN RIVER AT LITTLEFIELD, AZ-CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	NEB-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NORFLUR AZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORY-ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS- SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)
NOV 27...	<.050	<.006	<.013	<.006	<.002	<.007	<.07	<.04	<.28	<.16	<.003	<.007	<.002
FEB 27...	<.050	<.006	<.013	<.006	<.002	<.007	<.07	<.04	<.28	<.16	<.003	<.010	<.004
MAY 20...	<.050	<.006	<.013	<.006	<.002	<.007	<.07	<.04	<.28	<.16	<.003	<.010	<.004
AUG 27...	<.050	<.006	<.013	<.006	<.002	<.007	<.07	<.04	<.28	<.16	<.003	<.010	<.004
Date	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PIC-LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, FLTRD, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	SILVEX, DIS- SOLVED (UG/L) (39762)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)
NOV 27...	<.010	<.006	<.011	<.09	M	<.004	<.010	<.011	<.02	<.22	<.12	<.03	<.011
FEB 27...	<.022	<.006	<.011	<.09	<.01	<.004	<.010	<.011	<.02	<.22	<.23	<.03	<.005
MAY 20...	<.022	<.006	<.011	<.09	<.01	<.004	<.010	<.011	<.02	<.22	<.12	<.03	<.005
AUG 27...	<.022	<.006	<.011	<.09	<.01	<.004	<.010	<.011	<.02	<.22	<.12	<.03	<.005
Date	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUPOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	SED-SUSP. MENT, DIAM. CHARGE, SUS- PENDE (MG/L) (80154)	SED-SIEVE THAN .062 MM (T/DAY) (70331)	SEDI-DIS- CHARGE, SUS- PENDE (80155)			
NOV 27...	<.02	<.034	<.02	<.005	<.002	<.07	<.009	--	--	--			
FEB 27...	<.02	<.034	<.02	<.005	<.002	<.07	<.009	63	23	15.6			
MAY 20...	<.02	<.034	<.02	<.005	<.002	<.07	<.009	62	48	11.2			
AUG 27...	<.02	<.034	<.02	<.005	<.002	<.07	<.009	23	21	3.1			

Remark Codes Used in This report:

- < -- Less than
- E -- Estimated (see introductory text section titled "Long-Term Method Detection Levels and Laboratory Reporting Levels").
- M -- Presence verified, not quantified

^a Listed values are recovery percentages for the indicated compounds. These compounds are added to the sample to determine the relative recovery of other organic compounds that are detected using the same analytical methods.

09421000 LAKE MEAD AT HOOVER DAM, AZ-NV

LOCATION--Lat 36° 00'58", long 114° 44'13", in NE 1/4SW 1/4sec. 3, T.30 N., R.23 W., Gila and Salt River meridian, Mohave-Clark Counties, Hydrologic Unit 15010005, in center of Hoover Dam on Colorado River.

DRAINAGE AREA--171,700 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing (previously considered part of the Missouri River basin).

RESERVOIR-CONTENTS RECORDS

PERIOD OF RECORD--Contents: February 1935 to current year. Diversions (monthly totals only): to Boulder City area, since October 1935; to Henderson and Las Vegas areas, since April 1942; combined diversions since October 1968. Prior to 1946 published as "at Boulder Dam."

REVISED RECORDS--WSP 899: 1935-39.

GAGE--Water-stage indicator read once daily at midnight, with supplementary water-stage recorder. Datum of gage is 0.00 ft to Local Powerhouse datum.

REMARKS--Reservoir is formed by concrete arch-gravity dam; storage began Feb. 1, 1935; dam completed Mar. 1, 1936. Total capacity (based on 1963-64 resurvey by Coast and Geodetic Survey; capacity table put into use Apr. 1, 1967), 29,755,000 acre-ft, consisting of the following: Dead storage, 2,378,000 acre-ft below gage height 895.0-ft gate sills in outlet towers; usable contents, 26,159,000 acre-ft between gage heights 895.0 ft and 1,221.4 ft (top of automatic spillway gates in raised position); uncontrolled storage, 1,218,000 acre-ft between gage heights 1,221.4 ft and 1,229.0 ft (maximum water surface). Reservoir is used to store water for flood control, irrigation, municipal water supply, power development, and recreation. Figures given herein represent usable contents.

DIVERSIONS FROM LAKE MEAD--Diversions to Boulder City area at dam; diversions to Henderson and Las Vegas areas from intakes 6 mi upstream. Diversions measured by Venturi meters. Water used for municipal and industrial purposes.

COOPERATION--Records of gage height and contents furnished by Bureau of Reclamation. Records of diversions from Lake Mead furnished by Bureau of Reclamation and Colorado River Commission of Nevada.

EXTREMES FOR PERIOD OF RECORD--Maximum contents, 27,790,000 acre-ft, July 29, 30, 1941 (on basis of original bathymetry), gage height, 1,220.45 ft; maximum gage height, 1,225.85 ft, July 24, 1983 (equivalent to 26,868,000 acre-ft on basis of resurveyed bathymetry of 1963-64); minimum contents (since 1940), 10,695,000 acre-ft, Apr. 26, 1956, gage height, 1,083.21 ft.

EXTREMES FOR CURRENT YEAR--Maximum contents, 19,923,000 acre-ft, Nov. 13, gage height 1,178.34 ft; minimum, 17,209,000 acre-ft, Sept. 30, gage height, 1,155.42 ft.

RESERVOIR STORAGE, IN THOUSANDS OF ACRE FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19862	19881	19777	19786	19873	19670	19089	18529	17909	17511	17338	17200
2	19857	19883	19777	19792	19875	19656	19066	18513	17909	17502	17338	17204
3	19840	19890	19777	19805	19879	19647	19042	18492	17897	17496	17338	17195
4	19837	19896	19785	19805	19875	19627	19027	18478	17889	17505	17344	17172
5	19832	19895	19784	19818	19861	19609	19012	18466	17868	17512	17344	17175
6	19837	19896	19781	19826	19856	19589	19005	18449	17849	17518	17337	17171
7	19841	19896	19777	19833	19850	19558	18994	18426	17830	17517	17335	17166
8	19843	19885	19781	19835	19852	19549	18981	18406	17833	17525	17328	17166
9	19844	19892	19795	19832	19848	19546	18968	18380	17837	17515	17318	17165
10	19839	19902	19798	19841	19839	19540	18944	18356	17828	17486	17320	17161
11	19845	19912	19793	19843	19833	19511	18923	18355	17816	17484	17319	17150
12	19837	19908	19789	19844	19832	19493	18900	18341	17803	17474	17313	17145
13	19850	19923	19788	19852	19822	19467	18881	18321	17789	17474	17304	17147
14	19857	19921	19782	19857	19823	19440	18867	18295	17771	17469	17295	17147
15	19856	19906	19785	19853	19819	19420	18850	18272	17771	17465	17288	17138
16	19858	19891	19794	19853	19822	19395	18827	18248	17765	17460	17283	17130
17	19852	19882	19786	19857	19816	19381	18806	18228	17744	17452	17290	17134
18	19851	19874	19789	19857	19820	19350	18795	18214	17722	17453	17285	17139
19	19854	19860	19781	19860	19812	19335	18773	18197	17708	17451	17285	17135
20	19866	19845	19776	19864	19805	19307	18768	18181	17696	17456	17281	17130
21	19869	19839	19785	19864	19786	19283	18752	18149	17689	17461	17277	17134
22	19873	19851	19789	19865	19776	19259	18730	18119	17684	17454	17266	17130
23	19882	19847	19792	19868	19776	19249	18701	18091	17677	17443	17259	17125
24	19877	19837	19795	19869	19772	19236	18678	18068	17665	17432	17260	17122
25	19879	19832	19795	19866	19751	19216	18652	18048	17640	17408	17263	17108
26	19879	19822	19797	19875	19721	19192	18623	18035	17614	17397	17246	17108
27	19883	19802	19792	19875	19695	19173	18614	18018	17583	17399	17238	17104
28	19888	19789	19782	19877	19682	19150	18593	17988	17563	17399	17223	17107
29	19888	19778	19785	19874	---	19128	18567	17958	17547	17385	17213	17100
30	19891	19776	19792	19869	---	19125	18539	17935	17533	17368	17203	17093
31	19882	---	19795	19870	---	19118	---	17915	---	17343	17209	---
MAX	19891	19923	19798	19877	19879	19670	19089	18529	17909	17525	17344	17204
MIN	19832	19776	19776	19786	19682	19118	18539	17915	17533	17343	17203	17093
*	1178.03	1177.22	1177.37	1177.94	1176.50	1172.11	1167.49	1162.39	1159.19	1157.57	1156.42	1155.42
#	+9000	-106000	+19000	+75000	-188000	-564000	-579000	-624000	-382000	-190000	-134000	-116000
##	43273	32078	27067	26517	25646	34003	41265	47726	46452	49765	49519	42181

CAL YR 2001 MAX 22544 MIN 19776 # -2563000 ## 466603
WTR YR 2002 MAX 19923 MIN 17093 # -2780000 ## 465492

* Gage height, in feet, at end of month.
Change in contents, in acre-feet.
Diversions, in acre-feet.

COLORADO RIVER MAIN STEM

09421500 COLORADO RIVER BELOW HOOPER DAM, AZ-NV

LOCATION--Lat 36° 00'55", long 114° 44'16", in NE 1/4 SW 1/4 sec. 3, T.30 N., R.23 W., Gila and Salt River meridian, or SW1/4 NE1/4 sec. 29, T.22 S., R.65 E., Mount Diablo meridian, Mohave-Clark Counties, Hydrologic Unit 15030101, in powerhouse at downstream side of Hoover Dam.

DRAINAGE AREA--171,700 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing (previously considered part of the Missouri River basin).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD--October 1933 to current year (prior to April 1934, monthly discharge only, published in WSP 1313). Published as "near Willow Beach" 1933-39 and as "below Boulder Dam" 1939-45.

GAGE--Acoustical velocity meters on each turbine in Hoover Dam. Prior to Nov. 1, 1939, water-stage recorder at site 9 mi downstream at datum 594.8 ft above sea level. Nov. 1, 1939, to June 30, 1958, water-stage recorder at site 0.8 mi downstream at datum 600.35 ft above sea level. July 1, 1958, to Nov. 7, 1979, totalizing flowmeter on each turbine.

REMARKS--Flow regulated by Hoover Dam on Lake Mead since Feb. 1, 1935. Many diversions above station for irrigation, industrial, and municipal use. See schematic diagram of Colorado River Basin.

COOPERATION--Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD--Maximum daily discharge, 50,800 ft³/s, July 29, 1983, no flow at Hoover Dam part of Feb. 10, 1935; minimum daily, 152 ft³/s, Feb. 10, 1935.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10400	10700	10000	12500	13400	16300	20300	16400	9720	22200	17500	17800
2	10400	8120	10000	9520	10900	16000	20100	18500	7390	18000	14700	13100
3	11400	5940	9130	10100	11300	14100	19700	19300	11900	14000	11600	16700
4	8160	7660	11300	11600	13800	20500	18800	15900	17500	8520	8280	15200
5	13500	9540	11300	8730	15700	18500	17500	16100	21000	11500	14200	9900
6	6830	10900	15000	10000	11900	17500	13200	17900	20000	9000	15900	11300
7	6790	9810	16100	9990	14000	19100	13100	21100	19400	12500	14500	7400
8	6880	12200	9910	10300	12400	19200	17900	18500	11100	12000	16400	7300
9	9220	8000	8810	10800	9640	13600	16500	22300	11200	18400	17300	12000
10	8220	4530	10400	11200	14800	14300	18600	19700	14400	21100	15700	13100
11	8400	5920	14100	12500	12400	20100	20900	10700	16100	17900	12400	14400
12	8080	8080	12600	10800	11000	19200	22500	16900	18700	20800	17000	13900
13	4090	4500	13800	11600	12700	20300	19200	20800	19400	15100	17500	14500
14	6100	9930	13800	10800	12200	22100	15300	20800	20700	14300	18700	11500
15	9000	16700	11500	12100	11800	20200	18400	20100	13100	13800	15900	12800
16	9130	17000	11500	12000	11800	20600	17300	21800	12500	17200	15700	12400
17	9460	13200	13400	11800	12700	19800	18800	19400	23400	15300	9270	8320
18	10000	15300	13300	12900	9060	20900	19300	17500	19900	17400	13700	7440
19	8450	14100	12900	11100	13600	19400	16600	15600	20500	16900	14200	10600
20	4840	17400	14600	13800	15600	22000	12600	18800	17800	11800	14600	10200
21	6250	13200	13100	10700	19100	21900	17100	21600	14400	7930	14000	7480
22	7450	7080	11200	11100	19000	20500	22400	24200	14000	17300	17400	8130
23	7460	8560	12200	11100	10000	16700	22900	23100	15000	20000	16600	11600
24	7660	11800	10900	12000	13300	17000	20400	22100	18400	19700	13100	9660
25	8070	13300	11200	13300	20400	20600	23600	18400	24000	23400	12200	12800
26	9840	14100	12600	9580	22300	20100	22300	14000	23800	20000	20800	9400
27	7530	18400	15200	10300	22800	19800	12200	16300	25400	12500	18500	7070
28	7230	14800	15100	11900	17900	21000	21200	23900	22700	12000	19800	8390
29	9720	14400	12600	13100	---	19200	21200	22900	20700	21300	18700	9010
30	9750	11100	12800	14400	---	15400	20700	18600	18000	21700	19200	11500
31	9650	---	11600	12300	---	12200	---	16800	---	24100	11100	---
TOTAL	259960	336270	381950	353920	395500	578100	560600	590000	522110	507650	476450	334900
MEAN	8386	11210	12320	11420	14120	18650	18690	19030	17400	16380	15370	11160
MAX	13500	18400	16100	14400	22800	22100	23600	24200	25400	24100	20800	17800
MIN	4090	4500	8810	8730	9060	12200	12200	10700	7390	7930	8280	7070
AC-FT	515600	667000	757600	702000	784500	1147000	1112000	1170000	1036000	1007000	945000	664300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2002, BY WATER YEAR (WY)

MEAN	11720	11620	12030	12300	12690	14890	16070	16310	15770	15660	15180	13330
MAX	34250	30530	33670	32700	30680	28790	26290	33330	34890	41870	39390	36750
(WY)	1984	1942	1942	1942	1984	1984	1984	1986	1984	1983	1983	1983
MIN	3109	3519	4444	3540	1106	5474	7297	8898	9786	10880	9961	6619
(WY)	1935	1935	1935	1979	1993	1993	1935	1937	1940	1937	1936	1982

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1935 - 2002

ANNUAL TOTAL		5147040		5297410			
ANNUAL MEAN		14100		14510			13970
HIGHEST ANNUAL MEAN							30590
LOWEST ANNUAL MEAN							7674
HIGHEST DAILY MEAN		27100		Jul 13		25400	Jun 27
LOWEST DAILY MEAN		4090		Oct 13		4090	Oct 13
ANNUAL SEVEN-DAY MINIMUM		6440		Jan 19		7170	Oct 19
ANNUAL RUNOFF (AC-FT)		10210000				10510000	10120000
10 PERCENT EXCEEDS		20800				20800	21700
50 PERCENT EXCEEDS		13900				13900	13400
90 PERCENT EXCEEDS		8070				8400	6610

COLORADO RIVER MAIN STEM

09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD --Water years 1940 to current year.

PERIOD OF DAILY RECORD --

CHEMICAL ANALYSES: Oct. 1939 to Sept. 1944, Oct. 1950 to Sept. 1957, Oct. 1967 to Mar. 1970.

SPECIFIC CONDUCTANCE: Oct. 1939 to July 1957, Oct. 1977 to Sept. 1987.

WATER TEMPERATURE: Oct. 1941 to July 1957, Oct. 1977 to Sept. 1987.

REMARKS--Samples collected at gaging station 0.3 mi downstream from Hoover Dam. Unpublished chemical analyses for period Oct. 1939 to Sept. 1940 available from the U.S. Geological Survey in Tucson, AZ. Quality-assurance samples are defined in the introductory text section titled "Water Quality-Control Data."

COOPERATION --Instantaneous-discharge data provided by Bureau of Reclamation, Boulder City, NV.

EXTREMES MEASURED FOR PERIOD OF DAILY RECORD SINCE OCTOBER 1977.--

SPECIFIC CONDUCTANCE: Maximum, 1,180 microsiemens/cm, June 10, 1980; minimum, 787 microsiemens/cm, Apr. 20, 1987.

WATER TEMPERATURE: Maximum, 21.5°C, July 23, 1983; minimum, 9.0°C, Jan. 10, 1978.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TURBIDITY LAB HACH 2100AN (NTU) (99872)	UV ABSORB-ANCE 254 NM, WTR FLT (UNITS /CM) (50624)	UV ABSORB-ANCE 280 NM, WTR FLT (UNITS /CM) (61726)	BARO-METRIC PRES-SURE (MM HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)		
DEC 04...	1030	ENVIRONMENTAL	7320	1.2	.045	.030	741	6.6	66	8.0	910	13.7	65.8		
FEB 22...	0900	ENVIRONMENTAL	30600	4.9	.055	.039	752	8.8	83	7.9	935	11.9	68.1		
MAY 23...	1000	ENVIRONMENTAL	30200	4.9	.039	.025	739	8.5	82	7.8	923	12.0	72.3		
AUG 29...	1015	ENVIRONMENTAL	15500	1.8	.043	.028	739	7.2	71	7.8	946	13.0	71.1		
Date			MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	ALKA-LINITY WAT DIS TOT IT FIELD CACO3 (MG/L AS) (39086)	BICAR-BONATE WATER DIS IT HCO3 (MG/L AS) (00453)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, RESIDUE AT 180 DEG. C SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
DEC 04...	24.3	3.90	75.1	137	129	157	69.6	.3	8.56	219	596	551	<.04		
FEB 22...	25.5	4.02	81.1	137	130	156	70.6	.4	8.55	224	600	568	<.04		
MAY 23...	25.8	4.02	80.8	137	122	149	71.9	.2	9.01	221	596	561	<.04		
AUG 29...	24.9	3.94	81.6	138	126	153	70.9	.3	8.73	222	607	559	<.04		
Date			NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, AM-MONIA + ORGANIC (MG/L AS N) (00625)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, PAR TICULTE WAT FLT SUSP (MG/L AS N) (49570)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	CARBON, INORG + ORGANIC PARTIC. (MG/L AS C) (00694)	CARBON, INOR-GANIC, PARTIC. (MG/L AS C) (00688)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)
DEC 04...	.11	.14	.35	<.008	.03	<.004	<.007	E.003	<.1	<.1	2.5	<.1	<.1		
FEB 22...	.13	.16	.44	<.008	<.02	.005	<.007	.006	<.1	<.1	2.5	<.1	<.1		
MAY 23...	.12	.11	.35	<.008	<.02	E.004	<.007	.005	<.1	<.1	2.4	<.1	<.1		
AUG 29...	.14	.15	.33	E.004	<.02	E.002	<.007	.004	.2	<.1	5.2	.2	<.1		

COLORADO RIVER MAIN STEM
09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS-SOLVED (UG/L AS MN) (01056)
DEC 04...	.19	2.3	89	<.06	105	<.04	<.8	.12	1.7	<10	<.08	38.3	.3
FEB 22...	.16	2.8	77	<.06	108	<.04	<.8	.11	1.7	<10	.10	38.3	.3
MAY 23...	.29	2.8	103	<.06	112	E.02	<.8	.18	1.8	<10	<.08	37.5	<.1
AUG 29...	.25	2.5	104	<.06	106	<.04	<.8	.16	2.5	<10	<.08	36.8	.6
Date	MOLYB- DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	2,4,5-T DIS-SOLVED (UG/L AS CO) (39742)	2,4-D, DIS-SOLVED (UG/L AS CU) (39732)	2,6-DI- ETHYL WATER, FLTRD, GF 0.7U REC (38746)	3HYDRXY CARBO- FURAN WAT,FLT GF 0.7U REC (82660)	ACETO- CHLOR, WATER, FLTRD REC (49308)	ACETO- CHLOR, WATER, FLTRD REC (49260)
DEC 04...	4.5	<.06	1.9	<1	944	2.4	1	<.07	<.16	<.25	<.002	<.11	<.004
FEB 22...	5.0	.53	1.8	<1	1180	1.9	1	<.07	<.16	<.25	<.006	<.11	<.006
MAY 23...	4.5	1.69	2.5	<1	961	2.7	2	<.07	<.16	<.25	<.006	<.11	<.006
AUG 29...	4.8	1.10	1.9	<1	963	2.4	3	<.07	<.16	<.25	<.006	<.11	<.006
Date	ACIFL- UORFEN WATER, FLTRD, GF 0.7U REC (49315)	ALA- CHLOR, WATER, DISS, REC (46342)	ALDI- CARB SULFONE WAT,FLT GF 0.7U REC (49313)	ALDICA- RB SUL- FOXIDE, WAT,FLT GF 0.7U REC (49314)	ALDI- CARB, WATER, FLTRD, GF 0.7U REC (49312)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (39632)	^a BDMC, SURROG, WATER, UNFLTRD REC (99835)	BEN- FLUR- ALIN WAT FLD GF, REC (82673)	BENTA- ZON, WATER, FLTRD, GF 0.7U REC (38711)	BRO- MACIL, WATER, DISS, REC (04029)	BRO- MOXYNIL WATER, FLTRD, GF 0.7U REC (49311)	BUTYL- ATE, WATER, DISS, REC (04028)
DEC 04...	<.05	<.002	<.70	<.27	<.21	<.005	<.007	E40.6	<.010	<.05	<.09	<.07	<.002
FEB 22...	<.05	<.004	<.20	<.27	<.21	<.005	<.007	88.4	<.010	<.05	<.09	<.07	<.002
MAY 23...	<.05	<.004	<.20	<.27	<.21	<.005	E.007	86.2	<.010	<.05	<.09	<.07	<.002
AUG 29...	<.05	<.004	<.20	<.27	<.21	<.005	E.004	64.2	<.010	<.05	<.09	<.07	<.002
Date	CAR- BARYL, WATER, FLTRD, GF 0.7U REC (49310)	CAR- BARYL WATER FLTRD GF, REC (82680)	CARBO- FURAN, WATER, FLTRD, GF 0.7U REC (49309)	CARBO- FURAN WATER FLTRD GF, REC (82674)	CHLOR- AMBN, METHYL ESTER WATER FLTRD (61188)	CHLORO- THALO- NIL, WAT,FLT GF 0.7U REC (49306)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	CLOPYR- ALID, WATER, FLTRD, GF 0.7U REC (49305)	CYANA- ZINE, WATER, DISS, REC (04041)	DACTHAL MONO- ACID, WAT,FLT GF 0.7U REC (49304)	DCPA WATER FLTRD GF, REC (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (04040)	^a DIAZ- INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)
DEC 04...	<.080	<.041	<.15	<.020	<.21	<.25	<.005	<.42	<.018	<.07	<.003	<.006	96.4
FEB 22...	<.080	<.041	<.15	<.020	<.21	<.25	<.005	<.42	<.018	<.22	<.003	<.006	105
MAY 23...	<.080	<.041	<.15	<.020	<.21	<.25	<.005	<.42	<.018	<.07	E.003	<.006	106
AUG 29...	<.080	<.041	<.15	<.020	<.21	<.25	<.005	<.42	<.018	<.07	<.003	<.006	85.4

COLORADO RIVER MAIN STEM

09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLOR-BENIL, WATER, FLTRD, GF 0.7U REC (UG/L) (49303)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DISUL-FOTON WATER, FLTRD, 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	DNOC WAT,FLT GF 0.7U REC (UG/L) (49299)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER, FLTRD, 0.7 U GF, REC (UG/L) (82672)	FEN-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)
DEC 04...	<.005	<.11	<.09	<.12	<.005	<.09	<.02	<.12	<.25	<.002	<.009	<.005	<.07
FEB 22...	<.005	<.11	<.09	<.12	<.005	<.09	<.02	<.12	<.25	<.002	<.009	<.005	<.07
MAY 23...	<.005	<.11	<.09	<.12	<.005	<.09	<.02	<.12	<.25	<.002	<.009	<.005	<.07
AUG 29...	<.005	<.11	<.09	<.12	<.005	<.15	<.02	<.12	<.25	<.002	<.009	<.005	<.07
Date	FLURO-METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER, DISS REC (UG/L) (04095)	^a HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	LIN-URON WATER, FLTRD, 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METHIO-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METH-OMYL, WATER, FLTRD, 0.7 U GF, REC (UG/L) (49296)	METHYL-AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL-PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)
DEC 04...	<.06	<.003	89.3	<.004	<.06	<.035	<.027	<.20	<.26	<.07	<.22	<.050	<.006
FEB 22...	<.06	<.003	97.4	<.004	<.06	<.035	<.027	<.20	<.26	<.07	<.26	<.050	<.006
MAY 23...	<.06	<.003	105	<.004	<.06	<.035	<.027	<.20	<.26	<.07	<.22	<.050	<.006
AUG 29...	<.06	<.003	92.1	<.004	<.06	<.035	<.027	<.20	<.26	<.07	<.22	<.050	<.006
Date	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER, FLTRD, 0.7 U GF, REC (UG/L) (82671)	NAPPROP-AMIDE WATER, FLTRD, 0.7 U GF, REC (UG/L) (82684)	NEB-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NORFLUR AZON, WATER, FLTRD, REC (UG/L) (49293)	ORY-ZALIN, WATER, FLTRD, REC (UG/L) (49292)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	P,P' DDE REC (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER, FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)
DEC 04...	<.013	<.006	<.002	<.007	<.07	<.04	<.28	<.16	<.003	<.007	<.002	<.010	<.006
FEB 22...	<.013	<.006	<.002	<.007	<.07	<.04	<.28	<.16	<.003	<.010	<.004	<.022	<.006
MAY 23...	E.007	<.006	<.002	<.007	<.07	<.04	<.28	<.16	<.003	<.010	<.004	<.022	<.006
AUG 29...	<.013	<.006	<.002	<.007	<.32	<.04	<.28	<.16	<.003	<.010	<.004	<.022	<.006
Date	PHORATE WATER, FLTRD, 0.7 U GF, REC (UG/L) (82664)	PIC-LORAM, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER, FLTRD, 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER, FLTRD, 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER, FLTRD, 0.7 U GF, REC (UG/L) (82685)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PRO-POKUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	SILVEX, DIS-SOLVED (UG/L) (39762)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER, FLTRD, 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER, FLTRD, 0.7 U GF, REC (UG/L) (82665)
DEC 04...	<.011	<.09	M	<.004	<.010	<.011	<.02	<.22	<.36	<.03	<.011	<.02	<.034
FEB 22...	<.011	<.09	<.01	<.004	<.010	<.011	<.02	<.22	<.25	<.03	<.005	<.02	<.034
MAY 23...	<.011	<.09	E.01	<.004	<.010	<.011	<.02	<.22	<.61	<.03	<.007	M	<.034
AUG 29...	<.011	<.09	M	<.004	<.010	<.011	<.02	<.22	<.12	<.03	<.005	<.02	<.034

COLORADO RIVER MAIN STEM
09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI- CLOPYR, WATER, FLTRD, 0.7U REC (UG/L) (49235)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	URANIUM NATURAL DIS- SOLVED (UG/L) AS U (22703)	SEDI- MENT, SUS- PENDEED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN (MG/L) (70331)	SEDI- MENT, DIS- CHARGE, SUS- PENDEED (T/DAY) (80155)
DEC 04...	<.02	<.005	<.002	<.07	<.009	3.58	--	--	--
FEB 22...	<.02	<.005	<.002	<.07	<.009	3.10	1.0	44	82.6
MAY 23...	<.02	<.005	<.002	<.07	<.009	3.47	<1.0	50	<42
AUG 29...	<.02	<.005	<.002	<.07	<.009	3.86	1.0	75	41

Remark codes used in this report:

< -- Less than
 E -- Estimated value
 M -- Presence verified, not quantified

^a Listed values are recovery percentages for the indicated compounds. These compounds are added to the sample to determine the relative recovery of other organic compounds that are detected using the same analytical method.

COLORADO RIVER MAIN STEM

09422500 LAKE MOHAVE AT DAVIS DAM, AZ-NV

LOCATION--Lat 35° 11' 50", long 114° 34' 07", in SW1/4SW1/4 sec. 18, T.21 N., R.21 W., Gila and Salt River meridian, Mohave County, AZ, Hydrologic Unit 15030101, on forebay structure on Arizona side of Davis Dam on Colorado River, 29 mi west of Kingman, AZ, and 67 mi downstream from Hoover Dam.

DRAINAGE AREA--173,300 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

PERIOD OF RECORD--Jan. 1950 to current year.

GAGE--Water-stage recorder. Datum of gage is sea level.

REMARKS--Reservoir is formed by earthfill and rockfill dam; dam completed in Apr. 1949 and storage began Jan. 17, 1950. Usable capacity, 1,810,000 acre-ft between elevations 533.39 ft (lowest point of penstock outlet) - and 647.0 ft (top of spillway gates). A small amount of additional storage is available through use of splashboards on the spillway gates. Dead storage, 8,530 acre-ft below elevation 533.39 ft. Lake is used for power development, regulation for irrigation demand, and to satisfy requirements of the Treaty of 1944 with Mexico. Figures given herein represent usable contents.

EXTREMES FOR PERIOD OF RECORD--Maximum contents, 1,811,000 acre-ft May 24, 1958, May 29, 1963, May 29, 1982; maximum elevation, 647.04 ft May 29, 1963, May 29, 1982; minimum contents (since 1952), 1,168,000 acre-ft Sept. 8, 1953, elevation, 622.15 ft.

EXTREMES FOR CURRENT YEAR--Maximum contents, 1,742,000 acre-ft May 29-30, elevation, 644.58 ft; minimum, 1,440,000 acre-ft Nov.13, elevation, 633.23 ft.

Capacity table (elevation, in feet, and usable contents, in acre-feet)

628	1,309,000	641	1,644,000
632	1,409,000	644	1,726,000
635	1,486,000	647	1,810,000
638	1,564,000		

RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1606000	1478000	1528000	1660000	1672000	1634000	1711000	1675000	1720000	1725000	1696000	1703000
2	1605000	1474000	1527000	1658000	1669000	1633000	1712000	1673000	1700000	1727000	1694000	1701000
3	1601000	1470000	1528000	1658000	1668000	1631000	1713000	1675000	1689000	1723000	1685000	1702000
4	1595000	1467000	1523000	1664000	1670000	1635000	1712000	1671000	1686000	1710000	1674000	1704000
5	1597000	1470000	1525000	1660000	1671000	1636000	1709000	1670000	1692000	1700000	1667000	1695000
6	1590000	1473000	1530000	1660000	1668000	1636000	1698000	1670000	1696000	1683000	1669000	1687000
7	1583000	1475000	1542000	1662000	1667000	1638000	1688000	1677000	1700000	1679000	1668000	1676000
8	1572000	1481000	1539000	1660000	1664000	1640000	1684000	1679000	1689000	1669000	1672000	1665000
9	1567000	1475000	1539000	1662000	1653000	1635000	1679000	1684000	1680000	1668000	1675000	1665000
10	1555000	1464000	1537000	1662000	1654000	1629000	1678000	1685000	1672000	1675000	1677000	1665000
11	1552000	1457000	1541000	1667000	1653000	1634000	1683000	1669000	1667000	1676000	1676000	1676000
12	1549000	1452000	1543000	1670000	1646000	1634000	1691000	1668000	1667000	1682000	1677000	1680000
13	1538000	1440000	1548000	1671000	1643000	1641000	1694000	1671000	1667000	1682000	1683000	1684000
14	1530000	1441000	1555000	1666000	1637000	1649000	1689000	1675000	1672000	1678000	1688000	1686000
15	1528000	1454000	1562000	1670000	1629000	1654000	1688000	1676000	1663000	1671000	1691000	1691000
16	1525000	1470000	1563000	1670000	1623000	1660000	1681000	1683000	1656000	1678000	1693000	1691000
17	1523000	1480000	1570000	1670000	1620000	1667000	1680000	1685000	1667000	1676000	1679000	1682000
18	1522000	1492000	1573000	1672000	1611000	1676000	1680000	1689000	1668000	1678000	1674000	1671000
19	1516000	1497000	1574000	1669000	1612000	1681000	1674000	1685000	1670000	1680000	1669000	1666000
20	1506000	1505000	1583000	1674000	1620000	1691000	1661000	1687000	1672000	1671000	1666000	1656000
21	1501000	1506000	1591000	1671000	1629000	1700000	1660000	1693000	1666000	1655000	1661000	1643000
22	1493000	1498000	1593000	1672000	1633000	1706000	1663000	1707000	1659000	1655000	1665000	1632000
23	1484000	1489000	1601000	1672000	1629000	1704000	1669000	1718000	1658000	1663000	1666000	1624000
24	1477000	1484000	1604000	1670000	1622000	1703000	1668000	1726000	1660000	1666000	1664000	1613000
25	1474000	1489000	1608000	1675000	1630000	1711000	1677000	1728000	1673000	1676000	1660000	1615000
26	1475000	1496000	1614000	1671000	1637000	1715000	1679000	1720000	1685000	1678000	1673000	1606000
27	1468000	1509000	1624000	1670000	1644000	1716000	1671000	1720000	1701000	1670000	1678000	1593000
28	1465000	1516000	1635000	1665000	1641000	1720000	1676000	1733000	1712000	1664000	1689000	1588000
29	1466000	1526000	1643000	1671000	---	1725000	1679000	1742000	1718000	1672000	1697000	1585000
30	1470000	1530000	1649000	1675000	---	1718000	1679000	1742000	1720000	1678000	1705000	1577000
31	1472000	---	1654000	1673000	---	1707000	---	1735000	---	1694000	1695000	---
MAX	1606000	1530000	1654000	1675000	1672000	1725000	1713000	1742000	1720000	1727000	1705000	1704000
MIN	1465000	1440000	1523000	1658000	1611000	1629000	1660000	1668000	1656000	1655000	1660000	1577000
(*)	634.45	636.68	641.37	642.05	640.89	643.29	642.29	644.32	643.76	642.84	642.88	638.47
(**)	-136000	+58000	+124000	+19000	-32000	+66000	-28000	+56000	-15000	-26000	+1000	-118000
CAL YR 2001	MAX 1765000	MIN 1440000	(**)	+53000								
WTR YR 2002	MAX 1742000	MIN 1440000	(**)	-31000								

(*) Elevation, in feet, at end of month.
(**) Change in contents, in acre-feet.

COLORADO RIVER MAIN STEM

09423000 COLORADO RIVER BELOW DAVIS DAM, AZ-NV

LOCATION.--Lat 35° 11'30", long 114° 34'17", in SE1/4NE1/4 sec. 1, T.32 S., R.66 E., Mount Diablo meridian, in Clark County, Nevada, Hydrologic Unit 15030101, on right bank 0.5 mi downstream from Davis Dam, 29 mi west of Kingman, AZ, and 68 mi downstream from Hoover Dam.

DRAINAGE AREA.--173,300 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

PERIOD OF RECORD.--June 1905 to Sept. 1907 (published as "at Hardyville"), Mar. 1949 to current year.

REVISED RECORDS.--WDR AZ-86-1:1981.

GAGE.--Water-stage recorder. Datum of gage is 490.00 ft, sea level; gage readings have been reduced to elevations above sea level since Oct. 1, 1967. 1905--7, nonrecording gage at site 4.8 mi downstream at datum about 3.4 ft lower. Mar. 16 to May 3, 1949, water-stage recorder at site 0.5 mi downstream at datum 10.00 ft higher. May 4, 1949, to Feb. 24, 1956, water-stage recorder at site 400 ft upstream at datum 10.00 ft higher. Feb. 25, 1956, to Sept. 30, 1967, water-stage recorder at present site at datum 10.00 ft higher.

REMARKS.--No estimated daily discharges. Records excellent. Flow regulated by Lake Mead since Feb. 1, 1935, and by Lake Mohave since Jan. 17, 1950. Many diversions upstream for irrigation, industrial, and municipal uses.

EXTREMES FOR PERIOD OF RECORD.--1905--7: Maximum daily discharge, 116,000 ft³/s June 20, 1906; minimum daily, 2,850 ft³/s Jan. 5, 1906.

1949--2002: Maximum discharge, 46,200 ft³/s July 2, 1983, elevation, 509.48 ft; maximum elevation, 513.91 ft Apr. 22, 1952; no flow at Davis Dam parts of several days July to Sept. 1950 and Dec. 27, 1950, when gates in dam were closed; minimum daily discharge, 285 ft³/s Aug. 3, 1950.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 25,300 ft³/s July 26, elevation, 505.06 ft. Minimum daily discharge, 8,990 ft³/s Nov. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12300	9000	10600	9880	13500	19200	19200	20200	18900	17900	16600	15400
2	12500	9460	10600	10100	12700	16700	19400	20900	18900	17400	17100	15400
3	12800	9100	10500	10000	12700	16800	19500	18700	19400	17300	16000	15300
4	12800	9020	12500	10300	13100	18500	19700	18300	18500	16500	15900	15400
5	12200	9050	12500	10300	13800	18300	19700	17300	18100	17800	16900	15200
6	11800	9230	11900	10400	15000	18700	19800	18300	18300	17000	16800	15300
7	11700	9580	11800	10700	15000	18600	19800	18300	18800	17200	15300	14400
8	11700	10000	10500	10600	15100	18500	19800	18200	17700	17200	15300	14400
9	13800	10800	10500	10600	14200	17300	20100	19000	17700	18400	15400	12800
10	13700	10500	10800	10700	14300	17200	20300	20100	17800	18500	14400	12100
11	11000	10600	12700	11500	13700	18400	18700	19400	19500	17400	14300	10900
12	10700	10800	11700	9760	14800	18700	19000	19400	19500	17300	15400	12500
13	10200	11900	11700	10400	14700	18600	18100	19500	19100	16700	15500	12300
14	10300	9790	10100	12100	16300	18100	18100	19400	19000	16700	15500	11300
15	11200	9420	9950	12200	16200	18000	19800	19400	17700	16800	14700	10900
16	11100	9450	9990	12400	14800	17200	20400	18700	17400	16300	17200	12100
17	11100	8990	10600	11300	14700	17200	20500	18300	18700	15900	16500	13000
18	11300	9980	11600	12400	14800	17200	20400	17400	18600	16300	16300	13600
19	11600	11500	11800	12400	13500	17200	20300	17800	19400	16400	17400	14200
20	10800	13100	11300	11600	13300	17600	19700	18200	18300	17500	17500	16000
21	10800	13200	9450	10900	14000	17000	19500	19100	18100	17300	16500	15100
22	12000	13300	9520	12800	16000	18000	19800	18300	17300	16700	16400	15900
23	12200	13300	9500	12000	15200	17800	20300	17600	17300	16600	12200	16200
24	11900	12600	9410	12100	15000	17600	21200	18200	17300	18300	15000	15500
25	10800	12600	9430	12000	17400	18300	20300	18700	16800	19000	15300	13100
26	9760	11700	9430	11800	19300	18700	20400	19200	17800	19000	14500	14400
27	11200	11600	9630	11700	19300	18800	19300	17000	17300	17600	15500	14600
28	10200	10700	9580	13100	19300	19200	18700	16800	17800	17600	15500	10900
29	9030	10100	9190	12600	---	19200	20200	18500	17700	16600	15500	12800
30	9040	10600	9410	12600	---	18400	20200	19300	18000	16800	15400	15400
31	9190	---	9630	13000	---	18300	---	19800	---	16700	15500	---
TOTAL	350720	320970	327820	354240	421700	559300	592200	579300	546700	534700	487300	416400
MEAN	11310	10700	10570	11430	15060	18040	19740	18690	18220	17250	15720	13880
MAX	13800	13300	12700	13100	19300	19200	21200	20900	19500	19000	17500	16200
MIN	9030	8990	9190	9760	12700	16700	18100	16800	16800	15900	12200	10900
AC-FT	695700	636600	650200	702600	836400	1109000	1175000	1149000	1084000	1061000	966600	825900
CAL YR 2001	TOTAL 5327650	MEAN 14600	MAX 22300	MIN 8670	AC-FT 10570000							
WTR YR 2002	TOTAL 5491350	MEAN 15040	MAX 21200	MIN 8990	AC-FT 10890000							

COLORADO RIVER MAIN STEM

09423500 COLORADO RIVER AT NEEDLES, CA

LOCATION.--Lat 34° 51'06", long 114° 36'33", in SE1/4SE1/4 sec. 19, T.9 N., R.23 E., San Bernardino meridian, San Bernardino County, Hydrologic Unit 15030101, on right bank at Needles, 15 mi upstream from Bureau of Reclamation gaging station near Topock, AZ, 30 mi downstream from Davis Dam, and 97 mi downstream from Hoover Dam.

DRAINAGE AREA.--174,500 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

PERIOD OF RECORD.--Apr. 1931 to current year (mean elevations through Sept. 1987; maximum elevations thereafter).

REVISED RECORDS.--WSP 1119:1931-47. WDR AZ-89-1:1983-88.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to May 15, 1942, at site 550 ft downstream and May 15, 1942 to Feb. 16, 1969, at site 200 ft upstream.

REMARKS.--Elevation of river below bottom of gage (elevation 459.52 ft) Oct. 12, Jan. 16-21, 25-31, Feb. 2, 3, 5-11. Flow regulated by Lake Mead since Feb. 1, 1935, and by Lake Mohave since Jan. 17, 1950.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 475.77 ft Nov. 30, 1944; minimum recorded, 457.84 ft Feb. 26, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum recorded elevation, 463.75 ft Apr.26-27.

ELEVATION, in FT (NGVD), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	459.80	---	458.87	---	460.08	461.92	461.86	463.47	463.20	e463.37	e462.94	e462.87
2	460.19	---	458.90	---	460.11	461.85	461.92	463.60	463.13	e463.35	e463.02	e462.82
3	460.38	---	458.91	---	460.00	461.69	461.94	463.58	463.40	e463.28	e463.08	e462.73
4	460.46	---	459.15	---	459.97	461.89	462.01	463.39	463.36	e463.27	e462.72	e462.71
5	460.48	---	459.23	---	460.06	461.87	462.01	463.39	463.22	e463.19	e462.90	e462.83
6	460.22	---	459.25	---	460.71	461.93	462.07	463.22	463.63	e463.38	e463.00	e462.76
7	459.98	---	459.20	---	461.09	461.95	462.07	463.24	463.65	e463.28	e462.81	e462.80
8	459.86	458.53	459.09	---	461.09	461.93	462.04	463.22	463.62	e463.34	e462.69	e462.35
9	460.86	458.87	458.90	---	460.49	461.94	462.19	463.30	463.48	e463.49	e462.69	e461.00
10	460.93	458.87	458.87	---	460.58	461.95	462.24	463.37	463.46	e463.45	e462.73	461.00
11	460.87	458.91	459.21	---	460.05	461.94	462.23	463.40	463.55	e463.46	e462.48	460.37
12	459.10	458.93	459.21	---	460.53	461.98	461.95	463.42	463.62	e463.20	e462.57	460.84
13	458.87	460.11	458.96	---	460.76	461.83	461.91	463.43	e463.61	e463.12	e462.79	460.83
14	458.74	460.11	458.32	459.72	461.18	461.86	461.82	463.44	e463.61	e463.02	e462.85	460.69
15	458.85	459.32	458.09	460.07	461.14	461.86	462.03	462.66	e463.56	e463.05	e462.88	460.40
16	459.00	---	458.09	459.97	461.20	461.80	462.20	462.46	e463.43	e463.01	e463.11	460.49
17	458.99	---	458.09	459.71	460.57	461.75	462.25	462.46	e463.30	e462.87	e463.17	461.09
18	459.00	---	458.09	459.91	460.79	461.75	462.26	462.44	e463.55	e462.76	e463.04	461.08
19	459.08	458.89	458.15	459.79	460.68	461.71	462.26	462.43	e463.53	e462.87	e463.26	461.22
20	459.17	459.30	458.28	460.04	459.81	461.75	462.25	462.46	e463.62	e463.08	e463.31	461.70
21	458.97	459.34	458.23	459.72	460.08	461.75	461.96	462.46	e463.45	e463.22	e463.34	461.64
22	459.60	459.33	---	459.57	460.82	461.68	462.12	463.00	e463.45	e463.29	e463.17	461.80
23	460.29	459.34	---	459.81	460.99	461.74	462.28	463.00	e463.34	e462.82	e463.13	461.79
24	460.37	459.38	---	459.55	460.82	461.73	463.11	462.42	e463.36	e463.24	e463.15	461.69
25	460.23	459.38	---	459.71	461.72	461.72	462.70	462.37	e463.38	e463.37	e462.50	461.29
26	459.07	459.37	---	459.55	461.86	461.77	463.75	460.25	e463.28	e463.46	e462.55	461.41
27	458.88	459.10	---	459.68	461.89	461.78	463.75	461.33	e463.39	e463.50	e462.16	462.11
28	459.13	459.10	---	459.89	461.91	461.79	463.40	461.07	e463.61	e463.18	e462.46	462.06
29	458.84	458.74	---	460.26	---	461.85	463.47	461.86	e463.31	e463.17	e462.64	460.74
30	---	458.82	---	460.06	---	461.82	463.46	463.21	e463.39	e462.95	e462.67	461.69
31	---	---	---	459.98	---	461.78	---	463.18	---	e462.97	e462.72	---
MAX	460.93	460.11	459.25	460.26	461.91	461.98	463.75	463.60	463.65	463.50	463.34	462.87
MIN	458.74	458.53	458.09	459.55	459.81	461.68	461.82	460.25	463.13	462.76	462.16	460.37

WTR YR 2002 MAX 463.75 MIN 458.09

e Estimated

DIVERSIONS AND RETURN FLOWS BETWEEN DAVIS DAM AND PARKER DAM

09423550 TOPOCK MARSH INLET NEAR NEEDLES, CA

LOCATION--Lat 34° 50'10", long 114° 35'03", in NE1/4NW1/4 sec. 33, T.9 N., R.23 E., San Bernardino meridian, in Mohave County, AZ, Hydrologic Unit 15030101, on left bank of Colorado River on north side of intake structure, 1.3 mi east of Needles.

PERIOD OF RECORD--Jan. 1967 to current year.

GAGE--Water-stage recorders above and below intake gates and on intake gates to record head and gate openings. Datum of gages is 400.00 ft above sea level.

REMARKS--No estimated daily discharges. Records fair. Topock Marsh inlet diverts water from the Colorado River into Topock Marsh, an area of 4,260 acres. This water flows through the marsh and returns to the Colorado River through the Topock Marsh outlet. The U.S. Fish and Wildlife Service operate the gate settings that control the flow into marsh. Monthly total return flows through the outlet, sta 09423650, Topock Marsh Outlet near Topock, AZ, are shown in the table below. Prior to June 1978, daily flows for this station were published separately.

EXTREMES FOR PERIOD OF RECORD--Maximum daily discharge, 286 ft³/s Mar. 31, 1995; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	4.4	17	2.8	59	112	48	67	116	130	104	87
2	19	4.1	18	1.0	48	91	37	70	112	115	111	83
3	36	7.4	19	3.0	45	85	56	63	118	119	94	81
4	40	4.1	24	2.8	49	106	64	54	116	106	91	81
5	36	4.2	34	4.2	63	105	63	53	106	123	105	88
6	28	4.2	29	0.90	78	95	62	58	103	115	108	84
7	22	7.3	28	12	94	98	62	58	118	113	91	76
8	19	9.7	25	5.4	87	102	62	57	101	109	88	74
9	37	14	18	2.8	73	89	64	61	98	136	87	66
10	48	16	18	7.5	73	87	60	64	92	139	77	42
11	47	16	31	3.6	57	93	57	67	135	112	87	28
12	22	17	36	7.4	81	104	60	64	134	119	76	36
13	13	20	22	3.1	81	99	55	68	134	106	85	48
14	14	28	10	24	102	103	68	71	127	105	88	32
15	18	12	7.0	36	113	95	83	71	108	106	77	28
16	20	7.0	5.6	51	112	80	83	68	118	104	101	31
17	20	7.3	5.9	20	70	84	72	64	122	95	101	59
18	20	4.4	14	48	84	82	68	61	138	97	98	46
19	25	17	20	39	78	82	66	60	136	98	108	73
20	23	50	19	28	38	85	65	73	135	115	111	91
21	19	36	9.4	22	57	86	66	100	121	115	101	73
22	20	44	2.0	38	101	85	66	95	101	112	99	99
23	44	42	2.0	38	95	90	68	88	108	95	98	97
24	40	35	2.3	30	84	93	70	91	105	120	87	106
25	37	38	1.8	33	105	83	69	97	99	139	83	50
26	20	34	0.50	32	155	96	63	101	107	136	83	66
27	13	20	0.80	32	157	80	61	88	104	123	77	76
28	22	25	0.70	50	153	76	59	83	123	116	88	46
29	12	9.5	1.1	50	---	76	66	101	110	102	87	22
30	5.8	16	1.1	51	---	74	66	110	117	108	85	73
31	4.9	---	0.70	52	---	72	---	113	---	109	84	---
TOTAL	756.7	553.6	422.90	730.50	2392	2788	1909	2339	3462	3537	2860	1942
MEAN	24.41	18.45	13.64	23.56	85.43	89.94	63.63	75.45	115.4	114.1	92.26	64.73
MAX	48	50	36	52	157	112	83	113	138	139	111	106
MIN	4.9	4.1	0.50	0.90	38	72	37	53	92	95	76	22
AC-FT	1500	1100	839	1450	4740	5530	3790	4640	6870	7020	5670	3850
(*)	0	0	0	0	0	2310	4690	4130	1450	383	0	0

CAL YR 2001 TOTAL 19915.60 MEAN 54.56 MAX 158 MIN 0.00 AC-FT 39500 (*) 16570

WTR YR 2002 TOTAL 23692.70 MEAN 64.91 MAX 157 MIN 0.50 AC-FT 46990 (*) 13230

(*) Return surface flow, in acre-feet, to Colorado River.

DIVERSIONS FROM LAKE HAVASU

09424150 COLORADO RIVER AQUEDUCT NEAR PARKER DAM, AZ-CA

LOCATION.--Lat 34° 18'58", long 114° 09'23", in NW¹/₄SW¹/₄ sec. 28, T.3 N., R.27 E., San Bernardino meridian, in San Bernardino County, CA, Hydrologic Unit 15030101, at intake pumping plant of Metropolitan Water District of Southern California on Lake Havasu, 1.8 mi upstream from Parker Dam and 149 mi downstream from Hoover Dam.

PERIOD OF RECORD.--Jan. 1939 to current year (monthly diversions only, Oct. 1942 to Sept. 1991. Published as a supplement to records for Colorado River below Parker Dam, 1942--50. Percolation return flow (monthly flow only) Oct. 1964 to Sept. 1973; prior to Oct. 1964 miscellaneous measurements only. Prior to 1992, published as monthly discharges.

GAGE.--Flow obtained from acoustical flowmeters. Prior to Aug. 1990, flow obtained from Venturi meters in pressure lines at intake pumping plant.

REMARKS.--Pumping began Jan. 7, 1939. Figures of daily streamflow shown represent water pumped from Lake Havasu less return surface flow from Gene and Copper Basin Reservoirs. No water returned as surface flow from these reservoirs this year. Percolation return flow from Gene and Copper Basin Reservoirs is estimated by the Bureau of Reclamation as 10 acre-ft/day for a yearly total of 3,650 acre-ft, which is used for accounting purposes.

COOPERATION.--Diversion records furnished by Metropolitan Water District of Southern California.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily streamflow, 4,351 acre-ft, Sept. 1, 1998; no diversion at times.

STREAMFLOW, DAILY, in ACRE 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	3100	3380	3437	2906	3504	3949	3477	3348	3451	3439	3947	3994
2	2978	3069	3487	2978	3479	3939	3483	3445	3439	3014	3662	3715
3	3062	3431	3351	2987	3470	3886	3487	3503	3430	2920	3404	2884
4	2822	3432	3445	3463	3455	3856	3499	3517	3438	3005	3514	3923
5	3703	3439	3468	3452	3436	2938	3497	3522	3442	3027	3392	3838
6	3917	3479	3386	3465	3475	2796	3362	3517	3467	3956	3467	3826
7	3886	3440	3414	3465	3474	3282	3510	3497	3489	3984	3456	3447
8	3859	3810	3405	3965	3500	3453	3491	3479	3506	3374	3914	3392
9	3546	3862	3397	3908	3853	3473	3011	3482	3563	3483	3879	3428
10	3431	3833	3378	3898	3940	3482	3594	3459	3395	3036	3841	3500
11	3447	3590	2940	3873	3900	3961	3961	3453	3450	3491	3415	3450
12	3472	3571	2480	3875	3529	3954	3956	3491	3553	3945	3433	3486
13	3474	3072	2525	3377	3349	3880	3841	3504	3328	3930	3499	3474
14	3484	2967	2553	3394	3464	3476	3474	3517	3432	3866	3349	3920
15	3918	3560	3007	2938	3486	3429	3450	3510	3465	3878	3890	3876
16	4140	3295	3445	3231	3409	3493	3315	3500	3473	3517	3850	3860
17	3599	3535	3457	3441	3484	3491	3464	3471	3482	3427	3825	3862
18	3398	3815	3452	3480	3451	3424	3485	3474	2933	3441	3405	3335
19	3436	3860	3487	3810	3456	3477	3456	3472	3457	3456	3421	3401
20	3425	3840	3376	3888	3598	3468	3481	3558	4004	3468	3454	3429
21	3395	3493	3423	3443	3265	3482	3475	3507	3966	3483	3405	3439
22	3687	2987	3415	3446	3455	3477	3606	3550	3918	3464	3483	3388
23	3720	2936	2936	3433	3467	3478	3400	3388	3472	3437	3901	3435
24	3731	3006	2936	3420	3244	3480	3477	3994	3455	3438	3875	3511
25	2331	3441	3400	3435	3449	3481	3478	3942	3493	3418	3811	3348
26	3726	3903	3395	3403	3498	3479	3485	3934	3489	3436	3810	3440
27	3838	3904	3393	3396	3522	3482	3480	3968	3849	3485	3384	3426
28	3682	3858	3885	3462	3512	3488	3990	3357	3939	3506	3623	3421
29	2733	3867	3634	3439	---	3500	3882	3426	3910	3874	3285	3438
30	2580	3507	3288	3483	---	3475	2999	3435	3526	3882	3346	3332
31	2669	---	3857	3474	---	3485	---	3451	---	3737	3465	---
TOTAL	106189	105182	102452	107628	98124	109414	105566	109671	106214	108817	111405	106218
MEAN	3425	3506	3305	3472	3504	3529	3519	3538	3540	3510	3594	3541
MAX	4140	3904	3885	3965	3940	3961	3990	3994	4004	3984	3947	3994
MIN	2331	2936	2480	2906	3244	2796	2999	3348	2933	2920	3285	2884
CAL YR 2001	TOTAL 1253489	MEAN 3434	MAX 4140	MIN 1777								
WTR YR 2002	TOTAL 1276880	MEAN 3498	MAX 4140	MIN 2331								

BILL WILLIAMS RIVER BASIN

09424450 BIG SANDY RIVER NEAR WIKIEUP, AZ

LOCATION.--Lat 34° 27'45", long 113° 37'25", in SE1/4 sec. 16, T.13 N., R.13 W., Mohave County, Hydrologic Unit 15030201, on left bank 7 mi downstream from Burro Creek, 15 mi upstream from confluence with Santa Maria River, and 17 mi south of Wikieup.

DRAINAGE AREA.--2,742 mi², of which 10.1 mi² are noncontributing.

PERIOD OF RECORD.--Mar. 1966 to current year.

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

GAGE.--Water-stage recorder. Elevation of gage is 1,400 ft, above sea level, from topographic map. Prior to Oct. 1, 1970, at datum 3.06 ft higher. Oct. 1, 1970, to Oct. 10, 1973, at datum 2.06 ft higher. Supplementary water-stage recorder for low flows at site 75 ft upstream at same datum from Apr. 10, 1975 to Mar. 1, 1978; Mar. 28 to Dec. 7, 1966, and Apr. 2, 1969, to Apr. 9, 1975, at site 0.8 mi downstream at different datum.

REMARKS.--Records good, except estimated discharges, which are poor. Diversions above station for irrigation of about 3,800 acres, mostly by pumping from ground water.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 68,700 ft³/s Feb. 9, 1993, gage height, 16.00 ft, from rating curve extended above 2,200 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 1.3 ft³/s July 13, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 8.....	1445	*500	3.26

Minimum daily discharge, 2.1 ft³/s, May 21, 22 and Sept. 16, 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	3.0	2.8	3.3	2.8	3.5	3.4	3.2	2.5	2.7	3.2	e2.8
2	3.0	3.0	2.8	3.3	2.8	3.6	3.6	3.2	2.5	2.6	3.2	e2.8
3	3.0	3.0	2.8	3.2	2.9	3.8	3.7	3.3	2.5	2.8	3.2	e2.8
4	3.0	3.0	2.8	3.2	3.0	3.8	3.7	3.3	2.5	2.9	3.2	e2.7
5	3.0	3.0	2.8	3.2	2.8	3.9	3.7	3.5	2.7	3.0	3.0	e2.7
6	3.0	3.0	2.9	3.2	2.8	3.9	3.5	3.7	2.9	3.0	3.0	e2.7
7	2.9	2.9	3.0	3.2	2.8	3.9	3.5	3.6	3.1	3.2	3.0	e2.5
8	2.8	2.8	3.0	3.1	2.8	3.8	3.4	3.6	3.1	3.0	3.0	45
9	2.8	2.8	3.0	3.0	2.8	3.5	3.4	3.5	3.0	3.0	2.9	56
10	2.8	2.8	3.0	3.1	2.7	3.5	3.6	3.6	3.0	3.0	e2.8	3.1
11	2.7	2.8	3.0	3.3	2.8	3.5	3.7	3.3	2.8	3.0	e2.8	2.4
12	2.7	3.0	3.2	3.3	2.9	3.5	3.7	3.3	2.8	3.0	e2.8	2.2
13	2.7	2.9	3.3	3.3	3.0	3.5	3.9	3.0	2.8	3.0	e2.7	2.3
14	2.7	2.8	3.3	3.2	3.0	3.5	3.9	2.7	2.8	2.9	e2.7	2.4
15	2.7	2.8	3.3	3.2	2.9	3.5	3.9	2.7	3.0	3.0	e2.7	2.2
16	2.7	2.9	3.3	3.2	2.8	3.5	4.1	2.7	2.9	3.0	e2.8	2.1
17	2.7	3.0	3.3	3.2	2.8	3.5	4.1	2.6	2.8	2.9	e2.9	2.1
18	2.7	3.0	3.3	3.2	2.9	3.4	4.1	2.4	2.9	2.8	e2.8	2.4
19	2.7	3.0	3.3	3.2	3.1	3.4	4.1	2.4	3.0	2.8	e2.8	2.5
20	2.7	3.0	3.3	3.0	3.2	3.5	4.1	2.3	3.0	2.8	e2.8	2.6
21	2.7	3.0	3.3	3.0	3.0	3.5	3.9	2.1	3.0	2.9	e2.7	2.7
22	3.0	3.1	3.2	3.0	3.1	3.7	3.9	2.1	2.9	3.0	e2.9	2.7
23	3.0	3.2	3.2	3.0	3.3	3.7	3.8	2.2	2.8	3.2	e3.0	2.8
24	3.0	3.1	3.2	3.0	3.3	3.6	3.7	2.4	2.8	3.2	e3.0	2.7
25	3.0	2.9	3.3	2.8	3.3	3.6	3.7	2.4	2.7	3.2	e2.8	2.5
26	3.0	2.7	3.4	2.8	3.2	3.6	3.5	2.4	2.7	3.2	e2.9	2.5
27	3.0	2.8	3.5	2.8	3.3	3.5	3.5	2.4	2.6	3.2	e3.0	2.7
28	2.9	2.8	3.4	2.8	3.5	3.5	3.4	2.4	2.7	3.2	e2.9	2.7
29	2.8	2.8	3.3	2.8	---	3.5	3.3	2.4	2.8	3.2	e2.8	2.6
30	2.9	2.8	3.3	2.7	---	3.4	3.3	2.4	2.7	3.2	e2.8	2.4
31	3.0	---	3.3	2.7	---	3.3	---	2.4	---	3.2	e2.8	---
TOTAL	88.6	87.7	97.9	95.3	83.6	110.9	111.1	87.5	84.3	93.1	89.9	172.6
MEAN	2.858	2.923	3.158	3.074	2.986	3.577	3.703	2.823	2.810	3.003	2.900	5.753
MAX	3.0	3.2	3.5	3.3	3.5	3.9	4.1	3.7	3.1	3.2	3.2	56
MIN	2.7	2.7	2.8	2.7	2.7	3.3	3.3	2.1	2.5	2.6	2.7	2.1
AC-FT	176	174	194	189	166	220	220	174	167	185	178	342
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IN.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2002, BY WATER YEAR (WY)

MEAN	10.79	19.44	70.96	165.8	353.1	289.8	38.20	8.470	4.988	5.200	20.18	19.75
MAX	100	252	737	2674	3892	1943	259	35.8	14.1	20.8	178	226
(WY)	1973	1979	1985	1993	1993	1978	1998	1980	1980	1990	1971	1983
MIN	2.06	2.44	2.14	2.38	2.08	3.58	3.55	2.02	2.10	1.86	2.69	2.84
(WY)	2000	1991	1997	1992	2000	2002	1971	1990	1971	1974	1975	1975

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1967 - 2002
ANNUAL TOTAL	15653.8	1202.5	
ANNUAL MEAN	42.89	3.295	82.56
HIGHEST ANNUAL MEAN			586
LOWEST ANNUAL MEAN			3.05
HIGHEST DAILY MEAN	2880	56	26100
LOWEST DAILY MEAN	2.7	2.1	1.3
ANNUAL SEVEN-DAY MINIMUM	2.7	2.2	1.5
ANNUAL RUNOFF (AC-FT)	31050	2390	59810
ANNUAL RUNOFF (CFSM)	0.016	0.001	0.030
ANNUAL RUNOFF (INCHES)	0.21	0.02	0.41
10 PERCENT EXCEEDS	43	3.6	54
50 PERCENT EXCEEDS	3.4	3.0	4.9
90 PERCENT EXCEEDS	2.8	2.7	3.0

e Estimated

BILL WILLIAMS RIVER BASIN

09424900 SANTA MARIA RIVER NEAR BAGDAD, AZ

LOCATION.--Lat 34° 18'21", Long 113° 20'47", in SE1/4 sec. 12, T.11 N., R.11 W., Mohave County, Hydrologic Unit 15030203, on right bank 4.0 mi east of Palmerita Ranch, 12 mi upstream from confluence with Big Sandy River, and 21 mi southwest of Bagdad.

DRAINAGE AREA.--1,129 mi².

PERIOD OF RECORD.--Apr. 1966 to Sept. 1985, Oct. 1988 to current year.

REVISED RECORDS.--WDR AZ-89-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,360 ft above sea level, from topographic map.

REMARKS.--Records poor. Diversions above station for irrigation of about 5,300 acres, most of which is by pumping from ground water.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,600 ft³/s Mar. 1, 1978, gage height, 7.82 ft, from rating curve extended above 5,000 ft³/s on basis of step-backwater computations and slope-area measurements at gage heights 5.50 and 7.82 ft; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--No flow for entire year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IN.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2002, BY WATER YEAR (WY)

	MEAN	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
MEAN	21.73	19.46	68.00	110.4	198.3	207.8	33.98	6.530	1.649	2.838	14.43	18.49			
MAX	505	392	461	936	1519	1035	204	36.7	16.6	53.4	198	355			
(WY)	1973	1979	1979	1980	1980	1973	1976	1995	1993	1999	1992	1983			
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
(WY)	1967	1967	1969	1970	1967	1967	1967	1966	1966	1966	1966	1966			

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1966 - 2002
ANNUAL TOTAL	7482.39	0.00	
ANNUAL MEAN	20.50	0.000	58.14
HIGHEST ANNUAL MEAN			232 1980
LOWEST ANNUAL MEAN			0.000 1996
HIGHEST DAILY MEAN	683 Mar 8	0.00 Oct 1	8410 Dec 18 1978
LOWEST DAILY MEAN	0.00 Jan 1	0.00 Oct 1	0.00 Apr 27 1966
ANNUAL SEVEN-DAY MINIMUM	0.00 Jan 1	0.00 Oct 1	0.00 Apr 27 1966
ANNUAL RUNOFF (AC-FT)	14840	0.00	42120
ANNUAL RUNOFF (CFSM)	0.018	0.000	0.051
ANNUAL RUNOFF (INCHES)	0.25	0.00	0.70
10 PERCENT EXCEEDS	43	0.00	67
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

BILL WILLIAMS RIVER BASIN

09426000 BILL WILLIAMS RIVER BELOW ALAMO DAM, AZ

LOCATION.--Lat 34° 13'51", long 113° 36'29", in SE1/4SE1/4 sec. 4, T.10 N., R.13 W., La Paz County, Hydrologic Unit 15030204, on left bank 0.6 mi downstream from Alamo Dam, 3.7 mi downstream from Bullard Wash, and 8 mi downstream from confluence of Santa Maria and Big Sandy Rivers.

DRAINAGE AREA.--4,633 mi², of which 10 mi² probably is noncontributing.

PERIOD OF RECORD.--Oct. 1939 to current year. Monthly discharge only for Oct. and Nov. 1939, published in WSP 1313. Prior to Oct. 1943, published as "Williams River near Alamo." Oct. 1943 to Sept. 1967, published as "Bill Williams River near Alamo."

REVISED RECORDS.--WSP 1213: 1939(M). 1941(P). WDR AZ-89-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 967 ft above sea level, from construction data. Prior to Apr. 9, 1968, at site 1.7 mi upstream at datum 1,002.95 ft above sea level.

REMARKS.--Records good. Diversions above station for irrigation of about 9,100 acres, mostly by pumping from ground water. Flow regulated by Alamo Lake, beginning Mar. 2, 1969. Temporary storage and slight regulation of releases through uncontrolled rectangular conduit through Alamo Dam June 23, 1968, to Mar. 27, 1969. Alamo Lake is formed by an earthfill and rockfill dam, completed in 1968. Total capacity of lake is 1,043,000 acre-ft. See table below for monthend contents.

EXTREMES FOR PERIOD OF RECORD.--1940-68: Maximum discharge, 65,100 ft³/s Aug. 29, 1951, gage height, 30.8 ft, site and datum then in use; minimum daily, 1.1 ft³/s Sept. 4, 1958.

1969-2002: Maximum discharge, 6,980 ft³/s Mar. 16, 22, 1993, gage height, unknown as weir had washed out; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--The history of floods that occurred prior to Oct. 1939 is published in WSP 1683. The peak discharges have been correlated with those for Bill Williams River at Planet. The peak discharge for Feb. 1937 has been determined as 105,000 ft³/s at a stage of 46 ft, site and datum then in use, from rating curve extended above 50,000 ft³/s on basis of slope-area measurement for flood of Sept. 6, 1939, at a stage of 39.6 ft, discharge of 86,000 ft³/s and known stable high-water control.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 40 ft³/s Apr. 13-16, Apr. 18-June 12, June 14-July 17. Minimum daily discharge, 10 ft³/s on Mar. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	20	25	26	26	15	26	40	40	40	26	26
2	22	20	26	27	26	14	26	40	40	40	26	26
3	21	20	26	26	26	13	26	40	40	40	26	26
4	21	20	26	27	26	12	26	40	40	40	26	26
5	20	20	26	27	26	10	26	40	39	40	26	26
6	20	20	26	26	27	11	26	40	40	40	26	26
7	20	20	26	27	27	11	26	40	40	40	26	26
8	20	20	26	27	27	14	26	40	40	40	26	26
9	20	20	26	26	27	26	26	40	40	40	26	26
10	20	20	26	27	26	26	26	40	40	40	26	26
11	20	20	26	27	26	26	26	40	40	40	26	26
12	20	20	26	26	26	26	31	40	40	40	26	26
13	20	20	26	27	26	26	40	40	39	40	26	26
14	20	20	26	27	26	26	40	40	40	40	26	26
15	20	20	26	27	26	26	40	40	40	40	26	24
16	18	20	26	27	26	26	40	40	40	40	26	26
17	20	20	26	27	26	26	34	40	40	40	26	26
18	19	20	26	27	26	25	40	40	40	31	26	26
19	20	20	26	27	27	26	40	40	40	26	26	26
20	19	22	26	27	26	26	40	40	40	26	26	26
21	20	24	26	26	26	26	40	40	40	26	26	26
22	20	24	26	26	26	26	40	40	40	26	26	26
23	20	24	26	27	26	26	40	40	40	26	26	26
24	20	24	27	27	26	26	40	40	40	26	26	26
25	20	24	26	27	26	26	40	40	40	26	26	26
26	20	24	26	27	26	26	40	40	40	26	26	26
27	20	24	27	27	29	26	40	40	40	26	26	26
28	20	24	26	27	18	26	40	40	40	26	26	26
29	20	24	26	27	---	26	40	40	40	26	26	26
30	20	24	27	27	---	26	40	40	40	26	26	26
31	20	---	26	26	---	26	---	40	---	26	26	---
TOTAL	630	642	808	829	728	697	1031	1240	1198	1049	806	778
MEAN	20.32	21.40	26.06	26.74	26.00	22.48	34.37	40.00	39.93	33.84	26.00	25.93
MAX	30	24	27	27	29	26	40	40	40	40	26	26
MIN	18	20	25	26	18	10	26	40	39	26	26	24
AC-FT	1250	1270	1600	1640	1440	1380	2040	2460	2380	2080	1600	1540
(*)	101300	99300	97400	95700	94400	93100	90500	87200	83300	79900	76800	74200
(**)	-2500	-2000	-1900	-1700	-1300	-1300	-2600	-3300	-3900	-3400	-3100	-2600
CAL YR 2001	TOTAL	11003.78	MEAN	30.15	MAX	272	MIN	0.00	AC-FT	21830	(**)	+6300
WTR YR 2002	TOTAL	10436	MEAN	28.59	MAX	40	MIN	10	AC-FT	20700	(**)	-29600

(*) Contents, in acre-feet, at end of month in Alamo Lake, furnished by Corps of Engineers.
(**) Change in contents, in acre-feet

BILL WILLIAMS RIVER BASIN

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09426600 BILL WILLIAMS RIVER AT MINERAL WASH, NEAR PLANET, AZ

WATER-QUALITY RECORDS

LOCATION--Lat 34° 15' 18", long 114° 00' 32", in SE1/4NE1/4 sec. 34, T. 11 N., R. 17 W., on boundary between Mohave and La Paz Counties, Hydrologic Unit 15030204, at convergence with Mineral Wash, 4 mi west of Planet Wash, 4 mi west of Planet Ranch, 6.1 mi upstream from waterline of Havasu Lake at elevation of 450 ft above sea level, and approximately 30 mi downstream from Alamo Lake.

DRAINAGE AREA--5,320 mi², of which 686 mi² is below Alamo Dam, and 10 mi² is noncontributing.

PERIOD OF RECORD--Dec. 1928 to Sept. 1940, Nov. 1942 to Oct. 1946, Jan. 1970 to Jan. 1972, Oct. 1974 to current year.

REVISED RECORDS--WDR AZ-91-1: Drainage area.

PERIOD OF DAILY RECORD--

SPECIFIC CONDUCTANCE: Oct. 1974 to Sept. 1981.

WATER TEMPERATURES: Oct. 1974 to Sept. 1981.

REMARKS--Streamflow ungaged.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	PH WATER FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-AIR (DEG C) (00020)	TEMPER-WATER (DEG C) (00010)	HARD-NESS DISSOLV FLD. AS CACO3 (MG/L) (00904)	HARD-NESS TOTAL AS CAC03 (MG/L) (00900)	CALCIUM DIS-SOLVED AS CA) (MG/L) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L) (00925)
JAN 28...	0930	10	993	6.8	49	7.9	1060	17.0	12.6	23	250	64.1	21.3
MAY 15...	0900	3.4	740	5.3	63	7.9	1010	27.0	21.8	3	240	61.4	21.0

Date	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION (MG/L AS NA) (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS) (39086)	BICAR-BONATE WATER FIELD (MG/L AS) (00453)	CAR-BONATE WATER FIELD (MG/L AS CO3) (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
JAN 28...	6.86	3	114	227	275	<1	141	1.6	31.6	91.1	.85	628	609
MAY 15...	6.79	3	122	240	290	<1	135	1.6	31.0	84.9	.84	616	607

Date	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, AMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-ORPHO, DIS-SOLVED (MG/L AS PO4) (00660)	PHOS-ORPHUS, DIS-SOLVED (MG/L AS P) (00666)	ORPHO-PHOS-ATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-ORPHUS, DIS-SOLVED (MG/L AS P) (00665)	E COLI, MTEC MF WATER (COL./100 ML) (31633)	COLI-FORM, FECAL, UM-MF (COLS./100 ML) (31625)
JAN 28...	.016	E.07	.16	.112	E.002	.15	.27	.052	.021	.017	.051	E14k	37
MAY 15...	<.04	--	.24	<.05	<.006	--	--	--	<.06	E.01	E.05	<1	76

Date	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM, DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM, DIS-SOLVED (UG/L AS LI) (01130)
JAN 28...	<1	.07	6.2	81	<.06	331	E.02	<.8	.15	.6	<10	E.04	58.8
MAY 15...	<20	--	5	81.4	--	--	<.1	<.8	<13	<1.0	<10	<1	62

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM, NATURAL DIS-SOLVED (UG/L AS U) (22703)	SED. SUSP. % FINER THAN .062 MM (70331)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
JAN 28...	17.8	--	6.7	.24	.5	<1	888	7.7	2	4.80	--	29	.80
MAY 15...	13.0	M	<50	<2.0	<2	<.2	857	<8	--	--	96	37	.34

Remark codes used in this report:
 < -- Less than
 E -- Estimated value
 M -- Presence verified, not quantified
 k -- Counts outside acceptable range

BILL WILLIAMS RIVER BASIN

09426620 BILL WILLIAMS RIVER NEAR PARKER, AZ

LOCATION--Lat 34° 15'45", long 114° 01'37", in NE1/4SE1/4SE1/4 sec. 28, T.11 N., R.17 W., La Paz County, Hydrologic Unit 15030204, on left bank 1.8 mi downstream from Mineral Wash and Havasu National Wildlife Refuge boundary, 5.3 mi upstream from mouth, 17 mi northeast of Parker, and approximately 31 mi downstream from Alamo Dam.

DRAINAGE AREA--5,337 mi², of which 703 mi² is below Alamo Dam and 10 mi² is noncontributing.

PERIOD OF RECORD--Oct. 1988 to current year.

REVISED RECORDS--WDR AZ-91-1: Drainage area.

GAGE--Water-stage recorder. Datum of gage is 500.00 ft above sea level (Bureau of Reclamation benchmark).

REMARKS--Records poor. Diversions above station for irrigation, mostly by pumping from ground water. Flow regulated by Alamo Dam.

EXTREMES FOR PERIOD OF RECORD--Maximum daily discharge, 6,800 ft³/s Mar. 17-26, 1993; no flow for many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD--The history of floods that occurred at a former site located about 3 mi upstream is published in WSP 1683, Bill Williams River at Planet (sta 09426500).

EXTREMES FOR CURRENT YEAR--Maximum daily discharge, 46 ft³/s Sept. 7. Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	2.6	e6.2	6.8	6.6	6.9	3.5	0.28	0.00	0.00	0.00
2	0.00	0.00	2.8	e6.3	6.8	6.5	6.5	3.5	0.12	0.00	0.00	0.00
3	0.00	0.00	2.8	e6.4	6.8	6.4	6.4	3.4	0.02	0.00	0.00	0.00
4	0.00	0.00	3.0	e6.5	6.8	6.5	6.2	3.3	0.00	0.00	0.00	0.00
5	0.00	0.00	3.2	e6.6	6.9	6.8	6.1	3.3	0.00	0.00	0.00	0.00
6	0.00	0.00	3.3	e6.6	6.8	6.7	6.1	3.2	0.00	0.00	0.00	0.00
7	0.00	0.00	3.4	e6.7	6.8	6.7	6.3	3.0	0.00	0.00	0.00	46
8	0.00	0.00	3.6	e6.8	6.9	6.7	6.1	2.7	0.00	0.00	0.00	3.6
9	0.00	0.00	3.8	e6.9	6.8	6.6	6.1	2.7	0.00	0.00	0.00	1.9
10	0.00	0.00	4.0	e7.0	6.6	6.8	6.0	2.4	0.00	0.00	0.00	0.07
11	0.00	0.00	e4.3	e7.1	6.7	6.9	5.8	2.2	0.00	0.00	0.00	0.00
12	0.00	0.00	e4.4	e7.2	6.9	6.8	5.5	2.0	0.00	0.00	0.00	0.00
13	0.00	0.00	e4.5	e7.3	6.8	6.8	5.3	2.0	0.00	0.00	0.00	0.00
14	0.00	0.00	e4.6	e7.2	6.7	6.8	4.9	2.0	0.00	0.00	0.00	0.00
15	0.00	0.00	e4.7	7.2	6.6	6.8	4.3	1.6	0.00	0.00	0.00	0.00
16	0.00	0.00	e4.8	7.0	6.7	6.8	4.0	1.3	0.00	0.00	0.00	0.00
17	0.00	0.00	e4.8	6.9	6.7	6.8	3.9	1.3	0.00	0.00	0.00	0.00
18	0.00	0.00	e4.9	6.7	6.6	6.9	3.8	1.2	0.00	0.00	0.00	0.00
19	0.00	0.00	e5.0	6.8	6.6	6.9	3.8	1.1	0.00	0.00	0.00	0.00
20	0.00	0.00	e5.1	6.7	6.5	6.9	3.9	1.0	0.00	0.00	0.00	0.00
21	0.00	0.00	e5.2	6.7	6.5	6.8	3.9	0.96	0.00	0.00	0.00	0.00
22	0.00	0.00	e5.3	6.7	6.5	6.8	4.1	1.0	0.00	0.00	0.00	0.00
23	0.00	0.00	e5.4	6.6	6.6	6.8	3.9	1.0	0.00	0.00	0.00	0.00
24	0.00	0.20	e5.5	6.6	6.6	6.9	3.7	1.0	0.00	0.00	0.00	0.00
25	0.00	0.85	e5.6	6.7	6.6	7.1	4.1	1.0	0.00	0.00	0.00	0.00
26	0.00	2.0	e5.6	6.7	6.5	7.2	4.0	0.98	0.00	0.00	0.00	0.00
27	0.00	2.1	e5.7	6.8	6.6	7.1	3.9	0.97	0.00	0.00	0.00	0.00
28	0.00	2.1	e5.8	6.8	6.6	7.2	3.8	0.86	0.00	0.00	0.00	0.00
29	0.00	2.3	e5.9	6.8	---	7.3	3.6	0.75	0.00	0.00	0.00	0.00
30	0.00	2.5	e6.0	6.8	---	6.9	3.5	0.52	0.00	0.00	0.00	0.00
31	0.00	---	e6.1	6.7	---	6.8	---	0.37	---	0.00	0.00	---
TOTAL	0.00	12.05	141.7	210.0	187.3	211.6	146.4	56.11	0.42	0.00	0.00	51.57
MEAN	0.000	0.402	4.571	6.774	6.689	6.826	4.880	1.810	0.014	0.000	0.000	1.719
MAX	0.00	2.5	6.1	7.3	6.9	7.3	6.9	3.5	0.28	0.00	0.00	46
MIN	0.00	0.00	2.6	6.2	6.5	6.4	3.5	0.37	0.00	0.00	0.00	0.00
AC-FT	0.00	24	281	417	372	420	290	111	0.8	0.00	0.00	102

CAL YR 2001 TOTAL 1085.26 MEAN 2.973 MAX 67 MIN 0.00 AC-FT 2150
WTR YR 2002 TOTAL 1017.15 MEAN 2.787 MAX 46 MIN 0.00 AC-FT 2020

e Estimated

DIVERSIONS ABOVE PARKER DAM

09426650 CENTRAL ARIZONA PROJECT CANAL AT HAVASU PUMPING PLANT, NEAR PARKER, AZ

LOCATION--Lat 34° 17' 20", long 114° 06' 37", in NW^{1/4}NW^{1/4} sec. 23, T.11 N., R.18 W., La Paz County, Hydrologic Unit 15030204, on left bank of Bill Williams River arm of Lake Havasu, 2 mi upstream from Parker Dam and 19 mi northeast of Parker.

PERIOD OF RECORD--Oct. 1984 to current year. Prior to Oct. 1988, published as "CAP Canal Havasu pumping Plant near Parker."

REMARKS--Figures of daily streamflow shown represent water pumped from Lake Havasu for delivery to the Central Arizona Project.

COOPERATION--Diversion records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD--Maximum daily streamflow, 6,704 acre-ft, May 28, 2001, June 3, 2001; no diversion on many days each year.

STREAMFLOW, DAILY, in ACRE 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	1607	1152	5742	4623	6095	5923	5895	5937	5833	2759	2061	3336
2	1686	789	5724	5012	6319	6389	6413	5958	6891	2902	2150	3336
3	1601	869	5722	5016	6867	6865	6294	5740	5837	2519	2152	3209
4	1603	2309	5375	5016	6103	6109	6171	5972	5909	3362	2311	2428
5	1960	946	5276	5016	5246	6109	6349	6895	5891	2241	2152	2426
6	2319	393	5724	5718	5740	6119	6536	5825	5843	2380	2152	2216
7	2317	940	5024	5014	5839	6129	6881	5970	5891	2759	2154	2214
8	1256	2017	5726	5016	5772	6300	6284	5768	5893	2797	2152	2428
9	2317	2015	5724	5355	6339	6321	6163	5841	6889	3094	2154	2229
10	1632	2015	5621	5443	6875	6871	5837	5950	5885	2896	2154	2273
11	1256	3457	5439	5478	6097	5895	6175	5964	5744	2898	2311	2273
12	1256	3457	5266	5244	6111	6127	6188	6889	5812	2896	3197	1997
13	1254	3055	4917	5718	6115	6173	6002	5669	5893	2896	3197	1999
14	2313	2727	5595	5006	6107	6175	6893	5808	5796	3354	3195	1997
15	867	4108	5478	5062	6873	6266	6169	5710	6565	2892	3195	2840
16	1628	5736	5724	5068	6294	6317	6014	5786	6274	2892	3191	1997
17	764	5732	5238	4953	6875	6885	6081	5948	5219	2894	3195	1995
18	458	5730	5280	4957	6139	6222	6391	5939	6135	2896	3471	1993
19	867	5726	5340	5050	6125	6258	5653	6889	5909	2650	3193	2340
20	865	5726	5290	5312	6121	6407	6434	5929	5909	2513	3193	2430
21	2309	4506	5720	5486	6111	6409	6883	5810	5889	3350	3191	2340
22	770	6557	5528	5101	6105	6387	6129	5766	6141	2892	3348	3465
23	770	5587	5722	5076	6210	6551	6147	5736	6684	2884	3009	2333
24	764	5542	5460	5101	6839	6700	5948	5823	3120	2886	3009	1989
25	770	5213	5722	5101	6145	6413	5956	5798	2717	2884	3039	1952
26	1154	4322	5161	5100	6067	6034	5814	6893	2382	2932	3011	1944
27	1154	3931	5580	5718	5278	6361	5891	6597	2420	2930	3473	2097
28	2309	4122	5720	5211	5768	6258	6887	5865	3590	3348	3275	2087
29	1154	3842	5720	5117	---	6365	5956	5857	3370	2323	3328	2085
30	1154	5603	5720	5151	---	6180	5855	5845	4530	2017	3340	1983
31	770	---	5718	2713	---	6883	---	5845	---	1980	3332	---
TOTAL	42904	108124	170996	157952	172575	196401	186289	186222	160861	86916	88285	70231
MEAN	1384	3604	5516	5095	6163	6336	6210	6007	5362	2804	2848	2341
MAX	2319	6557	5742	5718	6875	6885	6893	6895	6891	3362	3473	3465
MIN	458	393	4917	2713	5246	5895	5653	5669	2382	1980	2061	1944
CAL YR 2001	TOTAL	1518896.0	MEAN	4161	MAX	6704	MIN	0.00				
WTR YR 2002	TOTAL	1627756	MEAN	4460	MAX	6895	MIN	393				

COLORADO RIVER MAIN STEM

09427500 LAKE HAVASU NEAR PARKER DAM, AZ-CA

LOCATION.--Lat 34° 18' 58", long 114° 09' 23", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 28, T.3 N., R.27 E., San Bernardino meridian, in San Bernardino County, CA, Hydrologic Unit 15030101, at intake pumping plant for Colorado River aqueduct of Metropolitan Water District of Southern California, 1.8 mi upstream from Parker Dam on Colorado River, and 149 mi downstream from Hoover Dam.

DRAINAGE AREA.--182,700 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

PERIOD OF RECORD.--July 1938 to current year. Published as "Parker Reservoir near Parker Dam" 1938.

REVISED RECORDS.--WRD Ariz. 1975: 1974 (elevation).

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Lake is formed by concrete-arch dam; dam was completed and storage began July 1, 1938. Usable capacity—based on Apr. 1957 re-survey by Bureau of Reclamation between elevations 430.54 ft and 450.54 ft—619,400 acre-ft between elevations 400.54 ft, sill of regulating gates, and 450.54 ft, top of regulating gates. Prior to Oct. 1, 1956, different capacity table used. Dead storage, 28,600 acre-ft below elevation 400.54 ft, based on original survey. About 0.07 ft fall indicated between gage and Parker Dam under normal operating conditions. Drawdown below elevation 440.54 ft not legally permissible except by consent of the Metropolitan Water District of Southern California or in an emergency affecting the safety of the dam. Lake is used for flood control, power development, regulation of river for irrigation demand, and as a basin from which water is pumped by Metropolitan Water District of Southern California to Colorado River aqueduct. Figures given herein represent usable contents. For record of diversion to Colorado River aqueduct, see record for Colorado River aqueduct near Parker Dam elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum storage, 693,000 acre-ft, by temporary use of flashboards, Apr. 18, 1943, June 4, 1953; maximum elevation, 451.23 ft May 27, 1988, affected by wind; minimum storage, 71,400 acre-ft June 25, 1942, elevation, 412.09 ft.

EXTREMES FOR CURRENT YEAR.--Maximum storage, 601,200 acre-ft May 26, elevation, 449.63 ft, affected by wind; minimum storage, 536,000 acre-ft Nov. 19, elevation, 445.63 ft.

RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	568200	574500	548300	549000	553000	562200	588100	588300	595900	587400	570500	560300
2	566900	573700	547200	548800	551500	562200	588000	594600	593400	588900	569000	560300
3	567300	570900	545000	550400	549400	562800	585600	599000	592400	587000	568800	562200
4	574100	566900	544000	552300	549700	564900	592000	600200	594900	590100	569200	560300
5	576800	564700	546300	552800	551300	566400	590100	596700	594400	588300	566700	566000
6	572400	561500	549200	549500	555300	570700	588300	593400	600600	583500	568200	570300
7	574500	560000	551500	551200	558400	577400	587200	589300	596900	580600	568600	572400
8	574300	560200	551200	556000	563700	582700	588100	588700	593800	577200	572600	573300
9	574500	559200	549200	555800	564400	584100	588300	589100	591300	572600	573900	579600
10	579600	557900	546700	557900	562900	583100	592200	589900	586600	574000	572000	575700
11	587200	555600	547000	550600	556900	585000	597100	590700	584700	580800	568400	587200
12	585700	554700	550800	549700	554200	587000	596700	589700	585800	578700	563700	586300
13	581000	554500	555300	545800	552700	590500	595100	589900	595300	575300	559400	590300
14	576000	557900	556800	542500	557500	595500	589300	590700	594200	572600	557500	592300
15	572200	556800	553400	542900	559400	596300	586600	591800	593000	573000	560700	591300
16	567900	553600	550400	546500	561900	595100	582900	599800	592400	569800	557900	588900
17	565200	548100	549700	551900	560400	593800	581200	598800	594000	568300	557500	578300
18	569400	540400	548100	552500	560900	594200	588900	597100	592400	573000	557300	571800
19	569000	536000	549200	551200	561700	593000	588300	593600	593200	572100	558300	570500
20	566400	541100	552100	550600	558300	592600	587600	592800	596100	571300	558500	569700
21	563700	541400	552500	547600	553800	596500	587000	589700	594600	570200	558500	566400
22	563000	548100	554300	547600	553300	596700	586400	590100	590300	570900	562200	562400
23	564900	549000	556600	549200	551900	595100	584500	596900	587200	568300	566000	564900
24	569200	551200	555500	551700	551900	595300	584100	598600	587200	566000	566000	570700
25	576000	552600	554500	550100	553300	592200	592200	600400	586800	567100	564100	572000
26	578700	555100	554000	548100	548100	592200	590100	601200	586200	567300	566000	573300
27	577200	554700	554900	546800	552900	589300	589900	598800	587400	567700	566000	576000
28	576600	554700	555800	545600	560500	596500	588500	592000	590100	567100	564100	575100
29	577500	552800	557500	547200	---	596100	587200	590300	588300	565600	567900	569200
30	576000	551000	557200	548100	---	592800	586600	596100	586600	564100	566000	567100
31	574500	---	551500	552600	---	592200	---	596900	---	563900	562200	---
MAX	587200	574500	557500	557900	564400	596700	597100	601200	600600	590100	573900	592300
MIN	563000	536000	544000	542500	548100	562200	581200	588300	584700	563900	557300	560300
(**)	+4900	-23500	+500	+1100	+7900	+31700	-5600	+10300	-10300	-22700	-1100	+4300
CAL YR 2001	MAX 610000	MIN 536000	(**)	+1200								
WTR YR 2002	MAX 601200	MIN 536000	(**)	-2500								

(**) Change in contents, in acre-feet.

COLORADO RIVER MAIN STEM

09427500 LAKE HAVASU NEAR PARKER DAM, AZ-CA—CONTINUED

ELEVATION, in FT (NGVD), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	447.38	447.71	446.31	446.35	446.57	447.60	448.96	448.97	449.36	448.92	448.04	447.55
2	447.31	447.67	446.25	446.34	446.49	447.69	448.95	449.29	449.23	449.00	447.96	447.51
3	447.33	447.52	446.13	446.43	446.37	447.63	448.83	449.52	449.18	448.90	447.95	447.60
4	447.69	447.31	446.07	446.53	446.39	447.74	449.16	449.58	449.31	449.06	447.97	447.46
5	447.83	447.19	446.20	446.56	446.48	447.82	449.06	449.40	449.28	448.97	447.84	447.80
6	447.60	447.02	446.36	446.38	446.69	448.05	448.97	449.23	449.60	448.72	447.92	448.03
7	447.71	446.94	446.49	446.47	446.85	448.40	448.91	449.02	449.41	448.57	447.94	448.14
8	447.70	446.95	446.47	446.73	447.14	448.68	448.96	448.99	449.25	448.39	448.15	448.19
9	447.71	446.90	446.36	446.72	447.18	448.75	448.97	449.01	449.12	448.15	448.22	448.52
10	447.98	446.83	446.22	446.83	447.09	448.70	449.17	449.05	448.88	448.22	448.12	448.84
11	448.38	446.71	446.24	446.44	446.77	448.80	449.42	449.09	448.78	448.58	447.93	448.92
12	448.30	446.66	446.45	446.39	446.63	448.90	449.40	449.04	448.84	448.47	447.68	448.87
13	448.05	446.65	446.69	446.17	446.54	449.08	449.32	449.05	449.33	448.29	447.45	449.08
14	447.79	446.83	446.77	445.99	446.80	449.34	449.02	449.09	449.27	448.15	447.35	449.18
15	447.59	446.77	446.59	446.01	446.91	449.38	448.88	449.15	449.21	448.17	447.52	449.13
16	447.36	446.60	446.43	446.21	447.04	449.32	448.69	449.56	449.18	448.00	447.37	449.01
17	447.22	446.30	446.39	446.51	446.96	449.25	448.60	449.51	449.26	447.92	447.35	448.45
18	447.44	445.87	446.30	446.54	446.99	449.27	449.00	449.42	449.18	448.17	447.34	448.11
19	447.42	445.63	446.36	446.47	447.03	449.21	448.97	449.24	449.22	448.12	447.39	448.04
20	447.28	445.91	446.52	446.44	446.85	449.19	448.93	449.20	449.37	448.08	447.37	448.00
21	447.14	445.93	446.54	446.27	446.60	449.39	448.90	449.04	449.29	448.02	447.45	447.82
22	447.10	446.30	446.64	446.27	446.57	449.40	448.87	449.06	449.07	448.06	447.65	447.61
23	447.20	446.35	446.76	446.36	446.50	449.32	448.77	449.41	448.91	447.92	447.75	447.74
24	447.43	446.47	446.70	446.50	446.51	449.33	448.75	449.50	448.91	447.80	447.76	448.05
25	447.79	446.55	446.65	446.41	446.59	449.17	449.17	449.59	448.89	447.86	447.68	448.12
26	447.93	446.68	446.62	446.30	446.29	449.17	449.06	449.63	448.86	447.87	447.85	448.19
27	447.85	446.66	446.67	446.23	446.55	449.02	449.05	449.51	448.92	447.89	447.83	448.33
28	447.82	446.66	446.72	446.16	446.97	449.39	448.98	449.16	449.06	447.86	447.71	448.28
29	447.87	446.56	446.81	446.25	---	449.37	448.91	449.07	448.97	447.78	447.87	447.97
30	447.79	446.46	446.79	446.30	---	449.20	448.88	449.37	448.88	447.70	447.78	447.86
31	447.71	---	446.49	446.55	---	449.17	---	449.41	---	447.69	447.63	---
MAX	448.38	447.71	446.81	446.83	447.18	449.40	449.42	449.63	449.60	449.06	448.22	449.18
MIN	447.10	445.63	446.07	445.99	446.29	447.60	448.60	448.97	448.78	447.69	447.34	447.46
CAL YR 2001	MAX 450.07	MIN 445.63										
WTR YR 2002	MAX 449.63	MIN 445.63										

COLORADO RIVER MAIN STEM

09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA

LOCATION.--Lat 34° 17'44", long 114° 08'22", in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 3, T.2 N., R.27 E., San Bernardino meridian, in San Bernardino County, CA, Hydrologic Unit 15030104, on north end of powerplant at Parker Dam, 13 mi northeast of Parker, AZ, and 14 mi upstream from Headgate Rock Dam.

DRAINAGE AREA.--182,700 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Feb. to Sept. 1934 (gauge heights and fragmentary discharge records), Oct. 1934 to current year. Prior to Oct. 1937, published as "near Parker, Ariz."

REVISED RECORDS.--WSP 1313: 1941(M).

GAGE.--Water-stage recorder. Datum of gage is 300.54 ft above sea level. Prior to Oct. 1, 1967, at site 3.8 mi downstream at datum 346.23 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Lake Mead since Feb. 1, 1935, by Lake Mohave since Jan. 17, 1950, and by Lake Havasu since July 1, 1938. Many diversions above station. For record of diversion to Colorado River aqueduct and return flows, see record for Colorado River aqueduct near Parker Dam, elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,400 ft³/s Feb. 8, 1937; no flow at Parker Dam for parts of several days in 1942 when gates in dam were closed. An unregulated discharge of probably less than 1,350 ft³/s occurred Aug. 18, 1934 (lowest unregulated discharge since 1917 and probably since a much earlier date).

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 16,400 ft³/s July 6. Minimum daily discharge, 3,140 ft³/s Jan. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10500	7150	6970	7310	7470	11500	14700	13200	15100	14600	10200	12300
2	9950	7900	6480	5860	8470	11700	13200	11800	14200	13800	14600	11600
3	9940	8830	7120	5420	7960	9800	14100	11800	14400	15200	13100	11200
4	6940	8320	7030	4740	7510	11200	10400	12600	13100	11800	12900	12800
5	7900	8320	6440	5210	7430	11200	14600	13300	13400	15300	13800	8770
6	10500	8810	5930	6690	7090	10700	13700	13700	9590	16400	13300	9620
7	8790	8320	6410	4440	7020	9400	13700	14200	14900	15000	12700	11100
8	9420	6610	6410	3640	7460	10400	13700	13700	14200	16200	10400	10700
9	8850	7600	6860	5370	8390	10700	13700	12400	14300	16300	11100	8270
10	8350	8240	6890	4750	8840	11100	12300	13300	14800	15900	12600	7040
11	6580	7500	6900	8270	9830	11200	10900	14200	14800	11400	12900	7540
12	9350	7670	6580	6060	9870	11200	12600	13500	13900	15200	13500	8620
13	10400	7670	5360	6640	9410	10300	13500	13600	9610	14500	13700	7080
14	9870	6600	5900	7160	7970	9870	13800	13400	14500	14600	12900	7440
15	10400	6560	7360	7700	8430	11200	14500	13000	13200	15000	9830	7580
16	11000	6610	6360	6140	8820	11600	14800	9810	13100	15200	12700	9190
17	9880	7590	6360	4700	9420	11200	15400	13300	12700	13200	12600	13200
18	7120	8190	6810	7070	8970	11200	11300	13200	14900	11200	12700	14100
19	9330	7110	6360	7490	8840	11500	14400	13200	13200	13500	12700	11400
20	10400	5530	5400	7000	9180	11300	14100	13300	12600	14400	13300	11900
21	9320	7550	5730	7490	9390	9780	13800	14000	14000	13900	12800	13500
22	9360	5530	4050	7630	9790	10300	14100	13000	14500	13900	10800	13300
23	8210	7670	4370	6940	9880	12800	14800	9300	13900	14300	7730	11700
24	7690	7180	5330	5080	9890	11300	14400	11300	13900	15200	12000	10500
25	6600	7160	5460	7980	12000	13300	11200	11700	14400	15000	12100	10000
26	7110	7140	5330	7490	10800	12200	13500	12100	14200	15000	10100	9510
27	8240	7460	4430	7060	11500	13500	14400	12900	13200	14700	10700	9600
28	8260	6450	4320	8510	9750	10000	13600	15000	12800	14700	12400	11300
29	7680	6990	3940	7020	---	12900	13700	14300	15200	14200	10400	11100
30	8240	6460	4890	7440	---	14400	15400	10300	14800	14200	12200	10900
31	8240	---	7290	6510	---	12600	---	13200	---	13800	12900	---
TOTAL	274420	220720	185070	200810	251380	351350	408300	397610	411400	447600	375660	312860
MEAN	8852	7357	5970	6478	8978	11330	13610	12830	13710	14440	12120	10430
MAX	11000	8830	7360	8510	12000	14400	15400	15000	15200	16400	14600	14100
MIN	6580	5530	3940	3640	7020	9400	10400	9300	9590	11200	7730	7040
AC-FT	544300	437800	367100	398300	498600	696900	809900	788700	816000	887800	745100	620600
CAL YR 2001	TOTAL 3881750	MEAN 10630	MAX 16800	MIN 3170	AC-FT 7699000							
WTR YR 2002	TOTAL 3837180	MEAN 10510	MAX 16400	MIN 3640	AC-FT 7611000							

09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Oct. 1963 to current year.

INSTRUMENTATION.--Water temperature recorder from Feb. 1954 to Aug. 1970. Specific conductance and water temperature recorder from Sept. 1982 to water year 2000.

REMARKS.--Prior to Oct. 1968, published as 09428000.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TUR-BID-ITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	PH WATER (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	HARD-NESS TOTAL (MG/L AS CAC03) (00900)
NOV 14...	1000	9	10200	.90	758	7.3	81	8.2	898	20.0	19.9	160	280
JAN 28...	1315	9	9060	1.2	993	10.4	72	8.2	909	19.0	10.4	150	280
JAN 28...	1320	7	--	1.5	--	--	--	--	--	--	--	--	280
MAY 15...	1220	9	18800	.33	740	8.7	100	8.1	926	38.0	20.7	150	280
AUG 21...	1000	9	18300	1.7	747	7.2	88	8.1	929	30.0	24.2	160	280

Date	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA) (00916)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT DIS TOT IT (MG/L AS CACO3) (39086)	BICAR-BONATE DIS IT (MG/L AS HCO3) (00453)	CAR-BONATE WATER DIS IT (MG/L AS CO3) (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
NOV 14...	69.0	67.0	27.0	26.0	4.30	2	80.0	129	154	<1	70.0	.3	230
JAN 28...	69.0	68.0	27.0	26.0	4.20	2	82.0	131	157	<1	72.0	.3	230
JAN 28...	69.0	68.0	27.0	26.0	4.20	2	82.0	--	--	--	72.0	.3	230
MAY 15...	69.0	70.0	26.0	26.0	4.20	2	88.0	133	159	<1	76.0	.3	230
AUG 21...	69.0	68.0	27.0	26.0	4.30	2	86.0	127	152	<1	76.0	.3	230

Date	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, DIS-SOLVED (TONS AC-FT) (70303)	SOLIDS, RESIDUE AT 180 DEG. C SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, AM-MONIA + ORGANIC (MG/L AS N) (00625)	NITRO-GEN, AMMONIA (MG/L AS N) (00610)	NITRO-GEN, AMMONIA (MG/L AS NH4) (71845)	NITRO-GEN, NO2+NO3 (MG/L AS N) (00630)	NITRO-GEN, ORGANIC (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)
NOV 14...	<1	.80	590	557	E.50	.05	.06	.150	--	--	--	<.02	<5
JAN 28...	3	.80	591	562	.30	<.01	--	.220	--	.52	2.3	<.02	6
JAN 28...	3	.81	593	566	.30	<.01	--	.220	--	.52	2.3	<.02	9
MAY 15...	1	.83	613	572	.20	.05	.06	.250	.15	.45	2.0	<.02	9
AUG 21...	3	.83	613	568	.40	.02	.03	.190	.38	.59	2.6	<.02	5

Date	E COLI, MTEC MF WATER (COL./100 ML) (31633)	COLI-FORM, FECAL, UM-MF (COLS./100 ML) (31625)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
NOV 14...	E2k	E2k	<1	<1	2	2	100	110	<1	<1	116	112	<.5
JAN 28...	<1	E2k	<1	<1	2	2	100	100	<1	<1	116	115	<.5
JAN 28...	--	--	<1	<1	2	2	100	100	<1	<1	115	112	<.5
MAY 15...	E3k	E3k	<1	<1	2	2	100	110	<1	<1	119	120	<.5
AUG 21...	E3k	E22k	<1	<1	3	5	110	110	<1	<1	119	119	<.5

COLORADO RIVER MAIN STEM
09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)
	NOV 14...	<.5	<1	<1	<2	<2	<2	74	<2	<2	<1	7	<.10
JAN 28...	<.5	<1	<1	<2	<2	<2	76	<2	<2	<1	6	<.10	<.1
JAN 28...	<.5	<1	<1	<2	<2	<2	74	<2	<2	<1	6	<.10	<.1
MAY 15...	<.5	<1	<1	<2	<2	<2	32	<2	<2	<1	3	<.10	<.1
AUG 21...	<.5	<1	<1	<2	<2	<2	66	<2	<2	<1	9	<.10	<.1

Date	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL SOLVED (UG/L AS SE) (01147)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	STRON- TIUM, TOTAL RECOV- ERABLE (UG/L AS SR) (01082)	THAL- LIUM, DIS- SOLVED (UG/L AS TL) (01057)	THAL- LIUM, TOTAL SOLVED (UG/L AS TL) (01059)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)
	NOV 14...	<1	<1	1	1	<1	<1	940	<2	<2	<2
JAN 28...	1	<1	<1	1	<1	<1	990	<2	<2	<2	4
JAN 28...	2	<1	2	1	<1	<1	990	<2	<2	<2	<2
MAY 15...	<1	<1	2	2	<1	<1	990	<2	<2	6	5
AUG 21...	<1	<1	2	2	<1	<1	990	<2	<2	<2	<2

Remark codes used in this report:
 < -- Less than
 E -- Estimated value
 k -- counts outside acceptable range

09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA—CONTINUED

Water-quality measurements in the following table were made as part of the ADEQ Fixed-Station Network Program. The following analyses are quality-assurance samples processed during the 2001 sampling period and are defined in the introductory text section titled "Water-Quality Control Data".

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample type	CALCIUM DIS-SOLVED	MAGNESIUM DIS-SOLVED	SODIUM, DIS-SOLVED	NITROGEN, AMMONIA + ORGANIC TOTAL	NITROGEN, AMMONIA TOTAL	NITROGEN, NO2+NO3 TOTAL	PHOSPHORUS TOTAL	ALUMINUM DIS-SOLVED	BARIUM DIS-SOLVED	BERYLLIUM DIS-SOLVED	CADMIUM DIS-SOLVED
			(MG/L AS CA) (00915)	(MG/L AS MG) (00925)	(MG/L AS NA) (00930)	(MG/L AS N) (00625)	(MG/L AS N) (00610)	(MG/L AS N) (00630)	(MG/L AS P) (00665)	(UG/L AS AL) (01106)	(UG/L AS BA) (01005)	(UG/L AS BE) (01010)	(UG/L AS CD) (01025)
NOV 14...	0955	2	<.02	<.03	<.1	<.20	.01	<.020	<.02	<3	<.5	<1	<.5

Date	CHROMIUM, DIS-SOLVED	COPPER, DIS-SOLVED	IRON, DIS-SOLVED	LEAD, DIS-SOLVED	MANGANESE, DIS-SOLVED	NICKEL, DIS-SOLVED	ZINC, DIS-SOLVED
	(UG/L AS CR) (01030)	(UG/L AS CU) (01040)	(UG/L AS FE) (01046)	(UG/L AS PB) (01049)	(UG/L AS MN) (01056)	(UG/L AS NI) (01065)	(UG/L AS ZN) (01090)
NOV 14...	<1	<2	<2	<2	<1	<1	<2

Remark codes used in this report:
 < -- Less than

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

09428500 COLORADO RIVER INDIAN RESERVATION MAIN CANAL NEAR PARKER, AZ

LOCATION.--Two gages, lat 34° 10'04", long 114° 16'33", in SE1/4NW1/4 sec. 31, T.10 N., R.19 W., Gila and Salt River meridian, La Paz County, Hydrologic Unit 15030104. Forebay gage, on left wall of canal intake, 90 ft upstream from diversion gates at Arizona end of Headgate Rock Dam. Tailrace gage, on right bank of canal 250 ft downstream from gates. Both gages are on Colorado River Indian Reservation 1.7 mi northeast of Parker and 14 mi downstream from Parker Dam.

PERIOD OF RECORD.--Jan. 1915 to current year (prior to Jan. 1937, fiscal year diversions only; Jan. 1937 to Sept. 1954, monthly diversions only).

REVISED RECORDS.--WSP 1513: 1915-36.

GAGE.--Water-stage recorders above and below intake gates to record head, and recorder to show gate openings (Oct. 1, 1972, Nov. 30, 1992), with supplementary tape gages read daily and at time of each gate change (prior to Oct. 1, 1972, tape gages only). Datum of gages is 350.00 ft, datum in use locally, or 350.51 ft above sea level. Normal operating level of forebay is 364.3 ft; prior to July 9, 1962, normal operating level of forebay was 362.9 ft, datum in use locally. Prior to Oct. 1954, discharge computed by various methods as described in WSP 1313.

REMARKS.--No estimated daily discharges. Records good. Daily diversions computed on basis of head on intake gates and gate openings. Records show water diverted to project and surface return flows to Colorado River through two wasteways and two drains; three of these are equipped with water-stage recorders.

COOPERATION.--Log of canal intake gate opening (supplementary record) furnished by Bureau of Indian Affairs.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,950 ft³/s July 24, 1992; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	624	693	533	578	879	839	920	1140	1180	1310	1410	993
2	632	685	533	792	731	865	912	1140	1180	1330	1420	1040
3	744	673	525	892	579	822	993	1190	1120	1360	1280	1020
4	752	550	522	744	626	817	994	1100	1220	1320	1170	1070
5	748	630	498	492	674	919	991	1080	1180	1410	1110	1080
6	654	642	448	0.00	643	898	1020	1190	1110	1400	1100	968
7	627	556	483	0.00	646	895	1000	1250	1100	1200	1130	721
8	592	533	416	0.00	586	865	1010	1200	1170	1200	1170	563
9	686	484	320	0.00	474	795	1030	1230	1130	1220	1200	585
10	646	392	326	0.00	413	700	1010	1180	1160	1240	1220	628
11	632	386	487	0.00	448	639	979	1150	1190	1400	1220	521
12	569	455	633	0.00	486	786	1050	1020	1170	1430	1240	585
13	664	497	560	0.00	554	968	1100	1060	1280	1390	1100	679
14	642	506	504	0.00	715	833	1040	1170	1330	1250	1080	737
15	555	547	470	0.00	646	803	1040	1180	1220	1170	1160	716
16	591	600	258	0.00	648	691	1060	1250	1140	1120	1300	749
17	605	521	318	0.00	700	709	1030	1220	1080	1100	1240	876
18	671	466	300	0.00	651	669	993	1230	1160	1260	1130	768
19	676	392	292	0.00	649	580	954	1230	1270	1300	1060	833
20	616	386	314	122	741	356	819	1180	1340	1310	1190	830
21	543	375	343	336	774	383	642	1240	1400	1110	1190	604
22	466	264	472	742	819	674	841	1180	1290	1130	1130	616
23	507	405	478	709	769	827	1050	1200	1030	1350	1110	796
24	511	419	297	869	698	832	1120	1150	1160	1360	1030	793
25	514	386	218	954	717	816	1270	1110	1210	1310	985	802
26	638	507	438	1100	832	969	1280	994	1240	1240	1100	814
27	602	578	584	1080	886	924	1280	1070	1290	1300	1160	804
28	705	662	698	974	859	925	1220	1200	1340	1320	1200	862
29	747	665	785	903	---	936	1260	1260	1350	1340	1220	895
30	708	630	657	953	---	864	1220	1230	1320	1320	1180	744
31	704	---	418	969	---	850	---	1170	---	1310	1110	---
TOTAL	19571	15485	14128	13209.00	18843	24449	31128	36194	36360	39810	36345	23692
MEAN	631.3	516.2	455.7	426.1	673.0	788.7	1038	1168	1212	1284	1172	789.7
MAX	752	693	785	1100	886	969	1280	1260	1400	1430	1420	1080
MIN	466	264	218	0.00	413	356	642	994	1030	1100	985	521
AC-FT	38820	30710	28020	26200	37380	48490	61740	71790	72120	78960	72090	46990
(*)	21190	18150	17020	14340	15620	18330	18640	21530	23810	24220	23810	21380
CAL YR 2001	TOTAL	291519.5	MEAN	798.7	MAX	1380	MIN	0.00	AC-FT	578200 (*)	243600	
WTR YR 2002	TOTAL	309214.00	MEAN	847.2	MAX	1430	MIN	0.00	AC-FT	613300 (*)	238000	

(*) Return surface flow, in acre-feet, to the Colorado River.

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

09429000 PALO VERDE CANAL NEAR BLYTHE, CA

LOCATION.--Lat 33° 43' 55", long 114° 30' 40", in NW^{1/4}NE^{1/4} sec. 19, T.5 S., R.24 E., San Bernardino meridian, Riverside County, Hydrologic Unit 15030104, at canal intake structure on west side of Palo Verde diversion dam, 10 mi northeast of Blythe and 44 mi downstream from Headgate Rock Dam.

PERIOD OF RECORD.--Jan. 1922 to Dec. 1923, Jan. 1925 to current year (prior to Oct. 1950, monthly discharge only).

REVISED RECORD.--WSP 1213: 1946-48.

GAGE.--Water-stage recorders above and below intakes to record head and, since May 18, 1964, recorder to show gate openings. Datum of gage is: Forebay gage, sea level; tailrace gage, 274.13 ft, sea level. Aug. 7, 1950, to Nov. 30, 1952, water-stage recorder on tailrace and auxiliary recorder 0.5 mi downstream and Dec. 1, 1952, to Oct. 28, 1957, recording gage above and below former intake structure 0.2 mi upstream, at different datums.

REMARKS.--Records good. Daily diversions computed on basis of head on intake gates and gate openings. Records published herein represent flow diverted from Colorado River for irrigation. Return flows to Colorado River are measured by 10 wasteways and drains extending throughout the project; 5 of these are equipped with water stage recorders and Parshall flumes, 3 are equipped with Sparling flowmeters. Return flows have not been subtracted; combined monthly return flows are given in table below.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,360 ft³/s July 30, 1981; no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1340	1020	731	0.00	1070	1330	1440	1600	2130	2040	2200	1570
2	1350	1050	629	0.00	880	1320	1760	1660	1720	2030	2100	1760
3	1340	931	1120	0.00	803	1140	1780	1680	1920	1970	2010	1910
4	1360	734	945	0.00	1030	1220	1750	1640	1940	1930	1740	1760
5	1250	874	894	0.00	1230	1110	1780	1440	1830	1940	2090	1790
6	1030	944	915	0.00	1220	1370	1650	1670	1900	2020	2070	1380
7	841	990	991	0.00	1050	1390	1350	1800	1970	1850	2050	1130
8	1180	840	821	0.00	1050	1210	1480	2140	1930	2050	2000	950
9	1200	958	640	0.00	830	1130	1560	2030	1590	2070	2000	691
10	1260	894	941	0.00	726	738	1500	1920	1840	2140	1910	445
11	1240	796	962	320	961	1060	1570	1680	1780	2090	1640	528
12	1170	851	961	552	1090	1020	1520	1500	1800	2060	2000	663
13	1010	825	811	603	1150	1100	1520	1780	2010	2060	2050	772
14	763	918	872	767	1240	1080	1430	1780	2010	2080	2000	744
15	1040	1120	834	1140	1130	1110	1610	1770	1840	2130	2150	709
16	1200	1210	772	1400	1020	1130	1850	1890	1730	2150	2050	1390
17	1070	819	967	1660	889	841	1860	1780	1940	2140	2020	1600
18	1200	793	1050	1620	1150	1160	1740	1690	1870	2120	1990	1700
19	1100	943	1050	1470	1100	1320	1690	1580	1850	2210	2090	1890
20	1080	942	1140	1050	1310	1390	1510	1830	1930	2040	2090	1750
21	987	932	1160	1370	1310	1330	1340	1860	1980	1810	2070	1620
22	968	666	928	1260	1250	1350	1540	1830	1840	2280	1910	1400
23	1050	829	605	1210	1150	1360	1660	1740	1570	2260	1990	1730
24	1130	826	553	1030	891	1180	1740	1870	1690	2230	1750	1500
25	1210	657	520	930	1040	1290	1570	1940	1930	2080	1600	1470
26	1110	928	1270	885	1060	1430	1570	1620	2160	2070	1940	1460
27	1130	973	1580	694	1120	1480	1690	1750	2340	2060	2040	1470
28	1010	937	1680	843	1180	1590	1430	1740	2180	1880	2090	1220
29	1080	940	1230	925	---	1540	1760	1680	2020	2130	1940	1150
30	951	986	182	935	---	1330	1700	1850	1830	2240	1980	1470
31	1070	---	0.01	1080	---	951	---	2130	---	2340	1770	---
TOTAL	34720	27126	27754.0	21744.0	29930	38000	48350	54870	57070	64500	61330	39622
MEAN	1120	904.2	895.3	701.4	1069	1226	1612	1770	1902	2081	1978	1321
MAX	1360	1210	1680	1660	1310	1590	1860	2140	2340	2340	2200	1910
MIN	763	657	0.01	0.00	726	738	1340	1440	1570	1810	1600	445
AC-FT	68870	53800	55050	43130	59370	75370	95900	108800	113200	127900	121600	78590
(*)	44100	36640	38240	31660	32300	37260	37190	40580	32270	40940	40750	40640
CAL YR 2001	TOTAL 476293.0	MEAN 1305	MAX 2320	MIN 0.00	AC-FT 944700	(*) 452100						
WTR YR 2002	TOTAL 505016.0	MEAN 1384	MAX 2340	MIN 0.00	AC-FT 1002000	(*) 457600						

(*) Return flow, in acre-feet, to the Colorado River.

COLORADO RIVER MAIN STEM

09429100 COLORADO RIVER BELOW PALO VERDE DAM, AZ-CA

LOCATION.--Lat 33° 43'10", long 114° 29'50", in NE1/4 sec. 2, T.4 N., R.22 W., Gila and Salt River meridian, in Riverside County, CA, Hydrologic Unit 15030104 on right bank 1.2 mi downstream from Palo Verde Diversion Dam, 9.5 mi northeast of Blythe, CA and 11 mi upstream from Ehrenberg, AZ.

DRAINAGE AREA.--186,200 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

PERIOD OF RECORD.--Mar. 1956 to Mar. 1969, Oct. 1988 to current year. If records for the two Colorado River Indian Reservation drains entering below Palo Verde Dam are subtracted from records for this station, records equivalent to those published 1969--1988 as "Colorado River at Palo Verde Dam" can be obtained.

GAGE.--Water-stage recorder. Datum of gage is 260.00 ft above sea level. Mar. 1956 to Mar. 1969, at site 120 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records fair. Many diversions above station for irrigation, municipal, and industrial uses. Flow regulated by Lake Mead, Lake Mohave, and Lake Havasu.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,300 ft³/s Mar. 21, 1958; maximum gage height, 17.94 ft May 4, 1958; minimum daily discharge, 875 ft³/s Jan. 9, 1995.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum daily discharge, 42,300 ft³/s June 30, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,900 ft³/s May 13 at 0300, gage height, 9.46 ft. Minimum daily discharge, 1,870 ft³/s Jan. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7510	5750	5210	6160	4880	8140	11500	12000	10700	10500	9420	9720
2	7680	5380	5470	5870	5780	10300	11700	10200	10800	10300	8200	9640
3	7030	5570	4980	4930	6520	9920	11600	9670	10700	10200	9920	8610
4	6950	6510	5650	4340	6370	8440	11100	9730	10600	10500	10100	8390
5	4960	6210	5070	4290	5600	9610	10100	10900	9600	9240	10000	9630
6	6360	6600	5040	4790	5710	9630	11800	10900	9520	11700	10000	6960
7	8250	6990	4730	5700	5310	9190	12100	11400	7790	11600	9790	7980
8	7390	6590	5040	1870	5580	8310	11700	10900	10600	12600	9170	9480
9	7010	5490	5490	5140	6230	9140	11400	10300	10500	11700	7750	9930
10	5420	6220	5350	4810	7120	9730	10800	10500	10400	12200	8760	7370
11	5700	6780	5130	4600	7590	10300	10200	10800	11300	10500	9460	6440
12	4950	6460	5200	4180	8270	11000	9880	11400	11000	9370	9560	6770
13	7290	6150	5010	5430	8050	9700	11100	10800	9190	10400	10100	7430
14	7530	6260	4400	5460	7640	7910	11500	11000	7660	10600	10600	6160
15	7940	5160	4980	5980	6790	9100	12000	10400	9990	10800	8390	6280
16	7890	4690	5560	5750	7130	10200	12200	9680	9670	11100	7120	5770
17	8180	5030	5220	4260	7910	10400	12900	8000	9370	10800	9160	6740
18	7300	6010	5160	3590	7620	10200	11200	10200	9960	9450	9230	10900
19	5440	6750	5470	5190	7430	9970	10600	10500	10100	8510	9370	10000
20	6960	5510	5140	6050	6830	10300	12100	9930	9940	9910	9340	9440
21	7650	4320	4540	5260	7400	9670	12200	10400	8820	10600	9850	9610
22	7160	6110	4250	5640	7430	8900	12100	10500	10100	10100	9430	11400
23	6910	4530	2820	5600	8380	10100	12300	9360	10700	10200	8110	10800
24	6160	5900	3770	5040	8490	10500	12200	7100	10600	10400	8810	10400
25	5300	6020	4220	3600	8680	10000	11800	8310	10200	11700	9320	7780
26	5510	5870	4320	5750	10500	11200	9380	8970	10400	11300	8980	7520
27	5150	5140	3860	5760	9190	10700	11800	9300	9690	11200	7220	7630
28	5970	5170	2410	5560	9850	11200	11400	9810	9670	11000	7640	7910
29	6020	4610	2890	6530	---	9100	10500	11600	9380	10900	8410	8920
30	5120	5090	4590	5170	---	11900	12700	10000	11100	10300	7460	8640
31	5890	---	4380	5270	---	12600	---	7930	---	10200	9130	---
TOTAL	204580	172870	145350	157570	204280	307360	343860	312490	300050	329880	279800	254250
MEAN	6599	5762	4689	5083	7296	9915	11460	10080	10000	10640	9026	8475
MAX	8250	6990	5650	6530	10500	12600	12900	12000	11300	12600	10600	11400
MIN	4950	4320	2410	1870	4880	7910	9380	7100	7660	8510	7120	5770
AC-FT	405800	342900	288300	312500	405200	609600	682000	619800	595100	654300	555000	504300
CAL YR 2001	TOTAL 2978940	MEAN 8161	MAX 13200	MIN 1770	AC-FT 5909000							
WTR YR 2002	TOTAL 3012340	MEAN 8253	MAX 12900	MIN 1870	AC-FT 5975000							

COLORADO RIVER MAIN STEM

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA

LOCATION.--Lat 32° 52' 59", long 114° 27' 55", at Imperial Dam. The Arizona end of the dam is in SW_{1/4}NW_{1/4} sec. 30, T.6 S., R.21 W., Gila and Salt River meridian, Yuma County, Hydrologic Unit 15030104; the California end is in NW_{1/4}SW_{1/4} sec. 9, T.15 S., R.24 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030104. Imperial Dam is 5 mi upstream from Laguna Dam, 15 mi northeast of Yuma, AZ, 90 mi downstream from Palo Verde Dam, and 147 mi downstream from Parker Dam.

DRAINAGE AREA.--188,500 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1903-34 (yearly discharge only, published in WSP 1313), July 1934 to current year (monthly discharge only Oct. 1942 to Sept. 1979). Prior to Oct. 1942 published as "near Picacho, Ca." Oct. 1942 to Sept. 1971 published as "at Imperial Dam" (monthly discharge shown as "flow reaching Imperial Dam," listed as supplement to "flow passing Imperial Dam").

GAGE.--None. This record is synthesized from records of several other stations (see REMARKS). July 13, 1934, to Sept. 30, 1942, water-stage recorder at site 14.5 mi upstream at datum 167.38 ft above sea level.

REMARKS.--Records show flow of Colorado River reaching Imperial Dam, and are based on combined daily total flow of Colorado River below Imperial Dam (sta 09429500), All-American Canal near Imperial Dam (sta 09523000), Gila Gravity Main Canal at Imperial Dam (sta 09522500), and diversions to Mittry Lake (sta 09522400). Records for 1903-34 and for Oct. 1942 to Sept. 1960 were computed as combined flow of Colorado River at Yuma (sta 09521000) and the canals diverting at Imperial and Laguna Dams, less the flow of Gila River near Dome (sta 09520500); for some of these periods drainage and waste return flows and channel losses between the gaging stations and Imperial Dam were considered, and for other periods they were neglected. Records for Oct. 1960 to Sept. 1979 are based on combined monthly total flow of same stations on which daily flows are currently based. Records for July 1934 to Sept. 1942 show daily discharge of Colorado River at gaging station near Picacho, CA, water withdrawals, and diversions for irrigation, municipal, and industrial uses, and return flows from irrigated areas. Diversions to Mittry Lake, which began June 23, 1970, are included in river records in table below. Additional regulation, beginning Jan. 31, 1966, to equalize supplies for downstream water users, is provided by pumped storage in reservoir on Senator Wash, about 2 mi upstream from Imperial Dam. Monthend contents of Senator Wash Reservoir—capacity, 13,840 acre-ft—is given in table below.

COOPERATION.--Records of Sparling meter readings of diversion to Mittry Lake furnished by Imperial Irrigation District and contents of Senator Wash Reservoir furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF 1934-2002.--Maximum discharge, 40,800 ft³/s Sept. 5, 1939; minimum, 538 ft³/s Aug. 3, 1934; minimum daily since regulation of Hoover Dam began, 1,450 ft³/s Feb. 17, 1935.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8020	6900	5620	3740	6740	9460	11400	10600	9440	10100	10700	7480
2	7920	6330	5150	5460	5810	9260	12000	11100	8960	10600	10200	8480
3	8090	6180	5730	5840	5190	9510	12100	11900	10600	10700	9140	8990
4	8010	5700	5650	5950	6380	10700	12100	10800	11000	10600	8540	8690
5	7820	6940	5890	5520	6860	9690	11500	9920	10600	10400	9490	8940
6	7350	7240	6230	5120	6980	8900	11100	10100	10500	9660	9400	8520
7	6620	6980	6310	5560	6980	8680	10900	10600	10400	9590	9340	8420
8	7630	7010	5980	5720	6430	9140	11500	10500	9360	11200	9810	7710
9	7900	6770	5350	6200	6310	9020	11800	10800	9040	10900	9810	8110
10	8140	6390	6060	7090	6020	9170	11900	11000	10200	11100	8950	9190
11	8230	6290	6080	5820	7620	9380	11800	10600	10300	11400	8110	9140
12	7840	6750	5890	5620	8190	9400	11200	10700	10400	11500	9400	7530
13	7040	6870	6330	4980	8160	9890	10200	10900	10600	10600	9820	6910
14	6370	6960	6130	6110	8170	10100	10000	11300	10700	9590	9710	6980
15	7840	6720	5320	6180	7680	9630	11200	11100	8840	10700	9730	7010
16	7880	6470	4880	6190	7050	8630	11600	10600	8690	10600	9670	7110
17	8150	6080	5790	6300	7140	9360	12000	10400	9750	10600	9070	7970
18	8070	5810	6040	6130	7770	9680	12300	9120	9980	10900	8520	7680
19	7990	6580	6160	5650	8320	10200	12000	9010	10100	10500	9330	7860
20	7440	6890	6100	4870	8810	10400	11400	9880	10000	9500	9360	8530
21	6990	6200	5940	6100	8880	10500	10900	10200	9980	8960	9170	8490
22	7670	5060	5340	6240	8370	10400	11500	9750	9070	10100	8800	8120
23	8130	5740	4670	6470	8420	9680	11800	10300	8610	10600	8530	9260
24	7910	6260	4150	6490	7820	9400	11600	10200	10100	10400	8740	9780
25	7310	6010	3820	6280	9060	10300	12000	8900	10600	10800	7980	10400
26	6900	6620	4870	5480	8970	10600	11800	8010	10600	11000	8630	9750
27	6210	6850	5380	4940	8880	10900	11000	8970	10100	9830	9180	8740
28	6430	6230	5250	6360	9340	11200	9780	9660	10300	9830	9050	7960
29	6640	6830	5020	6490	---	10700	11000	9850	9180	10700	9230	7320
30	6870	6480	4320	6380	---	9960	11400	10000	8690	10600	8760	8570
31	6860	---	3750	6920	---	10200	---	10100	---	10700	7950	---
TOTAL	232270	194140	169200	182200	212350	304040	342780	316870	296690	324260	284120	249640
MEAN	7493	6471	5458	5877	7584	9808	11430	10220	9890	10460	9165	8321
MAX	8230	7240	6330	7090	9340	11200	12300	11900	11000	11500	10700	10400
MIN	6210	5060	3750	3740	5190	8630	9780	8010	8610	8960	7950	6910
AC-FT	460700	385100	335600	361400	421200	603100	679900	628500	588500	643200	563600	495200
(*)	6007	3719	1625	2834	1752	1830	7664	9884	11041	7824	5138	8070
(**)	861	833	778	799	722	738	833	799	774	799	799	774

CAL YR 2001 TOTAL 3073980 MEAN 8422 MAX 12500 MIN 3750 AC-FT 6097000 (**) 10420
WTR YR 2002 TOTAL 3108560 MEAN 8517 MAX 12300 MIN 3740 AC-FT 6166000 (**) 9510

(*) Monthend contents, in acre-feet, for Senator Wash Reservoir.
(**) Diversion, in acre-feet, to Mittry Lake (09522400).

COLORADO RIVER MAIN STEM

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	E COLI, MTEC MF WATER (COL/ 100 ML) (31633)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ANTI- MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIIUM, DIS- SOLVED (UG/L AS BA) (01005)	BARIIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BORON, DIS- SOLVED (UG/L AS B) (01020)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)
AUG 22...	E13k	E13k	<1	<1	2	2	95.7	98.0	<1	<1	148	148	<.5
NOV 08...	<1	E2K	<1	<1	2	2	95.0	92.0	<1	<1	147	144	<.5
JAN 23...	E4k	E3k	<1	<1	2	2	90.0	93.0	<1	<1	140	141	<.5
MAY 14...	>1	E6k	<1	<1	2	2	100	110	<1	<1	149	150	<.5
AUG 28...	E15k	23	<1	<1	3	5	110	110	<1	<1	153	157	<.5

Date	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)
AUG 22...	<.5	<1	<1	<2	<2	<2	222	<2	<2	3	29	<.10	<.1
NOV 08...	<.5	<1	<1	<2	<2	<2	135	<2	<2	2	19	<.10	<.1
JAN 23...	<.5	<1	<1	<2	<2	<2	143	<2	<2	3	22	<.10	<.1
MAY 14...	<.5	<1	<1	<2	<2	<2	233	<2	<2	2	32	<.10	<.1
AUG 28...	<.5	<1	<1	<2	<2	<2	126	<2	<2	2	19	<.10	<.1

Date	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	STRON- TIUM, TOTAL RECOV- ERABLE (UG/L AS SR) (01082)	THAL- LIUM, DIS- SOLVED (UG/L AS TL) (01057)	THAL- LIUM, TOTAL (UG/L AS TL) (01059)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	SEDI- MENT, DIS- SUS- PENDEd (MG/L) (80154)	SEDI- MENT, DIS- SUS- PENDEd (T/DAY) (80155)
AUG 22...	<1	<1	<1	1	<1	<1	1100	<2	<2	<2	<2	14	272
NOV 08...	<1	<1	<1	1	<1	<1	1140	<2	<2	<2	<2	8.0	--
JAN 23...	<1	2	1	1	<1	<1	1080	<2	<2	<2	<2	9.0	136
MAY 14...	1	1	2	2	<1	<1	1100	<2	<2	4	2	21	460
AUG 28...	<1	3	2	2	<1	<1	1110	<2	<2	<2	<2	25	--

Remark codes used in this report:
 < -- Less than
 > -- Greater than
 E -- Estimated value
 k -- Counts outside acceptable range

COLORADO RIVER MAIN STEM

09429500 COLORADO RIVER BELOW IMPERIAL DAM, AZ-CA

LOCATION.--Forebay gage: Lat 32° 52'59", long 114° 27'57", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 9, T.15 S., R.24 E., San Bernardino meridian, in Imperial County, CA, Hydrologic Unit 15030107, near All-American Canal headworks at east (revised) end of Imperial Dam, 5 mi upstream from Laguna Dam, 15 mi northeast of Yuma, AZ, 90 mi downstream from Palo Verde Dam, and 147 mi downstream from Parker Dam.

DRAINAGE AREA.--188,500 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

PERIOD OF RECORD.--Oct. 1960 to current year. Prior to Oct. 1971 published as "at Imperial Dam." Records of flow reaching Imperial Dam, formerly published with this station, are now published separately as sta 09429490, "Colorado River above Imperial Dam."

GAGE.--Water-stage recorder in forebay, 12 calibrated gates on California sluiceway, 8 calibrated gates on Gila sluiceway, and calibrated manometer on each discharge pipe from desilting basin. Datum of forebay gage is 162.00 ft, U.S. Bureau of Reclamation datum. Prior to Aug. 21, 1991, forebay gage located at west end of Imperial Dam at same datum.

REMARKS.--No estimated daily discharges. Records good. Records of daily discharge show flow of Colorado River passing Imperial Dam, and include water released to river through California and Gila sluiceways, sludge from desilting basins returned to river, and leakage through dam. For records of flow reaching Imperial Dam see sta 09429490. Flow of Colorado Rivers regulated by many reservoirs, principally Lake Mead, since 1935. Many diversions from Colorado River and tributaries above station. Diversion to Mittry Lake and monthend contents of Senator Wash Reservoir also are published with sta 09429490.

COOPERATION.--Records of gate openings and sludge return flow from desilting basins furnished by Imperial Irrigation District.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 30,200 ft³/s Aug. 18 and 19, 1983. Minimum daily discharge, 27 ft³/s Dec. 15--18, 1969.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	561	300	300	300	300	420	794	400	400	400	380	397
2	561	300	300	300	300	951	794	840	782	659	380	405
3	688	300	300	300	394	2250	794	2130	917	429	380	547
4	399	396	300	443	300	3440	794	2000	1560	400	482	466
5	290	400	300	347	300	2270	875	1800	683	400	380	405
6	375	488	300	325	300	1190	1310	425	400	400	380	627
7	357	300	300	326	300	1160	1670	400	400	400	381	1460
8	300	300	300	327	300	2110	826	400	400	400	770	1590
9	488	300	300	300	300	2790	783	610	400	400	422	1040
10	546	300	300	300	300	3580	785	819	400	400	380	1690
11	300	768	300	300	300	1750	778	1630	400	538	380	2250
12	300	395	300	300	300	1160	766	2960	400	813	380	542
13	300	464	300	300	300	462	774	1510	831	614	380	466
14	300	366	300	300	300	400	951	1600	1160	438	380	1210
15	300	352	300	300	300	510	806	1350	422	413	547	1430
16	300	415	300	300	361	408	640	497	432	400	380	380
17	300	300	300	300	989	1860	524	561	624	400	380	380
18	318	300	300	300	543	983	400	400	428	585	380	380
19	529	300	300	300	461	786	400	1230	400	400	380	380
20	1030	408	300	300	300	802	745	757	400	400	380	380
21	1150	441	300	300	300	799	833	788	400	400	380	380
22	449	527	300	300	300	799	526	524	400	400	380	447
23	1100	447	300	300	420	801	449	1130	400	400	505	380
24	935	908	300	300	420	802	400	1260	400	400	1230	654
25	532	1050	358	300	420	801	400	1400	400	400	1180	591
26	479	992	300	300	420	634	400	999	400	400	453	480
27	387	1180	300	300	420	400	735	401	400	416	780	380
28	1100	300	300	300	420	400	400	400	400	963	540	380
29	300	300	300	404	---	400	400	400	400	400	380	380
30	300	300	300	300	---	517	400	400	535	400	380	380
31	300	---	300	300	---	802	---	400	---	566	380	---
TOTAL	15574	13897	9358	9672	10368	36437	21152	30421	15974	14434	14890	20877
MEAN	502.4	463.2	301.9	312.0	370.3	1175	705.1	981.3	532.5	465.6	480.3	695.9
MAX	1150	1180	358	443	989	3580	1670	2960	1560	963	1230	2250
MIN	290	300	300	300	300	400	400	400	400	400	380	380
AC-FT	30890	27560	18560	19180	20560	72270	41950	60340	31680	28630	29530	41410
CAL YR 2001	TOTAL 215437	MEAN 590.2	MAX 2970	MIN 270	AC-FT 427300							
WTR YR 2002	TOTAL 213054	MEAN 583.7	MAX 3580	MIN 290	AC-FT 422600							

COLORADO RIVER MAIN STEM

09429600 COLORADO RIVER BELOW LAGUNA DAM, AZ-CA

LOCATION--Lat 32° 48' 44", long 114° 30' 51", in SE1/4NE1/4 sec. 35, T.15 S., R.24 E., San Bernardino meridian, in Imperial County, CA, Hydrologic Unit 15030107, on right bank 1.4 mi downstream from Laguna Dam, 2.8 mi northeast of Bard, CA, and 10 mi northeast of Yuma, AZ.

DRAINAGE AREA--188,600 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

PERIOD OF RECORD--Dec. 1971 to current year.

GAGE--Water-stage recorder. Datum of gage is 120.81 ft above sea level (Bureau of Reclamation benchmark).

REMARKS--No estimated daily discharges. Records fair. Natural flow of Colorado River at this point is affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation, municipal, and industrial uses, and return flows from irrigated areas. Flow past station consists mainly of water released through Imperial Dam, sludge from the desilting basins at Imperial Dam, seepage through Imperial Dam, and seepage from the All-American Canal and the Gila Gravity Main Canal.

EXTREMES FOR PERIOD OF RECORD--Maximum daily discharge, 30,900 ft³/s Aug. 19, 1983; minimum daily, 71 ft³/s May 29, 1973.

EXTREMES FOR CURRENT YEAR--Maximum daily discharge, 4,390 ft³/s Mar.10. Minimum daily discharge, 256 ft³/s July 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	553	426	433	350	319	402	716	786	734	505	345	444
2	550	403	413	347	317	457	740	776	768	573	400	470
3	556	392	401	345	317	1680	742	1620	904	661	401	509
4	712	390	390	349	327	3340	747	1850	1420	759	405	509
5	527	414	371	368	324	3220	786	1670	1080	622	424	517
6	482	433	365	367	321	1480	1180	1230	725	366	447	529
7	471	439	356	361	320	1990	1450	937	663	256	481	976
8	477	418	336	354	316	2790	1060	900	612	658	529	1960
9	443	403	337	349	311	3440	849	875	563	535	586	1290
10	521	381	345	335	310	4390	862	961	513	444	563	1890
11	511	399	345	328	312	2410	872	1430	464	458	540	3170
12	452	495	347	328	312	1450	891	2440	417	577	517	944
13	412	510	349	326	311	747	906	1760	449	471	499	498
14	392	453	354	323	314	500	1060	1570	1210	465	488	960
15	378	449	352	318	315	492	1080	1450	532	608	518	1810
16	375	450	358	320	323	495	911	1140	415	635	572	660
17	376	440	361	320	440	1370	720	1090	469	470	470	697
18	373	422	363	317	636	1870	646	1020	616	457	454	533
19	407	403	364	315	522	1140	785	1000	740	509	438	435
20	632	401	364	313	407	725	857	1190	554	448	448	422
21	1160	386	367	315	373	713	915	1140	372	428	449	383
22	822	428	362	319	367	713	854	1090	269	424	449	395
23	955	437	363	312	374	716	800	1070	297	421	462	426
24	1140	832	366	311	383	725	767	1200	314	418	831	451
25	868	1120	367	317	394	727	761	1490	327	415	1500	436
26	548	981	373	314	680	669	755	1150	339	413	843	465
27	489	1570	365	315	583	495	782	1110	348	418	607	412
28	947	386	359	314	405	487	801	981	374	555	707	410
29	558	337	355	322	---	486	806	874	400	620	692	408
30	467	403	346	326	---	488	968	839	442	603	573	408
31	448	---	341	322	---	644	---	775	---	421	435	---
TOTAL	18002	15401	11268	10220	10633	41251	26069	37414	17330	15613	17073	23417
MEAN	580.7	513.4	363.5	329.7	379.8	1331	869.0	1207	577.7	503.6	550.7	780.6
MAX	1160	1570	433	368	680	4390	1450	2440	1420	759	1500	3170
MIN	373	337	336	311	310	402	646	775	269	256	345	383
AC-FT	35710	30550	22350	20270	21090	81820	51710	74210	34370	30970	33860	46450
CAL YR 2001	TOTAL 224799	MEAN 615.9	MAX 3560	MIN 331	AC-FT 445900							
WTR YR 2002	TOTAL 243691	MEAN 667.6	MAX 4390	MIN 256	AC-FT 483400							

GILA RIVER BASIN

09432000 GILA RIVER BELOW BLUE CREEK, NEAR VIRDEN, NM

LOCATION.--Lat 32° 38'53", long 108° 50'43", in SE1/4SW1/4 sec. 18, T.19 S., R.19 W., Grant County, Hydrologic Unit 15040002, on left bank at head of canyon, 1.4 mi downstream from Blue Creek, 10 mi east of Virden, and 16 mi upstream from New Mexico-Arizona State line.

DRAINAGE AREA.--3,203 mi², excluding Animas River basin.

PERIOD OF RECORD.--May to Nov. 1914, Mar. to Sept. 1915, July 1927 to current year. July 1927 to May 1931 monthly discharge only, published in WSP 1313, computed as sum of flow at Virden Bridge, 9 mi downstream, and in Sunset Canal. Published as "Gila River near Duncan, Ariz.," 1914--15 and as "Gila River at Fuller's Ranch, near Duncan, Ariz.," 1931--38.

REVISED RECORDS.--WSP 1283: Drainage area. WSP 1313: 1929, 1931--32(M).

GAGE.--Water-stage recorder. Elevation of gage is 3,875 ft above sea level, from river-profile map. May 11, 1914, to Sept. 30, 1915, at site 6 mi downstream, 1,000 ft upstream from intake of Sunset Canal. June 1 to July 7, 1931, nonrecording gage at present site and datum. Since Apr. 18, 1980, supplementary gage on left bank 800 ft downstream at same datum. Since June 1980, crest-stage gages at supplementary gage site. Since Nov. 1990, water-stage recorder at supplementary gage.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Station is above all Duncan Valley diversions. Diversions for irrigation of about 6,200 acres above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,700 ft³/s Dec. 19, 1978, gage height, 29.00 ft, from rating curve extended above 38,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 1 ft³/s July 14, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,900 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 12	0615	*6,830	*8.95

Minimum daily discharge, 3.0 July 13--14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	e71	e91	e97	e91	e66	70	e41	14	3.2	e70	26
2	53	e73	e92	e98	e91	e66	66	38	13	3.2	e70	28
3	52	e74	e89	e99	e92	e67	66	37	12	3.2	e120	28
4	55	e72	e84	e97	e93	e67	67	37	11	3.2	e105	25
5	55	e68	e87	e99	e97	e68	68	38	e10	3.2	e125	25
6	56	e67	e86	e97	e98	69	67	40	e10	3.2	e150	28
7	55	e72	e85	e98	e99	69	67	39	e9.9	3.2	e215	30
8	51	e76	e84	e98	e98	67	64	38	e9.8	3.4	e130	35
9	52	e78	e93	e97	e97	68	64	e37	e9.7	3.7	e200	70
10	56	e78	e94	e96	e96	70	63	e36	e9.5	6.6	e250	57
11	58	e79	e95	e94	e95	63	60	e35	e8.9	4.2	e140	612
12	58	e77	e98	e88	e95	59	59	e35	e8.7	3.2	e115	2360
13	60	e74	e99	e86	e93	63	61	e34	e8.5	3.0	e90	1090
14	63	e75	e99	e86	e94	64	59	e33	8.1	3.0	e75	647
15	64	e79	e100	e86	e93	64	59	e32	7.4	27	e55	411
16	63	e81	e100	e84	e92	67	59	32	6.7	36	e50	313
17	62	e82	e97	e83	e89	69	58	31	e6.0	49	e50	248
18	61	e84	e97	e82	e84	69	54	30	e5.0	51	e45	215
19	66	e84	e97	e80	e84	65	54	28	e4.5	58	e40	182
20	68	e82	e96	e84	e83	59	53	e27	e4.5	44	e40	155
21	62	e81	e98	e88	e83	59	55	e26	e4.5	39	e35	141
22	59	e83	e98	e87	e82	58	53	e25	e4.0	56	e30	127
23	63	e87	e96	e81	e80	58	51	e24	e4.0	51	e30	113
24	66	e88	e97	e79	e77	60	49	e23	e4.0	37	e30	102
25	65	e89	e97	e80	e73	65	50	e22	e3.5	36	e30	93
26	e65	e87	e96	e81	e69	63	49	e21	e3.3	31	e30	82
27	e68	e85	e96	e82	e63	64	50	e20	3.3	45	e30	74
28	e70	e89	e96	e85	e65	65	50	e19	3.2	213	e40	68
29	e66	e94	e96	e87	---	67	e45	e17	3.3	e300	28	63
30	e63	e92	e95	e88	---	67	e43	16	3.3	e115	25	59
31	e64	---	e94	e89	---	69	---	16	---	e80	24	---
TOTAL	1875	2401	2922	2756	2446	2014	1733	927	213.6	1317.5	2467	7507
MEAN	60.48	80.03	94.26	88.90	87.36	64.97	57.77	29.90	7.120	42.50	79.58	250.2
MAX	70	94	100	99	99	70	70	41	14	300	250	2360
MIN	51	67	84	79	63	58	43	16	3.2	3.0	24	25
AC-FT	3720	4760	5800	5470	4850	3990	3440	1840	424	2610	4890	14890
CFSM	0.02	0.02	0.03	0.03	0.03	0.02	0.02	0.01	0.00	0.01	0.02	0.08
IN.	0.02	0.03	0.03	0.03	0.03	0.02	0.02	0.01	0.00	0.02	0.03	0.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2002, BY WATER YEAR (WY)

	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
MEAN	161.2	138.5	246.3	304.8	351.0	421.5	267.4	148.6	50.10	74.99	201.8	202.1																																																											
MAX	1667	1040	2485	4158	1752	1464	1138	977	298	366	1164	1507																																																											
(WY)	1973	1995	1979	1993	1993	1973	1973	1992	1992	1986	1988	1975																																																											
MIN	5.39	34.9	47.6	64.0	61.1	45.1	27.7	13.5	4.43	4.85	9.35	4.89																																																											
(WY)	1957	1957	1957	1981	1971	1971	1955	1956	1956	1951	1951	1953																																																											

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1932 - 2002
ANNUAL TOTAL	47442	28579.1	
ANNUAL MEAN	130.0	78.30	208.8
HIGHEST ANNUAL MEAN			746
LOWEST ANNUAL MEAN			43.1
HIGHEST DAILY MEAN	620	2360	33100
LOWEST DAILY MEAN	14	3.0	1.7
ANNUAL SEVEN-DAY MINIMUM	15	3.2	2.0
ANNUAL RUNOFF (AC-FT)	94100	56690	151300
ANNUAL RUNOFF (CFSM)	0.041	0.024	0.065
ANNUAL RUNOFF (INCHES)	0.55	0.33	0.89
10 PERCENT EXCEEDS	276	98	444
50 PERCENT EXCEEDS	101	66	93
90 PERCENT EXCEEDS	39	9.8	22

e Estimated

09442000 GILA RIVER NEAR CLIFTON, AZ

LOCATION--Lat 32° 57' 57", long 109° 18' 35", in NE1/4SE1/4 sec. 25, T.5 S., R.29 E., Greenlee County, Hydrologic Unit 15040002, on right bank 60 ft upstream from bridge on county road, 6 mi upstream from San Francisco River, and 6 mi south of Clifton.

DRAINAGE AREA--4,010 mi².

PERIOD OF RECORD--Nov. 1910 to July 1918 (published as "at Guthrie"), Oct. 1927 to Sept. 1989, Oct. 1989 to current year, operated as a crest-stage partial-record station, Oct. 1995 to Sept. 1996. Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS--WSP 1059: 1911-12, 1915, 1917. WSP 1179: 1929(M), 1934(M). WSP 1283: Drainage area.

GAGE--Water-stage recorder. Datum of gage is 3,336.38 ft above sea level. Nov. 6, 1910, to July 11, 1918, nonrecording gage or water-stage recorder at two sites about 6 mi upstream at Guthrie at different datums. Mar. 1928 to June 1948 water-stage recorder at present site at datum 0.91 ft lower. June 1948 to Oct. 17, 1967, water-stage recorder at site 0.2 mi upstream at datum 3.12 ft higher. Oct. 18, 1967, to June 23, 1974, Apr. 10, 1978, to Feb. 6, 1979, at site 500 ft downstream at datum 0.44 ft higher. June 24, 1974, to Apr. 9, 1978, at present site and datum.

REMARKS--Records fair except for estimated daily discharges, which are poor. Diversions for irrigation of about 14,300 acres above station. Station is below all Duncan Valley diversions.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 57,000 ft³/s Dec. 19, 1978, gage height, 23.80 ft, from rating curve extended above 28,000 ft³/s; minimum daily, 3.7 ft³/s July 27, 1987.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 2,500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 7	unknown	*4,020	*7.63

Minimum daily discharge, 16 ft³/s July 7-8; July 19-20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e45	40	66	85	81	61	37	33	24	19	e50	38
2	e40	40	65	85	82	54	38	33	24	18	36	44
3	e40	41	65	85	85	52	37	33	23	19	76	35
4	e35	41	66	86	86	49	37	31	23	19	e665	28
5	e30	43	64	86	87	48	34	31	23	20	244	28
6	27	47	61	86	87	53	34	31	23	19	182	26
7	27	44	62	86	88	54	33	31	23	16	e773	25
8	27	43	61	88	87	54	33	31	23	16	188	25
9	28	45	61	89	87	49	34	31	23	18	189	33
10	28	49	62	90	87	46	33	30	24	20	235	50
11	27	52	66	86	86	44	33	31	25	23	272	162
12	28	55	70	85	87	43	32	30	25	19	196	e594
13	30	56	74	84	82	40	32	30	23	18	148	e820
14	32	56	78	83	81	38	31	30	23	17	121	525
15	33	55	82	77	79	37	31	30	21	26	102	301
16	36	56	85	75	79	37	32	30	21	19	87	e185
17	37	58	85	72	78	37	33	30	22	18	e135	e130
18	37	60	85	68	77	39	33	29	22	17	e45	e105
19	35	60	85	69	77	40	33	29	22	16	e35	e85
20	36	61	86	68	75	42	32	30	23	16	34	e65
21	39	62	86	68	75	41	32	28	21	30	34	e60
22	41	63	85	73	75	40	32	27	18	32	33	e50
23	40	63	86	77	74	39	32	26	17	58	33	e45
24	37	65	86	76	71	38	32	25	18	34	31	e45
25	38	67	85	77	69	38	31	25	18	34	31	e40
26	38	66	85	78	69	39	32	25	19	33	30	e40
27	38	65	87	78	67	41	32	26	19	32	29	e35
28	38	65	87	77	65	41	32	25	19	e334	29	32
29	40	63	87	79	---	39	32	25	19	e100	30	30
30	42	65	87	79	---	38	32	25	20	e105	28	28
31	42	---	86	80	---	38	---	24	---	e75	28	---
TOTAL	1091	1646	2376	2475	2223	1349	991	895	648	1240	4149	3709
MEAN	35.19	54.87	76.65	79.84	79.39	43.52	33.03	28.87	21.60	40.00	133.8	123.6
MAX	45	67	87	90	88	61	38	33	25	334	773	820
MIN	27	40	61	68	65	37	31	24	17	16	28	25
AC-FT	2160	3260	4710	4910	4410	2680	1970	1780	1290	2460	8230	7360

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 2002, BY WATER YEAR (WY)

MEAN	182.8	120.3	220.7	240.2	298.1	379.2	232.5	111.7	40.16	121.6	226.3	198.5
MAX	1754	806	2389	1355	1666	1765	1688	874	171	934	898	1208
(WY)	1973	2001	1915	1916	1915	1915	1915	1973	1973	1914	1988	1975
MIN	8.66	10.7	17.3	42.5	24.0	20.5	12.3	11.7	9.37	12.9	16.8	8.24
(WY)	1957	1957	1957	1954	1957	1957	1957	1954	1959	1963	1960	1956

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1911 - 2002

ANNUAL TOTAL	35586	22792	
ANNUAL MEAN	97.50	62.44	201.5
HIGHEST ANNUAL MEAN			930
LOWEST ANNUAL MEAN			42.5
HIGHEST DAILY MEAN	285	Mar 13	820
LOWEST DAILY MEAN	27	Jul 23	16
ANNUAL SEVEN-DAY MINIMUM	27	Oct 6	18
ANNUAL RUNOFF (AC-FT)	70580	45210	146000
10 PERCENT EXCEEDS	213	87	440
50 PERCENT EXCEEDS	78	40	78
90 PERCENT EXCEEDS	32	23	18

e Estimated

GILA RIVER BASIN

09444200 BLUE RIVER NEAR CLIFTON, AZ

LOCATION--Lat 33° 17'27", long 109° 11'44", in sec. 6, T.2 S., R.31 E. (unsurveyed), Greenlee County, Hydrologic Unit 15040004, in Apache National Forest, on right bank 0.1 mi downstream from county road crossing, 0.9 mi upstream from Clear Creek, 8 mi upstream from mouth, and 17 mi northeast of Clifton.

DRAINAGE AREA--506 mi².

PERIOD OF RECORD--Nov. 1967 to Sept. 1991, Oct. 1992 to Sept. 1995 (annual maximum only), Oct. 1995 to current year.

GAGE--Water-stage recorder. Elevation of gage is 4,160 ft above sea level, from topographic map.

REMARKS--Records fair.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 30,000 ft³/s Oct. 20, 1972, gage height, 22.56 ft, from rating curve extended above 960 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 1.4 ft³/s Oct. 18--20, 1978.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 800 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 23.....	1715	1,440	8.29
Aug. 19.....	1700	1,690	8.67
Sept. 11.....	0515	*5,590	*12.53

Minimum daily discharge, 0.91 ft³/s June 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	3.8	3.6	8.9	11	11	8.4	5.7	2.5	1.1	8.0	3.8
2	4.8	3.8	3.6	9.1	11	10	8.4	5.6	2.4	1.1	12	3.7
3	4.7	3.7	3.8	9.3	11	10	8.5	5.6	2.4	1.1	13	3.8
4	4.9	3.7	3.9	9.5	11	9.9	8.4	5.4	2.3	1.2	10	3.9
5	4.7	3.9	4.0	9.6	10	9.8	8.6	5.4	2.3	1.3	8.2	3.7
6	4.6	4.1	4.1	9.7	11	9.6	9.1	5.1	2.6	1.1	33	3.5
7	4.6	3.9	4.2	9.8	10	9.4	9.3	5.1	2.5	0.99	15	3.4
8	4.9	3.7	4.3	9.8	10	9.7	8.6	4.9	2.4	1.2	32	3.5
9	4.6	3.7	4.4	9.9	10	9.6	8.4	4.8	2.1	1.4	13	3.7
10	4.3	3.8	4.7	10	10	9.6	8.1	4.6	1.8	1.5	9.5	205
11	4.4	3.7	5.0	10	10	9.5	7.9	4.5	1.6	1.6	8.6	1310
12	4.4	3.7	5.1	10	10	9.5	7.6	4.5	1.5	1.7	8.1	153
13	4.5	3.6	5.2	11	10	9.5	7.6	4.4	1.4	1.4	7.8	74
14	4.4	3.6	5.4	11	10	9.6	8.1	4.3	1.3	1.3	7.6	47
15	4.4	3.5	5.5	11	10	9.7	8.5	4.2	1.2	1.5	8.8	33
16	4.4	3.5	5.6	10	10	9.8	8.9	3.9	1.2	1.7	11	24
17	4.3	3.5	6.0	10	10	9.8	9.1	3.7	1.0	2.1	13	19
18	4.2	3.6	6.5	11	10	9.8	9.1	3.7	1.1	2.0	10	18
19	4.2	3.5	6.7	11	10	9.7	8.8	3.6	1.0	2.7	97	16
20	4.2	3.5	7.0	11	10	9.5	8.6	3.5	0.96	2.2	36	14
21	4.2	3.4	7.2	10	9.9	9.0	8.0	3.5	0.91	2.1	17	12
22	4.2	3.4	7.4	10	9.9	8.9	6.8	3.5	1.5	1.2	11	11
23	4.2	3.5	7.5	10	10	9.0	6.2	3.4	1.2	109	8.9	10
24	4.1	3.5	8.1	11	9.9	9.2	5.8	3.4	1.1	52	7.3	9.0
25	3.9	3.5	8.2	10	10	9.2	5.9	3.3	1.0	16	6.0	8.1
26	3.8	3.6	8.3	10	10	9.2	5.9	3.2	1.2	14	5.0	7.2
27	3.8	3.6	8.4	10	10	9.1	5.9	3.3	1.2	20	4.3	6.0
28	3.9	3.5	8.4	10	10	9.1	5.8	3.1	1.0	25	4.3	5.4
29	3.8	3.6	8.5	11	---	9.2	5.8	2.9	1.0	33	5.5	4.8
30	3.7	3.6	8.5	11	---	9.1	5.5	2.8	1.1	21	4.5	4.6
31	3.7	---	8.7	11	---	8.4	---	2.6	---	11	4.1	---
TOTAL	133.8	109.0	187.8	315.6	284.7	294.4	231.6	127.5	46.77	345.29	439.5	2024.1
MEAN	4.316	3.633	6.058	10.18	10.17	9.497	7.720	4.113	1.559	11.14	14.18	67.47
MAX	5.0	4.1	8.7	11	11	11	9.3	5.7	2.6	109	97	1310
MIN	3.7	3.4	3.6	8.9	9.9	8.4	5.5	2.6	0.91	0.99	4.1	3.4
AC-FT	265	216	373	626	565	584	459	253	93	685	872	4010

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2002, BY WATER YEAR (WY)

MEAN	92.19	53.39	75.07	74.36	115.8	154.3	117.8	56.30	15.26	27.46	47.35	46.77
MAX	1027	443	616	569	707	584	488	338	136	136	265	366
(WY)	1973	1979	1979	1979	1980	1983	1983	1973	1994	1994	1999	1975
MIN	2.58	3.63	3.69	5.35	8.04	8.94	6.69	3.85	1.56	2.42	8.73	2.94
(WY)	1983	2002	1977	1977	1971	1971	1971	2000	2002	2000	1975	2000

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1968 - 2002

ANNUAL TOTAL	12604.1	4540.06	
ANNUAL MEAN	34.53	12.44	68.22
HIGHEST ANNUAL MEAN			243
LOWEST ANNUAL MEAN			10.1
HIGHEST DAILY MEAN	524	Apr 6	1310
LOWEST DAILY MEAN	3.4	Nov 21	0.91
ANNUAL SEVEN-DAY MINIMUM	3.5	Nov 19	1.1
ANNUAL RUNOFF (AC-FT)	25000	9010	49420
10 PERCENT EXCEEDS	91	11	151
50 PERCENT EXCEEDS	12	5.9	18
90 PERCENT EXCEEDS	3.9	1.8	4.7

09444500 SAN FRANCISCO RIVER AT CLIFTON, AZ

LOCATION--Lat 33° 02' 58", long 109° 17' 43", in SW_{1/4}SE_{1/4} sec. 30, T.4 S., R.30 E., Greenlee County, Hydrologic Unit 15040004, on downstream side of right pier at Railroad Boulevard Bridge (U.S. Highway 191), at Clifton, 9.9 mi upstream from mouth.

DRAINAGE AREA--2,766 mi², of which 2 mi² is noncontributing.

PERIOD OF RECORD--Oct. 1910 to Mar. 1911, July 1911 to June 1912, Sept. 1912, Nov. 1912 to Mar. 1913, May 1913 to July 1918, July 1927 to current year. Monthly discharge only for some periods, published in WSP 1313. Published as "San Francisco River at dam above Clifton" in 1911 and under both names in 1912.

REVISED RECORDS--WSP 1049: 1911, 1913--15, 1917. WSP 1283: Drainage area. WSP 1313: 1927--30(M), 1932(M), 1934(M). WRD Ariz. 1972: 1917(M).

GAGE--Water-stage recorder. Datum of gage is 3,436.16 ft above sea level. See WSP 1713 or 1733 for history of changes prior to Apr. 7, 1959. Apr. 7, 1959, to Mar. 23, 1961, at site 1,140 ft downstream at datum 5.37 ft lower. July 18, 1980 to July 28, 1983, supplementary water-stage recorder 0.4 mi upstream on right bank at same datum and June 15, 1981, to Sept. 30, 1983, crest-stage gages at site. Aug. 4, 1983, to Mar. 1, 1985, supplementary water-stage recorder on right bank at main gage site at same datum, Oct. 1, 1992, at main gage site, at datum 10.00 ft higher.

REMARKS--Records fair, except for estimated daily discharges, which are poor. Diversions for mining, municipal use, and for irrigation of about 2,700 acres above station.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 90,900 ft³/s Oct. 2, 1983, gage height, 19.72 ft, from high-water mark, from rating curve extended above 30,000 ft³/s on basis of slope-area measurement at gage height 17.0 ft; minimum daily, 6.1 ft³/s June 21, 1971.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 2,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 11.....	2345	*7,330	*17.56

Minimum daily discharge, 6.8 ft³/s June 24.

DISCHARGE, CUBIC FEET PER SECOND, 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	43	64	74	74	68	58	36	14	9.9	e62	41
2	43	49	62	73	74	69	56	35	15	11	e53	61
3	45	49	60	70	75	69	53	34	14	11	62	57
4	46	47	62	70	78	69	51	29	15	14	84	50
5	48	47	65	74	78	70	54	32	15	16	81	46
6	49	50	65	73	76	71	55	35	14	10	120	42
7	50	51	64	73	75	71	58	36	16	9.7	129	39
8	51	51	64	73	74	68	58	36	17	10	90	41
9	51	52	63	73	74	64	56	34	16	11	104	43
10	47	53	63	74	72	62	53	31	15	9.0	134	41
11	52	54	64	77	71	57	52	32	14	16	124	1930
12	52	54	67	77	72	58	48	31	15	19	91	3640
13	53	56	67	75	72	61	50	31	15	19	67	982
14	48	57	66	74	72	60	49	31	14	17	55	445
15	46	58	66	74	70	60	47	25	14	13	50	291
16	47	59	67	75	69	64	45	26	13	20	46	224
17	45	56	66	81	65	64	46	27	12	30	42	165
18	39	54	66	80	64	65	44	26	10	27	42	132
19	43	55	66	81	66	66	43	25	11	19	46	109
20	45	59	66	80	67	60	43	24	11	22	143	95
21	45	60	67	79	66	63	40	23	11	23	92	84
22	47	60	66	78	66	65	43	23	11	23	66	76
23	50	61	67	77	65	64	42	21	9.6	29	57	69
24	51	59	68	77	64	63	41	21	6.8	91	47	65
25	50	59	68	76	64	63	39	20	7.5	54	43	61
26	50	60	68	75	61	61	37	19	9.0	47	39	60
27	49	61	68	76	61	57	39	18	8.8	43	36	54
28	50	62	67	76	65	57	38	17	9.0	54	38	56
29	49	63	68	76	---	58	38	17	8.1	62	42	56
30	48	64	68	76	---	59	38	17	9.8	82	44	56
31	43	---	69	77	---	59	---	14	---	70	45	---
TOTAL	1475	1663	2037	2344	1950	1965	1414	826	370.6	891.6	2174	9111
MEAN	47.58	55.43	65.71	75.61	69.64	63.39	47.13	26.65	12.35	28.76	70.13	303.7
MAX	53	64	69	81	78	71	58	36	17	91	143	3640
MIN	39	43	60	70	61	57	37	14	6.8	9.0	36	39
AC-FT	2930	3300	4040	4650	3870	3900	2800	1640	735	1770	4310	18070
CFSM	0.02	0.02	0.02	0.03	0.03	0.02	0.02	0.01	0.00	0.01	0.03	0.11
IN.	0.02	0.02	0.03	0.03	0.03	0.03	0.02	0.01	0.00	0.01	0.03	0.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2002, BY WATER YEAR (WY)

MEAN	230.3	133.1	249.6	295.1	351.6	441.9	324.5	160.7	56.11	99.80	198.1	154.1
MAX	4285	1450	2445	4204	2429	2136	2252	1244	310	657	1360	816
(WY)	1984	1979	1979	1993	1993	1915	1915	1973	1992	1915	1967	1975
MIN	23.3	28.2	33.5	37.0	38.8	43.9	36.3	23.7	11.0	28.5	40.6	21.5
(WY)	1954	1957	1954	1954	1954	1951	1955	1956	1956	1947	1960	1956

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1914 - 2002

ANNUAL TOTAL	48415	26221.2	
ANNUAL MEAN	132.6	71.84	222.1
HIGHEST ANNUAL MEAN			937
LOWEST ANNUAL MEAN			42.0
HIGHEST DAILY MEAN	751	Apr 7	3640
LOWEST DAILY MEAN	31	Jul 2	6.8
ANNUAL SEVEN-DAY MINIMUM	34	Jul 1	8.4
ANNUAL RUNOFF (AC-FT)	96030	52010	160900
ANNUAL RUNOFF (CFSM)	0.048	0.026	0.080
ANNUAL RUNOFF (INCHES)	0.65	0.35	1.09
10 PERCENT EXCEEDS	315	77	433
50 PERCENT EXCEEDS	73	56	75
90 PERCENT EXCEEDS	45	15	35

e Estimated

09445000 WILLOW CREEK DIVERSION FROM BLACK RIVER, NEAR MORENCI, AZ

LOCATION--Lat 33° 24'46", long 109° 43'08", in SW_{1/4} sec. 23, T.1 N., R.25 E. (unsurveyed), Graham County, Hydrologic Unit 15040005, in San Carlos Indian Reservation, on left bank just downstream from end of diversion pipeline, 3.6 mi northeast of Point of Pines, 5.0 mi southeast of pumping plant on Black River, and 29 mi northwest of Morenci.

PERIOD OF RECORD--Apr. 1945 to current year.

GAGE--Water-stage recorder and steel-edged rectangular weir. Datum of gage is 5,957.16 ft above sea level. Prior to June 26, 1946, at end of pipeline at that time, 3.5 mi upstream at datum about 50 ft higher.

REMARKS--No estimated daily discharges. Records good. The entire flow consists of Black River (head of Salt River) water, which is pumped into headwater of Willow Creek (tributary of Eagle Creek) for industrial and municipal supply in vicinity of Morenci.

AVERAGE DISCHARGE--57 years, 11.4 ft³/s, 8,220 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD--Maximum daily discharge, 28 ft³/s May 18, 19, 21--26, 1970; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	5.8	5.9	6.4	6.2	6.1	12	11	6.4	3.2	11	5.8
2	6.0	5.5	5.7	6.5	6.2	6.1	12	12	6.4	0.16	12	5.7
3	6.0	5.8	5.7	6.6	6.2	6.0	12	12	6.4	0.03	12	5.8
4	6.0	5.8	5.7	6.6	6.2	6.0	9.9	12	6.4	3.1	12	5.8
5	5.8	5.8	5.8	6.3	6.2	6.0	12	12	6.4	0.17	12	5.8
6	5.9	5.8	5.8	6.1	6.2	6.2	6.8	12	6.4	0.09	11	5.7
7	6.0	6.0	5.8	6.2	6.2	6.2	0.04	12	6.4	3.2	11	5.5
8	6.0	5.7	5.8	6.6	6.2	6.2	3.7	10	6.5	0.14	11	4.1
9	5.8	6.0	5.9	6.6	6.2	6.2	12	5.8	6.6	0.09	11	e0.00
10	5.9	6.0	6.0	6.4	6.1	6.2	12	5.8	5.7	3.1	10	e0.00
11	6.0	6.0	6.0	6.4	6.0	6.2	12	6.0	0.24	0.13	11	e0.00
12	5.9	6.0	6.0	6.6	6.0	6.1	12	5.9	0.04	0.07	11	e0.00
13	5.8	5.8	6.0	6.6	6.0	6.0	12	5.8	2.5	3.2	12	e0.00
14	5.8	5.7	6.0	6.5	6.0	6.2	12	5.9	0.00	0.12	12	e0.00
15	5.8	5.7	6.0	6.4	6.0	6.4	12	5.4	0.00	0.09	11	e0.00
16	5.8	5.6	5.9	5.9	6.0	6.4	12	5.9	2.7	2.8	12	e0.00
17	5.8	5.7	6.2	6.0	6.1	6.4	12	6.0	0.15	0.11	12	e0.00
18	5.8	5.7	6.5	6.2	6.1	6.4	12	6.1	0.02	0.04	12	e6.0
19	5.8	5.7	6.4	6.2	6.0	6.4	12	6.2	3.2	8.1	12	e12
20	5.8	5.8	6.5	6.3	6.0	6.4	12	6.2	0.14	10	12	e12
21	5.8	5.8	6.6	6.4	6.0	6.1	12	6.2	0.06	12	12	e12
22	5.8	5.8	6.5	6.4	6.0	5.8	12	6.2	3.0	12	12	e12
23	5.8	6.2	6.4	6.4	6.0	6.1	12	6.2	0.15	11	12	e12
24	5.8	6.4	6.4	6.3	6.0	6.2	12	6.4	0.07	11	11	e12
25	5.8	6.4	6.4	6.2	6.0	6.2	12	6.4	3.2	11	12	e12
26	5.8	6.4	6.4	6.2	6.0	6.3	8.7	6.4	0.76	12	12	e12
27	5.8	6.4	6.4	6.2	6.0	6.4	6.0	6.4	0.13	11	11	e12
28	5.8	6.4	6.4	6.2	6.0	6.4	6.0	6.4	3.2	11	8.0	e12
29	5.7	6.3	6.4	6.2	---	6.2	9.2	6.4	0.15	7.3	5.8	e12
30	5.8	6.2	6.4	6.2	---	9.3	11	6.4	0.07	11	5.7	e12
31	5.8	---	6.4	6.2	---	12	---	6.4	---	11	5.8	---
TOTAL	181.4	178.2	190.3	196.3	170.1	201.1	313.34	233.8	83.38	158.24	337.3	194.20
MEAN	5.852	5.940	6.139	6.332	6.075	6.487	10.44	7.542	2.779	5.105	10.88	6.473
MAX	6.0	6.4	6.6	6.6	6.2	12	12	12	6.6	12	12	12
MIN	5.7	5.5	5.7	5.9	6.0	5.8	0.04	5.4	0.00	0.03	5.7	0.00
AC-FT	360	353	377	389	337	399	622	464	165	314	669	385

CAL YR 2001 TOTAL 2677.42 MEAN 7.335 MAX 12 MIN 0.12 AC-FT 5310

WTR YR 2002 TOTAL 2437.66 MEAN 6.679 MAX 12 MIN 0.00 AC-FT 4840

e Estimated

09447000 EAGLE CREEK ABOVE PUMPING PLANT, NEAR MORENCI, AZ

LOCATION--Lat 33° 03'52", long 109° 26'30", in SW_{1/4}SE_{1/4} sec. 23, T.4 S., R.28 E., Greenlee County, Hydrologic Unit 15040005, on right bank 2 mi upstream from Phelps Dodge Corp. pumping plant, 5 mi west of Morenci, and 12 mi upstream from mouth.

DRAINAGE AREA--622 mi².

PERIOD OF RECORD--Apr. 1944 to current year.

REVISED RECORDS--WSP 1850-C: 1966. WDR AZ-88-1: Drainage area.

GAGE--Water-stage recorder. Datum of gage is 3,673.5 ft above sea level. Oct. 25, 1984, to Mar. 6, 1986, at site 1 mi upstream at datum 24.1 ft higher. Prior to Oct. 25, 1984, at various sites within 1 mi upstream from present site at different datums. Aug. 23, 1950, to Aug. 1, 1981, and since Mar. 6, 1984, supplementary gages at various sites within 1 mi upstream from present site at different datums. Feb. 7, 1993, to July 2, 1993, on right bank at different datum.

REMARKS--Records good, except estimated daily discharges, which are poor. Diversions above station for irrigation of about 500 acres, mostly above Willow Creek. Water from Black River was pumped into Eagle Creek basin, 52 mi upstream from this station, and water was pumped from wells into Eagle Creek near Double Circle Ranch below Willow Creek. The monthly quantities pumped are shown in the table below. Diversion by pumping for industrial and municipal use in and near Morenci and Clifton are made from Eagle Creek, 3 mi downstream from this station and from San Francisco River near Clifton. Monthly quantities diverted are shown in the table below.

AVERAGE DISCHARGE (unadjusted)--58 years, 67.5 ft³/s, 48,870 acre-ft/yr; median of yearly mean discharges, 38 ft³/s, 27,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 36,800 ft³/s Jan. 18, 1993, on basis of slope-area measurement; minimum, 2.9 ft³/s June 25, 1982.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 800 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 11.....	1530	*978	*4.87

Minimum daily discharge, 15 ft³/s Dec. 19; Dec. 27-29; Aug. 16-17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	18	19	e17	e20	16	20	23	22	20	19	20
2	17	16	19	e18	e19	16	23	24	22	20	56	21
3	19	16	19	e18	e19	16	25	24	22	20	39	22
4	19	16	19	e17	e19	16	25	24	22	21	118	23
5	17	17	19	e17	e18	16	27	24	22	20	67	18
6	17	20	18	e17	e18	17	28	23	23	20	40	16
7	21	20	19	e17	e18	18	29	23	23	20	34	17
8	21	19	18	e17	e18	19	29	e23	23	22	29	21
9	21	18	18	e16	e18	19	23	e24	22	25	23	31
10	20	19	18	e16	e18	19	19	e24	21	24	25	26
11	18	20	18	e17	e17	18	20	e24	22	23	42	260
12	17	20	20	e18	e17	18	24	e25	24	25	38	111
13	16	20	19	e17	e17	18	25	e25	23	25	28	65
14	16	20	17	e17	e17	17	26	e24	20	22	19	45
15	16	20	16	e17	e17	17	26	e23	20	24	16	35
16	16	19	17	18	e17	17	26	e23	19	27	15	26
17	16	19	16	18	e17	18	26	e23	19	35	15	21
18	16	19	16	18	e17	18	26	e23	19	35	16	23
19	16	19	15	18	e17	18	25	e23	20	31	18	17
20	16	19	16	18	e16	18	25	e23	20	31	20	16
21	16	19	e16	18	e16	18	25	e23	20	39	27	20
22	17	20	e16	18	e16	18	25	23	20	e60	23	21
23	18	20	e17	18	e16	18	24	23	20	e45	21	17
24	18	20	e17	19	e16	18	24	24	20	e30	19	16
25	18	20	e17	18	e16	18	24	25	20	e25	18	16
26	18	20	e16	18	e16	18	24	25	21	e17	17	16
27	18	21	e15	18	e16	18	24	25	21	68	17	16
28	18	21	e15	18	16	18	23	24	20	107	17	16
29	18	21	e15	e19	---	18	22	24	21	91	20	16
30	18	19	e16	e20	---	18	22	23	21	40	23	16
31	18	---	e17	e20	---	18	---	23	---	28	22	---
TOTAL	546	575	533	550	482	547	734	734	632	1040	901	1004
MEAN	17.61	19.17	17.19	17.74	17.21	17.65	24.47	23.68	21.07	33.55	29.06	33.47
MAX	21	21	20	20	20	19	29	25	24	107	118	260
MIN	16	16	15	16	16	16	19	23	19	17	15	16
AC-FT	1080	1140	1060	1090	956	1080	1460	1460	1250	2060	1790	1990
CFSM	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.03	0.05	0.05	0.05
IN.	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.06	0.05	0.06
(*)	622	436	237	227	190	273	509	949	1418	997	295	497
(**)	745	737	797	811	701	824	1076	1171	1011	964	732	776
CAL YR 2001	TOTAL 10095	MEAN 27.66	MAX 157	MIN 14	AC-FT 20020	CFSM 0.04	IN. 0.60					
WTR YR 2002	TOTAL 8278	MEAN 22.68	MAX 260	MIN 15	AC-FT 16420	CFSM 0.04	IN. 0.50					

e Estimated

(*) Pumpage, in acre-feet, into Eagle Creek from Eagle Creek wells.

(**) Pumpage, in acre-feet, into Clifton-Morenci, from San Francisco River and Eagle Creek

GILA RIVER BASIN

09447800 BONITA CREEK NEAR MORENCI, AZ

LOCATION.--Lat 32° 57' 20", long 109° 31' 50", in SE1/4NW1/4 sec. 36, T.5 S., R.27 E., Graham County, Hydrologic Unit 15040005, on left bank 2 mi upstream from intake of City of Safford water supply, 6.3 mi upstream from mouth, and 12.8 mi southwest of Morenci.

DRAINAGE AREA.--302 mi².

PERIOD OF RECORD.--Aug. 1981 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,500 ft above sea level, from topographic map. Two crest-stage gages 440 ft upstream on right and left banks.

REMARKS.--No estimated daily discharges. Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,500 ft³/s Jan. 18, 1993, gage height, 16.5 ft, from slope-area measurement of peak flow; minimum daily, 0.66 ft³/s Aug. 31, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 20, 1972, 10,000 ft³/s, from slope-area measurement made by City of Safford at site about 2 mi downstream. Flood of June 27, 1981, 1,340 ft³/s, from slope-area measurement at present site, gage height, 5.6 ft, from floodmark.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 16.....	1315	*6.6	*4.49

Minimum daily discharge, 16 ft³/s, July 7 and 8: July 19 and 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	4.0	5.0	4.8	4.5	3.5	3.8	3.1	2.3	1.7	2.1	2.4
2	3.3	4.0	5.0	4.9	4.4	3.7	3.6	3.0	2.3	1.7	2.2	2.4
3	3.3	4.0	4.8	5.0	4.2	3.8	3.5	3.1	2.3	1.8	2.2	2.4
4	3.4	3.7	4.5	4.8	4.2	3.9	3.5	3.1	2.2	1.8	2.3	2.3
5	3.1	4.0	4.6	4.9	4.1	3.9	3.5	3.1	2.2	1.8	2.3	2.3
6	3.3	4.0	4.6	4.9	4.2	3.7	3.7	3.1	2.1	1.8	2.3	2.3
7	3.4	4.0	4.6	4.9	4.3	3.6	4.0	3.0	2.1	1.8	2.3	2.3
8	3.5	4.0	4.6	4.7	4.2	3.5	3.9	3.1	2.1	1.8	2.3	2.3
9	3.5	3.9	4.6	4.5	4.1	3.4	3.7	3.2	2.1	1.8	2.3	2.3
10	3.4	4.1	4.6	4.2	4.1	3.5	3.6	3.2	2.0	1.8	2.3	2.3
11	3.5	4.0	4.7	4.1	4.2	3.5	3.3	3.2	2.0	1.9	2.3	2.4
12	3.5	4.0	4.9	4.3	4.4	3.5	3.1	3.1	2.0	1.9	2.4	2.4
13	3.7	4.0	5.1	4.4	4.3	3.5	3.1	3.1	2.0	1.9	2.4	2.4
14	3.7	4.2	5.3	4.4	4.0	3.5	3.0	3.3	2.0	1.9	2.4	2.4
15	3.7	3.9	5.3	4.4	4.0	3.8	3.0	3.3	2.0	1.9	2.4	2.4
16	3.6	3.9	5.5	4.2	3.9	3.9	2.8	3.4	2.0	1.9	2.4	2.4
17	3.6	3.9	5.4	3.9	3.8	3.9	2.8	3.4	1.9	1.9	2.4	2.4
18	3.5	3.9	5.5	3.9	3.7	4.0	2.8	3.4	1.9	1.9	2.5	2.4
19	3.6	3.9	5.3	4.1	3.8	3.8	2.8	3.4	1.9	1.9	2.5	2.4
20	3.7	4.0	5.1	4.2	3.7	3.7	2.9	3.3	1.9	2.0	2.5	2.3
21	3.7	4.1	5.0	4.3	3.6	3.7	3.0	3.2	1.9	2.0	2.5	2.3
22	3.7	4.1	4.9	4.4	3.6	3.5	3.0	3.2	1.9	2.1	2.5	2.3
23	3.6	4.1	5.0	4.4	3.8	3.6	2.9	3.2	1.9	2.1	2.5	2.4
24	3.6	4.2	4.8	4.5	3.6	3.8	2.8	3.1	1.8	2.1	2.5	2.4
25	3.6	4.4	4.9	4.5	3.7	3.9	2.9	3.2	1.8	2.1	2.5	2.4
26	3.7	4.5	5.0	4.6	3.6	3.9	3.1	3.1	1.8	2.1	2.5	2.4
27	3.8	4.8	5.2	4.4	3.6	3.9	3.1	2.9	1.8	2.1	2.5	2.4
28	3.7	4.9	5.1	4.1	3.6	3.8	2.9	2.7	1.7	2.1	2.5	2.5
29	3.8	5.1	4.8	4.1	---	3.8	2.9	2.7	1.8	2.1	2.5	2.5
30	3.9	5.0	4.5	4.2	---	3.9	2.9	2.6	1.7	2.1	2.4	2.5
31	3.9	---	4.5	4.3	---	3.7	---	2.4	---	2.1	2.5	---
TOTAL	110.5	124.6	152.7	137.3	111.2	115.1	95.9	96.2	59.4	59.9	74.2	71.3
MEAN	3.565	4.153	4.926	4.429	3.971	3.713	3.197	3.103	1.980	1.932	2.394	2.377
MAX	3.9	5.1	5.5	5.0	4.5	4.0	4.0	3.4	2.3	2.1	2.5	2.5
MIN	3.1	3.7	4.5	3.9	3.6	3.4	2.8	2.4	1.7	1.7	2.1	2.3
AC-FT	219	247	303	272	221	228	190	191	118	119	147	141
CFSM	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
IN.	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2002, BY WATER YEAR (WY)

	14.50	6.776	9.784	52.31	26.97	13.73	5.077	3.933	3.201	7.083	7.909	7.803
MEAN	14.50	6.776	9.784	52.31	26.97	13.73	5.077	3.933	3.201	7.083	7.909	7.803
MAX	176	21.7	29.6	769	165	53.6	10.7	6.33	5.86	44.5	14.6	28.6
(WY)	1984	1995	1983	1993	1993	1995	1998	1993	1995	1999	2000	1996
MIN	1.52	1.86	4.93	4.43	3.83	2.74	2.00	2.10	1.32	1.93	2.39	2.38
(WY)	1992	1992	2002	2002	2001	2001	1991	1991	1982	2002	2002	2002

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1982 - 2002

ANNUAL TOTAL	1274.3	1208.3	
ANNUAL MEAN	3.491	3.310	13.24
HIGHEST ANNUAL MEAN			83.7
LOWEST ANNUAL MEAN			3.31
HIGHEST DAILY MEAN	8.5	Aug 29	10200
LOWEST DAILY MEAN	2.3	Jun 25	0.66
ANNUAL SEVEN-DAY MINIMUM	2.3	Jun 25	0.76
ANNUAL RUNOFF (AC-FT)	2530	2400	9590
ANNUAL RUNOFF (CFSM)	0.012	0.011	0.044
ANNUAL RUNOFF (INCHES)	0.16	0.15	0.60
10 PERCENT EXCEEDS	5.2	4.6	9.2
50 PERCENT EXCEEDS	3.1	3.5	4.6
90 PERCENT EXCEEDS	2.4	2.0	2.5

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, AZ

LOCATION.--Lat 32° 52' 06", long 109° 30' 38", in SE1/4NE1/4 sec. 31, T.6 S., R.28 E., Graham County, Hydrologic Unit 15040005, on left bank 0.6 mi downstream from intake of Brown Canal, 8 mi northeast of Solomon, and 17 mi downstream from San Francisco River. Records include flow of Brown Canal, which is measured 2,000 ft downstream from intake.

DRAINAGE AREA.--7,896 mi².

PERIOD OF RECORD.--Apr. 1914 to current year. Monthly discharge only for some periods, published in WSP 1313. Prior to Oct. 1932 and Oct. 1940 to Sept. 1949 published as "near Solomonsville" and Oct. 1932 to Oct. 1933 and May 1935 to Sept. 1940 as "below Bonita Creek near Solomonsville."

REVISED RECORDS.--WSP 1059: 1914, 1916--17, 1923(M), 1924--25, 1927, 1929--31(M). WSP 1179: 1915, 1918--19(M). WSP 1313: 1934. WSP 1733: 1923.

GAGE.--Water-stage recorder. Datum of gage is 3,059.92 ft above sea level. Prior to July 8, 1980, at datum 4.96 ft higher. See WSP 1733 for history of changes prior to Jan. 1, 1941. Supplementary water-stage recorder and Parshall flume on Brown Canal.

REMARKS.-- Records good, except estimated daily discharges, which are poor. Records show water reaching head of Safford Valley and include water diverted to Brown Canal. Diversions above station for mining, municipal use, and for irrigation of about 17,500 acres, much of it by pumping from ground water.

COOPERATION.--Record for Brown Canal furnished by Gila Water Commissioner.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 132,000 ft³/s Oct. 2, 1983, gage height, 20.8 ft, from rating curve extended above 52,000 ft³/s on basis of slope-area measurements at 14.40 ft and 20.8 ft; minimum, 11 ft³/s June 25, 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 12.....	1500	*4,740	*10.76

Minimum daily discharge, 30 ft³/s June 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	99	139	167	168	141	113	77	49	31	143	78
2	84	99	139	167	168	138	112	75	48	31	122	83
3	83	101	139	167	170	138	111	75	47	32	127	92
4	84	102	139	168	172	138	107	74	46	32	471	91
5	86	102	140	170	175	136	106	71	45	33	325	85
6	90	106	139	171	177	135	107	70	45	34	259	82
7	92	107	138	171	178	135	108	69	49	31	589	78
8	89	108	140	172	177	135	106	68	47	31	291	77
9	90	107	139	171	177	133	105	67	46	32	216	84
10	90	111	140	171	175	131	102	66	43	34	208	84
11	87	114	143	171	176	128	99	64	42	36	223	982
12	85	116	148	170	177	124	95	64	41	e39	228	4040
13	86	117	152	171	175	125	91	63	40	e39	165	2710
14	89	120	154	170	171	123	91	62	40	e40	136	1160
15	89	120	156	170	169	123	89	62	37	e41	122	628
16	90	122	158	168	169	124	87	61	37	e46	114	426
17	91	123	159	165	167	123	88	61	36	60	120	334
18	92	124	161	162	163	124	87	63	36	67	102	277
19	89	124	162	161	160	125	86	61	35	64	94	238
20	90	125	161	161	162	125	84	61	36	73	125	205
21	90	127	162	161	161	124	84	60	36	61	130	180
22	92	129	164	162	159	125	81	58	35	86	119	157
23	92	128	165	165	158	123	82	58	34	120	97	142
24	92	130	167	167	153	122	81	57	33	101	87	129
25	90	134	167	165	150	121	82	58	32	112	85	119
26	93	136	167	166	148	120	79	55	30	85	76	110
27	94	136	168	167	145	118	77	55	31	77	72	102
28	96	137	169	166	144	117	79	54	32	232	70	98
29	96	137	169	167	---	117	78	53	32	191	72	98
30	98	138	168	168	---	116	78	54	32	219	78	96
31	99	---	167	169	---	115	---	51	---	181	76	---
TOTAL	2796	3579	4779	5187	4644	3922	2775	1947	1172	2291	5142	13065
MEAN	90.19	119.3	154.2	167.3	165.9	126.5	92.50	62.81	39.07	73.90	165.9	435.5
MAX	99	138	169	172	178	141	113	77	49	232	589	4040
MIN	83	99	138	161	144	115	77	51	30	31	70	77
MED	90	121	158	167	168	124	88	62	37	46	122	114
AC-FT	5550	7100	9480	10290	9210	7780	5500	3860	2320	4540	10200	25910
CFSM	0.01	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.01	0.02	0.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2002, BY WATER YEAR (WY)

MEAN	387.3	279.5	518.7	703.0	747.4	856.2	578.9	302.4	108.0	205.3	501.0	392.6
MAX	7447	2230	5798	13990	5509	3629	2775	2038	716	736	2499	2081
(WY)	1984	1979	1979	1993	1993	1991	1973	1973	1992	1921	1923	1975
MIN	39.9	48.6	60.1	92.8	102	82.3	63.8	37.8	19.7	44.4	66.0	35.9
(WY)	1957	1957	1957	1954	1954	1971	1971	1956	1956	1947	1960	1956

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1921 - 2002
ANNUAL TOTAL	94073	51299	
ANNUAL MEAN	257.7	140.5	464.7
HIGHEST ANNUAL MEAN			2229
LOWEST ANNUAL MEAN			101
HIGHEST DAILY MEAN	1180	4040	90000
LOWEST DAILY MEAN	74	30	13
ANNUAL SEVEN-DAY MINIMUM	75	31	15
ANNUAL RUNOFF (AC-FT)	186600	101800	336600
ANNUAL RUNOFF (CFSM)	0.033	0.018	0.059
10 PERCENT EXCEEDS	586	171	979
50 PERCENT EXCEEDS	168	112	177
90 PERCENT EXCEEDS	89	44	64

e Estimated

GILA RIVER BASIN

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, AZ—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD--Jan. 1976 to Oct. 1981, Oct. 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TUR-BID-ITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS DISSOLV FLD. AS CAC03 (MG/L) (00904)	HARD-NESS TOTAL AS CAC03 (MG/L) (00900)	CALCIUM DIS-SOLVED AS CA (MG/L) (00915)
DEC 06...	1205	139	20	686	11.3	110	8.5	1010	15.0	9.5	36	210	60.0
MAR 20...	1225	121	9.2	685	10.6	117	8.7	1040	23.0	14.9	46	200	57.0
MAY 22...	1150	56	3.0	679	9.1	117	8.4	1350	28.5	21.7	110	240	68.0
AUG 22...	1205	103	790	685	6.9	96	8.3	1060	33.0	26.8	42	190	57.0

Date	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA) (00916)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	BICAR-BONATE WATER FIELD (MG/L AS HCO3) (00453)	CAR-BONATE WATER FIELD (MG/L AS CO3) (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)
DEC 06...	63.0	14.0	15.0	6.90	4	120	171	197	6	170	1.3	76.0	37
MAR 20...	58.0	13.0	15.0	6.70	4	120	150	166	8	190	1.2	76.0	16
MAY 22...	68.0	16.0	16.0	9.20	5	180	128	147	5	280	1.4	110	14
AUG 22...	67.0	11.0	17.0	7.40	3	100	146	161	8	170	1.0	57.0	528

Date	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, AM-MONIA + ORGANIC (MG/L AS N) (00625)	NITRO-GEN, AMMONIA (MG/L AS N) (00610)	NITRO-GEN, AMMONIA (MG/L AS NH4) (71845)	NITRO-GEN, NO2+NO3 (MG/L AS N) (00630)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	E COLI, MTEC MF (COL/100 ML) (31633)	COLI-FORM, FECAL, UM-MF (COLS./100 ML) (31625)
DEC 06...	.84	616	551	E.20c1	.02	.03	.300	--	--	E.06c1	<5	E10k	E5k
MAR 20...	.84	616	554	<.20	.03	.04	<.020	--	--	<.02	<5	E1k	<1k
MAY 22...	1.07	788	742	<.20	.04	.05	<.020	--	--	<.02	6	E3k	E4k
AUG 22...	.77	564	528	.90	<.01	--	.410	1.3	5.8	.60	9	E200k	--

Date	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNPLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)
DEC 06...	<1	<1	3	4	43.0	53.0	<1	<1	108	110	<.5	<.5	<1
MAR 20...	<1	<1	4	4	41.0	47.0	<1	<1	115	117	<.5	<.5	<1
MAY 22...	<1	<1	3	3	53.0	57.0	<1	<1	142	148	<.5	<.5	<1
AUG 22...	<1	<1	4	6	56.0	160	<1	1	93	101	<.5	<.5	<1

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)
DEC 06...	1	<2	4	<2	910	<2	<2	3	36	<.10	<.1	<1	2
MAR 20...	<1	<2	3	<2	499	<2	<2	5	20	<.10	<.1	<1	<1
MAY 22...	<1	<2	<2	<2	203	<2	<2	11	20	<.10	<.1	<1	<1
AUG 22...	8	4	54	2	8420	<2	12	2	457	<.10	<.1	2	16

Date	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL SOLVED (UG/L AS SE) (01147)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	STRON- TIUM, TOTAL RECOV- ERABLE (UG/L AS SR) (01082)	THAL- LIUM, DIS- SOLVED (UG/L AS TL) (01057)	THAL- LIUM, TOTAL SOLVED (UG/L AS TL) (01059)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	SEDI- MENT, DIS- SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- SUS- PENDED (T/DAY) (80155)
DEC 06...	<1	<1	<1	<1	690	<2	<2	4	4	33	12.4
MAR 20...	<1	<1	<1	<1	710	<2	<2	7	3	19	6.2
MAY 22...	<1	<1	<1	<1	880	<2	<2	19	<2	10	1.5
AUG 22...	<1	<1	<1	<1	740	<2	<2	21	51	579	161

Remark codes used in this report:

- < -- Less than
- E -- Estimated value

Value qualifier codes used in this report:

- c -- See laboratory comment
- k -- Counts outside acceptable range
- l -- Sample lab preparation problem

GILA RIVER BASIN

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Water-quality measurements in the following table were made as part of the ADEQ Fixed-Station Network Program. The following analyses are quality-assurance samples processed during the 2002 sampling period and are defined in the introductory text section titled "Water-Quality Control Data".

Date	Time	Sample type	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPE-CIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ALUMINUM, DIS-SOLVED (UG/L AS AL) (01106)
MAY 22...	1155	2	5.7	1	20.5	.03	<.03	<.1	<.20	<.01	<.020	<.02	<3
Date		BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYLLIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM, DIS-SOLVED (UG/L AS CD) (01025)	CHROMIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)		
MAY 22...	<.5	<1	<.5	<1	<2	<2	<2	<1	<1	3			
Remark codes used in this report:													
< -- Less than													

09460150 FRYE CREEK NEAR THATCHER, AZ

LOCATION--Lat 32° 44' 38", long 109° 50' 15", in NE1/4 sec. 13, T.8 S., R.24 E. (unsurveyed), Graham County, Hydrologic Unit 15040005, in Coronado National Forest, on left bank 8.5 mi southwest of Thatcher.

DRAINAGE AREA--4.02 mi². (Area at site used 1966--76, 3.91 mi².)

PERIOD OF RECORD--Dec. 1966 to Sept. 1976, Dec. 1988 to current year.

REVISED RECORDS--WRD AZ 1968: Drainage area.

GAGE--Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 5,580 ft above sea level, from topographic map. Prior to Dec. 1988, at site 0.25 mi upstream at different datum.

REMARKS--Records fair, except estimated daily discharges, which are poor. No regulation or diversion above station. City of Safford diverts water from Frye Mesa Reservoir 1 mi downstream for municipal supply.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 577 ft³/s, Jan. 5, 1995, gage height, 2.90 ft, from floodmark and from rating curve extended above 45 ft³/s no flow at times in most years.

EXTREMES FOR CURRENT YEAR--Peak discharge greater than base discharge of 8.0 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 6.....	2245	*1.3	*0.66

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.15	0.46	e0.55	e0.40	e0.24	0.06	0.08	0.02	0.00	0.00	0.00	0.00
2	0.14	0.47	e0.55	e0.39	e0.24	0.07	0.07	0.02	0.00	0.00	0.00	0.00
3	0.14	0.47	e0.54	e0.39	e0.23	0.09	0.06	0.02	0.00	0.00	0.00	0.00
4	0.14	0.50	e0.54	e0.38	e0.23	0.08	0.06	0.02	0.00	0.00	0.00	0.00
5	0.13	0.59	e0.53	e0.38	e0.22	0.07	0.08	0.02	0.00	0.00	0.00	0.00
6	0.10	0.60	e0.53	e0.37	e0.22	0.08	0.09	0.02	0.00	0.00	0.11	0.00
7	0.16	0.61	e0.52	e0.37	e0.21	0.10	0.12	0.02	0.00	0.00	0.73	0.00
8	0.17	0.61	e0.52	e0.36	e0.21	0.11	0.12	0.02	0.00	0.00	0.31	0.00
9	0.16	0.62	e0.51	e0.36	e0.20	0.11	0.15	0.01	0.00	0.00	0.17	0.00
10	0.16	0.62	e0.51	e0.35	e0.20	0.14	0.14	0.00	0.00	0.00	0.09	0.00
11	0.15	0.63	e0.50	e0.35	e0.19	0.16	0.10	0.02	0.00	0.00	0.05	0.00
12	0.20	0.64	e0.50	e0.34	e0.19	0.18	0.07	0.02	0.00	0.00	0.03	0.00
13	0.18	e0.64	e0.49	e0.34	e0.18	0.10	0.02	0.02	0.00	0.00	0.02	0.00
14	0.18	e0.63	e0.49	e0.33	e0.18	0.04	0.01	0.01	0.00	0.00	0.01	0.00
15	0.26	e0.63	e0.48	e0.33	e0.17	0.14	0.03	0.01	0.00	0.00	0.00	0.00
16	0.37	e0.62	e0.48	e0.32	e0.17	0.18	0.04	0.00	0.00	0.00	0.00	0.00
17	0.43	e0.62	e0.47	e0.32	e0.16	0.07	0.01	0.00	0.00	0.00	0.00	0.00
18	0.48	e0.61	e0.47	e0.31	e0.16	0.25	0.00	0.00	0.00	0.00	0.00	0.00
19	0.47	e0.61	e0.46	e0.31	e0.15	0.18	0.00	0.00	0.00	0.00	0.00	0.00
20	0.44	e0.61	e0.46	e0.30	e0.15	0.14	0.01	0.00	0.00	0.00	0.00	0.00
21	0.44	e0.60	e0.45	e0.30	e0.14	0.10	0.00	0.00	0.00	0.00	0.00	0.00
22	0.44	e0.60	e0.45	e0.29	e0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.00
23	0.41	e0.59	e0.44	e0.29	e0.13	0.10	0.00	0.00	0.00	0.00	0.00	0.00
24	0.40	e0.59	e0.44	e0.28	e0.13	0.10	0.00	0.00	0.00	0.00	0.00	0.00
25	0.38	e0.58	e0.43	e0.28	e0.12	0.26	0.00	0.00	0.00	0.00	0.00	0.00
26	0.37	e0.58	e0.43	e0.27	0.10	0.21	0.00	0.00	0.00	0.00	0.00	0.00
27	0.36	e0.57	e0.42	e0.27	0.09	0.26	0.00	0.00	0.00	0.00	0.00	0.00
28	0.35	e0.57	e0.42	e0.26	0.05	0.20	0.00	0.00	0.00	0.00	0.00	0.00
29	0.35	e0.56	e0.41	e0.26	---	0.27	0.00	0.00	0.00	0.00	0.00	0.00
30	0.41	e0.56	e0.41	e0.25	---	0.16	0.01	0.00	0.00	0.00	0.00	0.00
31	0.43	---	e0.40	e0.25	---	0.06	---	0.00	---	0.00	0.00	---
TOTAL	8.95	17.59	14.80	10.00	4.80	4.18	1.27	0.25	0.00	0.00	1.52	0.00
MEAN	0.289	0.586	0.477	0.323	0.171	0.135	0.042	0.008	0.000	0.000	0.049	0.000
MAX	0.48	0.64	0.55	0.40	0.24	0.27	0.15	0.02	0.00	0.00	0.73	0.00
MIN	0.10	0.46	0.40	0.25	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	18	35	29	20	9.5	8.3	2.5	0.5	0.00	0.00	3.0	0.00
CFSM	0.07	0.15	0.12	0.08	0.04	0.03	0.01	0.00	0.00	0.00	0.01	0.00
IN.	0.08	0.16	0.14	0.09	0.04	0.04	0.01	0.00	0.00	0.00	0.01	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2002, BY WATER YEAR (WY)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
MEAN	1.235	1.471	0.971	1.866	1.761	2.231	2.790	4.747	2.090	1.310	0.764	1.136	
MAX	9.74	9.26	4.43	13.7	11.3	10.9	9.37	17.0	7.37	6.81	1.91	6.85	
(WY)	2001	1995	1995	1995	1995	1995	1992	1992	1991	1999	1999	1990	
MIN	0.13	0.11	0.17	0.13	0.17	0.13	0.042	0.008	0.000	0.000	0.021	0.000	
(WY)	1992	1990	1996	1996	2000	1999	2002	2002	2002	1996	2000	2002	

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1990 - 2002
ANNUAL TOTAL	686.86	63.36	
ANNUAL MEAN	1.882	0.174	1.865
HIGHEST ANNUAL MEAN			5.02
LOWEST ANNUAL MEAN			0.17
HIGHEST DAILY MEAN	17	0.73	150
LOWEST DAILY MEAN	0.10	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.13	0.00	0.00
ANNUAL RUNOFF (AC-FT)	1360	126	1350
ANNUAL RUNOFF (CFSM)	0.47	0.043	0.46
ANNUAL RUNOFF (INCHES)	6.36	0.59	6.30
10 PERCENT EXCEEDS	6.3	0.51	4.2
50 PERCENT EXCEEDS	0.61	0.09	0.47
90 PERCENT EXCEEDS	0.25	0.00	0.04

e Estimated

GILA RIVER BASIN

09466500 GILA RIVER AT CALVA, AZ

LOCATION--Lat 33° 11'08", long 110° 13'10", in SW_{1/4} sec. 8, T.3 S., R.21 E. (unsurveyed), Graham County, Hydrologic Unit 15040005, in San Carlos Indian Reservation, on Southern Pacific Railroad bridge at head of San Carlos Reservoir, 2 mi west of Calva.

DRAINAGE AREA--11,470 mi².

PERIOD OF RECORD--Oct. 1929 to current year.

GAGE--Water-stage recorder. Datum of gage is 2,517.29 ft above sea level. Prior to Oct. 1, 1954, and Aug. 25, 1958, to Dec. 31, 1962, at datum 2.52 ft lower. Oct. 1, 1954, to Aug. 24, 1958, at datum 5.52 ft lower. Dec. 31, 1962, to Oct. 20, 1972, at site 530 ft downstream at datum 3.65 ft lower. Oct. 20, 1972, to Sept. 30, 1974, supplementary gage at bridge on U.S. Highway 70, 6.2 mi upstream at datum 2,560.19 ft, NGVD.

REMARKS--Records poor. Diversion above station for irrigation of about 69,000 acres, metallurgical treatment of ores, and municipal uses.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 150,000 ft³/s Oct. 3, 1983, gage height, 23.1 ft, from rating curve extended above 87,000 ft³/s on basis of area-velocity and flow-over-road computations of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD--Maximum discharge since at least 1914, probably in excess of 100,000 ft³/s Jan. 20, 1916, determined on basis of peak discharge at stations near Solomon and at Kelvin.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 3,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 14	0745	*2,740	*7.18

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e3.5	15	57	112	144	e58	40	21	2.9	0.00	46	12
2	e4.0	16	59	120	143	e59	38	21	1.8	0.00	32	6.3
3	e4.4	15	59	119	141	e59	37	19	1.3	0.00	17	8.3
4	e4.9	12	62	121	137	e59	36	19	1.1	0.00	8.8	10
5	5.3	12	65	129	130	e59	36	19	1.1	0.00	18	6.0
6	5.3	16	62	135	124	59	37	20	0.68	0.00	379	5.5
7	7.0	17	62	140	116	61	39	19	0.31	0.00	188	4.2
8	18	16	64	146	108	67	41	18	0.27	0.00	201	5.8
9	15	16	63	149	105	63	37	16	0.21	0.00	176	8.5
10	14	16	66	151	100	61	37	18	0.20	0.00	51	18
11	12	18	70	153	100	59	40	17	0.17	0.00	30	58
12	11	19	75	156	94	58	38	16	0.16	0.00	30	222
13	11	22	77	156	77	56	37	16	0.11	0.00	20	1290
14	13	22	79	157	61	54	36	14	0.09	0.00	33	e1970
15	12	23	81	158	58	54	36	14	0.09	0.00	19	e771
16	11	26	81	161	57	53	33	13	0.07	0.00	14	e396
17	9.7	28	84	163	55	53	34	11	0.06	0.01	63	e261
18	11	29	92	164	56	53	34	12	0.03	0.01	22	e188
19	7.6	33	93	162	56	52	32	11	0.03	0.73	15	e139
20	7.3	37	95	163	55	51	32	10	0.03	0.22	12	e92
21	7.5	39	97	162	54	49	30	7.9	0.02	0.00	13	e76
22	9.1	39	100	161	55	47	29	8.5	0.01	0.00	61	e64
23	11	41	102	162	55	47	30	8.8	0.00	0.00	42	e55
24	13	41	104	161	55	46	28	9.9	0.00	0.00	27	e45
25	12	41	103	156	e54	44	28	9.2	0.00	0.00	16	e33
26	12	45	105	156	e55	41	27	9.6	0.00	0.00	9.1	e26
27	12	48	104	159	e56	39	27	8.4	0.00	73	6.8	e25
28	12	51	99	159	e57	39	26	7.7	0.00	3.3	5.9	e24
29	11	51	99	161	---	41	25	6.1	0.00	0.14	8.5	e22
30	12	55	100	159	---	41	22	4.8	0.00	29	32	e21
31	12	---	106	150	---	42	---	3.9	---	38	24	---
TOTAL	310.6	859	2565	4661	2358	1624	1002	408.8	10.74	144.39	1620.1	5862.6
MEAN	10.02	28.63	82.74	150.4	84.21	52.39	33.40	13.19	0.358	4.658	52.26	195.4
MAX	18	55	106	164	144	67	41	21	2.9	73	379	1970
MIN	3.5	12	57	112	54	39	22	3.9	0.00	0.00	5.9	4.2
AC-FT	616	1700	5090	9250	4680	3220	1990	811	21	286	3210	11630
CFSM	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02
IN.	0.00	0.00	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2002, BY WATER YEAR (WY)

MEAN	348.5	232.1	449.5	751.3	720.0	723.5	405.2	221.6	52.37	78.99	299.5	242.8
MAX	8486	2468	5652	16310	6225	3757	2623	3079	1272	838	1661	1681
(WY)	1984	2001	1979	1993	1993	1991	1992	1992	1992	1955	1967	1975
MIN	0.000	0.000	0.000	21.6	28.5	10.3	1.35	1.25	0.000	0.000	0.000	0.000
(WY)	1954	1954	1954	1956	1957	1957	1957	1956	1946	1989	1989	1956

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1930 - 2002

ANNUAL TOTAL	50985.4	21426.23	
ANNUAL MEAN	139.7	58.70	376.1
HIGHEST ANNUAL MEAN			2451
LOWEST ANNUAL MEAN			28.7
HIGHEST DAILY MEAN	874	Apr 10	1970
LOWEST DAILY MEAN	2.7	Sep 29	0.00
ANNUAL SEVEN-DAY MINIMUM	3.6	Sep 27	0.00
ANNUAL RUNOFF (AC-FT)	101100	42500	272500
ANNUAL RUNOFF (CFSM)	0.012	0.005	0.033
ANNUAL RUNOFF (INCHES)	0.17	0.07	0.45
10 PERCENT EXCEEDS	322	143	786
50 PERCENT EXCEEDS	64	30	70
90 PERCENT EXCEEDS	8.1	0.03	2.6

e Estimated

09466500 GILA RIVER AT CALVA, AZ—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD --Oct. 1974 to Sept. 1994 and Aug. 1999 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TUR-BIDITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	HARD-NESS TOTAL (MG/L) AS CACO3 (00900)	CALCIUM DIS-SOLVED (MG/L) AS CA (00915)
DEC 07...	1140	62	23	698	11.6	104	8.4	2660	11.0	6.5	45	330	88.0
MAR 21...	1230	50	14	698	12.0	132	8.4	4310	27.5	15.1	84	400	100
MAY 23...	1200	9.4	20	690	8.5	109	8.2	4910	28.0	21.5	170	440	108
AUG 23...	1105	46	330	698	8.9	121	8.5	3240	32.0	25.4	0	270	70.0

Date	CALCIUM TOTAL RECOVERABLE (MG/L AS CA) (00916)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, TOTAL RECOVERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT TOT IT FIELD AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD AS CO3 (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE SOLVED (MG/L AS SO4) (00945)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)
DEC 07...	92.0	27.0	28.0	8.10	10	430	286	339	5	540	1.8	250	29
MAR 21...	106	37.0	39.0	8.80	16	720	319	374	7	930	2.0	440	24
MAY 23...	110	41.0	43.0	11.0	18	870	267	315	6	1210	2.1	450	28
AUG 23...	82.0	23.0	29.0	9.20	14	540	270	306	11	640	1.7	350	272

Date	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	E COLI, MTEC MF (COL/100 ML) (31633)
DEC 07...	2.16	1590	1520	E.50c1	.03	.04	1.50	--	--	--	E.04c1	<5	<1k
MAR 21...	3.54	2600	2430	.60	.02	.03	1.30	.58	1.9	8.4	.03	18	<1k
MAY 23...	3.97	2920	2850	.40	.02	.03	<.020	.38	--	--	.03	17	<1k
AUG 23...	2.62	1930	1800	1.8	.02	.03	2.20	1.8	4.0	17.7	.38	17	E450k

Date	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOVER-ABLE (UG/L AS BA) (01007)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOVER-ABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	BORON, TOTAL RECOVER-ABLE (UG/L AS B) (01022)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)
DEC 07...	E5k	<1	<1	7	8	65.0	72.0	<1	<1	449	451	<.5	<.5
MAR 21...	E3k	<1	<1	8	8	77.0	87.0	<1	<1	816	878	<.5	<.5
MAY 23...	E24k	<1	<1	5	6	100	110	<1	<1	887	900	<.5	<.5
AUG 23...	--	<1	<1	10	13	140	200	<1	<1	720	758	<.5	<.5

GILA RIVER BASIN

09466500 GILA RIVER AT CALVA, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)
DEC 07...	<1	<1	<2	<2	<2	728	<2	<2	27	71	<.10	<.1	1
MAR 21...	<1	<1	<2	2	<2	436	<2	<2	90	137	<.10	<.1	1
MAY 23...	<1	<1	<2	3	5	807	<2	<2	70	147	<.10	<.1	1
AUG 23...	<1	5	2	14	3	5620	<2	5	9	197	<.10	<.1	2

Date	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL SOLVED (UG/L AS SE) (01147)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	STRON- TIUM, TOTAL RECOV- ERABLE (UG/L AS SR) (01082)	THAL- LIUM, DIS- SOLVED (UG/L AS TL) (01057)	THAL- LIUM, TOTAL SOLVED (UG/L AS TL) (01059)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT, SUS- PENDED (T/DAY) (80155)
DEC 07...	2	<1	<1	<1	<1	1070	<2	<2	6	3	30	5.0
MAR 21...	2	4	4	<1	<1	1350	<2	<2	10	<4	37	5.0
MAY 23...	2	<1	<1	<1	<1	1490	<2	<2	7	3	45	1.1
AUG 23...	9	4	4	<1	<1	1060	<2	<2	20	24	568	70.5

Remark codes used in this report:

< -- Less than

E -- Estimated value

Value qualifier codes used in this report:

c -- See laboratory comment

k -- Counts outside acceptable range

l -- Sample lab preparation problem

09468500 SAN CARLOS RIVER NEAR PERIDOT, AZ

LOCATION--Lat 33° 17' 47", long 110° 27' 03", in SE1/4 sec. 36, T.1 S., R.18 E. (unsurveyed), Gila County, Hydrologic Unit 15040007, in San Carlos Indian Reservation, on U.S. Highway 70 bridge, 0.9 mi south of Peridot.

DRAINAGE AREA--1,026 mi².

PERIOD OF RECORD--Aug. 1910 to Jan. 1911 (gage heights only), Apr. 1914 to July 1915, Aug. to Sept. 1915 (monthly discharge only), Oct. 1929 to current year. Prior to Oct. 1929 published as "at San Carlos."

REVISED RECORDS--WSP 1283: Drainage area.

GAGE--Water-stage recorder. Datum of gage is 2,542.29 ft above sea level (AZ Highway Department benchmark). See WSP 1713 or 1733 for history of changes prior to Feb. 1, 1942. Feb. 1, 1942, to Aug. 13, 1970, at sites 1.9 mi upstream at different datums. Aug 14, 1970, to Sept. 30, 1980, at site 1.8 mi upstream at datum 2,578.90 ft, above sea level. Supplementary water-stage recorder Dec. 21, 1967, to July 2, 1968, at site 2.2 mi downstream at datum in use prior to Feb. 1, 1942; Jan. 31, 1979, to Sept. 30, 1980, at present site and datum.

REMARKS--Records fair except for estimated daily discharges, which are poor. Diversions above station for irrigation of about 600 acres. Small inflow from sewage treatment system about 3.6 mi upstream. Flow regulated to some extent since June 15, 1979, by Talkalai Reservoir; capacity, about 6,000 acre-ft.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 54,800 ft³/s Jan. 8, 1993, gage height, 12.12 ft, from rating curve extended above 23,000 ft³/s on basis of rate of change in storage in San Carlos Reservoir; maximum gage height 14.8 ft, Dec. 22, 1965, site and datum then in use; no flow at times in most years.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 2,200 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 7	0100	*200	5.97

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	4.4	8.5	15	13	15	14	4.6	0.00	0.00	3.1	0.00
2	0.00	6.1	8.7	14	13	14	13	4.3	0.00	0.00	2.1	0.00
3	0.00	6.6	9.0	12	13	14	13	4.0	0.00	0.00	0.80	0.00
4	0.00	6.8	8.7	12	13	13	12	3.7	0.00	0.00	0.00	0.00
5	0.00	8.1	9.6	14	13	12	12	3.6	0.00	0.00	0.00	0.00
6	0.00	8.5	10	12	12	12	13	3.4	0.00	0.00	15	0.00
7	0.00	8.0	11	12	12	12	14	3.0	0.00	0.00	137	0.00
8	0.00	7.9	10	12	13	13	15	2.5	0.00	0.00	40	0.00
9	1.6	8.2	10	12	13	15	14	2.0	0.00	0.00	14	0.00
10	4.7	7.9	11	12	13	16	13	1.6	0.00	0.00	7.3	0.00
11	4.1	5.9	11	12	13	16	13	1.1	0.00	0.00	4.2	0.00
12	3.2	5.5	11	12	13	15	12	0.74	0.00	0.00	2.7	0.00
13	1.8	6.4	13	12	14	15	13	0.28	0.00	0.00	1.4	0.00
14	0.13	6.7	15	12	15	14	12	0.00	0.00	0.00	0.69	0.00
15	0.00	6.3	15	12	14	14	11	0.53	0.00	0.00	0.08	0.00
16	0.00	6.5	16	13	15	13	11	0.16	0.00	0.00	0.00	0.00
17	0.00	6.8	16	13	16	13	9.4	0.00	0.00	0.00	0.00	0.00
18	0.00	7.1	15	13	15	13	8.9	0.00	0.00	0.00	0.00	0.00
19	0.00	7.0	13	13	16	13	8.3	0.00	0.00	25	0.00	0.00
20	0.00	7.0	12	13	16	13	7.9	0.00	0.00	0.03	0.00	0.00
21	0.00	7.3	e12	12	16	13	7.7	0.00	0.00	0.00	0.00	0.00
22	0.00	7.2	e12	12	15	14	7.8	0.00	0.00	0.00	0.00	0.00
23	0.00	6.8	e12	12	15	13	7.5	0.00	0.00	0.00	0.00	0.00
24	0.00	6.1	e13	12	15	12	7.5	0.00	0.00	0.00	0.00	0.00
25	0.00	6.2	e13	11	15	13	6.9	0.00	0.00	0.00	0.00	0.00
26	0.00	7.2	e13	12	15	12	6.2	0.00	0.00	0.00	0.00	0.00
27	0.07	7.7	e14	12	15	13	6.4	0.00	0.00	0.00	0.00	0.00
28	0.95	7.7	e14	13	15	13	6.0	0.00	0.00	0.00	0.00	0.00
29	2.1	8.1	13	13	---	15	5.6	0.00	0.00	0.00	0.00	0.00
30	1.3	8.4	14	13	---	13	5.3	0.00	0.00	0.23	0.00	0.00
31	2.5	---	15	14	---	14	---	0.00	---	2.6	0.00	---
TOTAL	22.45	210.4	378.5	388	396	420	306.4	35.51	0.00	27.86	228.37	0.00
MEAN	0.724	7.013	12.21	12.52	14.14	13.55	10.21	1.145	0.000	0.899	7.367	0.000
MAX	4.7	8.5	16	15	16	16	15	4.6	0.00	25	137	0.00
MIN	0.00	4.4	8.5	11	12	12	5.3	0.00	0.00	0.00	0.00	0.00
AC-FT	45	417	751	770	785	833	608	70	0.00	55	453	0.00
CFSM	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.00
IN.	0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2002, BY WATER YEAR (WY)

	MEAN	28.70	20.06	103.1	140.2	162.9	141.3	23.94	7.739	3.600	18.18	51.63	23.26
MAX	519	178	1581	3208	1500	1262	170	41.8	19.8	84.6	320	166	
(WY)	1973	1979	1966	1993	1980	1941	1941	1980	1993	1930	1990	1983	
MIN	0.20	2.68	5.07	5.80	7.03	4.83	2.17	0.029	0.000	0.000	1.61	0.000	
(WY)	1957	1957	1951	1958	1953	1959	1959	1959	1948	1947	1962	1956	

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1930 - 2002
ANNUAL TOTAL	3695.96	2413.49	
ANNUAL MEAN	10.13	6.612	60.08
HIGHEST ANNUAL MEAN			426
LOWEST ANNUAL MEAN			6.61
HIGHEST DAILY MEAN	167	137	20000
LOWEST DAILY MEAN	0.00	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	0.00	0.00
ANNUAL RUNOFF (AC-FT)	7330	4790	43520
ANNUAL RUNOFF (CFSM)	0.010	0.006	0.059
ANNUAL RUNOFF (INCHES)	0.13	0.09	0.80
10 PERCENT EXCEEDS	24	14	65
50 PERCENT EXCEEDS	4.4	5.9	9.8
90 PERCENT EXCEEDS	0.00	0.00	1.0

e Estimated

09469000 SAN CARLOS RESERVOIR AT COOLIDGE DAM, AZ

LOCATION.--Lat 33° 10'32", long 110° 31'38", in NW_{1/4} sec. 17, T.3 S., R.18 E. (unsurveyed), Gila County, Hydrologic Unit 15040005, in San Carlos Indian Reservation, at right intake tower of Coolidge Dam on Gila River.

DRAINAGE AREA.--12,886 mi².

REVISED RECORDS.--WSP 1049: 1929, 1934, 1937--38. WSP 1283: Drainage area.

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

GAGE.--Water-stage recorder. Datum of gage is 2,539.54 ft above sea level. Prior to Jan. 15, 1937, series of stakes with tops at known elevations for reference points on right bank about 1,000 ft upstream from dam. Jan. 15, 1937, to Dec. 31, 1947, water-stage recorder at present site at datum 0.72 ft lower.

REMARKS.--Records good. Reservoir is formed by concrete multiple-dome dam. Dam completed Oct. 25, 1928; storage began Nov. 15, 1928. Usable capacity (from capacity table computed by San Carlos Irrigation District, based on an estimate of sediment deposited since 1966; used since Jan. 1, 1991) 866,600 acre-ft between elevations 2,382.63 ft, sill of lowest outlet gate, and 2,510.4 ft (revised), crest of spillway. No dead storage. Figures given herein represent usable contents. Reservoir is used to store water for irrigation of San Carlos project and for power development, dependent on irrigation demands. In 1997 laws were passed that prohibited water users from using storage below 29,559 acre-ft. Spill over Coolidge Dam because of capacity storage has occurred Apr. 22 to May 5, 1979, Feb. 24 to Mar. 13, 1980, Oct. 4--23, 28--31, Dec. 3--13, 1983, Jan. 2 to June 5, 1985, Jan. 11 to Mar. 18, 1993.

COOPERATION.--Wire-weight gage readings furnished by Bureau of Indian Affairs.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,090,000 acre-ft Feb. 26 to Mar. 6, 1980; maximum elevation observed, 2,521.36 ft Jan. 20, 1993; no usable contents at times.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 93,715 acre-ft Oct. 1, elevation, 2,433.77 ft; minimum, 44,569 acre-ft Sept. 6, elevation, 2,420.70 ft.

RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92930	79560	78780	67120	70180	67640	57180	56510	53410	51020	49080	45070
2	92330	79560	78270	67090	70330	67240	57140	56470	53410	50950	49110	44980
3	91880	79560	77770	67050	70490	66830	57180	56510	53270	50880	48980	44980
4	91200	79560	77170	66980	70640	66610	57220	56550	53200	50750	48920	44920
5	90530	79400	76790	66940	70760	66210	57220	56510	53200	50680	48890	44860
6	89860	79440	76250	66940	70840	65810	57180	56470	53200	50650	48980	44690
7	89330	79400	75790	66900	70910	65270	57220	56400	53100	50550	48730	44690
8	88710	79440	75080	66870	71030	64880	57260	56400	53000	50450	48280	44810
9	88050	79280	74590	66870	70990	64420	57330	56400	52860	50420	48030	44810
10	87400	79280	74020	66870	71070	63880	57300	56220	52680	50350	47720	44890
11	86880	79280	73700	66870	71150	63400	57330	56180	52720	50220	47470	44920
12	86280	79280	73290	66980	71150	62870	57330	56180	52650	50160	47120	44890
13	85730	79210	72970	67050	71220	62530	57370	56140	52550	50160	46790	44780
14	85230	79160	72770	67160	71220	61680	57300	56030	52550	50220	46510	46970
15	84950	79090	72650	67270	71220	61170	57140	56070	52370	49890	46180	49020
16	84180	79130	72290	67420	71190	60700	57180	56000	52300	49920	45870	49730
17	83680	79130	71980	67570	71110	60330	57030	56000	52240	50020	45820	49960
18	83180	79130	71620	67680	71030	60000	56990	55920	52170	49830	45760	49960
19	82730	79160	71270	67940	70890	59600	56850	55630	52030	49800	45670	49960
20	82240	79130	70990	68170	70880	59180	56810	55270	52000	49830	45640	49890
21	81800	79130	70720	e68370	70760	58850	56880	54980	51830	49700	45580	49920
22	81270	79280	70600	e68570	70490	58400	56810	54690	51790	49700	45540	49960
23	80830	79090	70290	e68770	70100	58010	56730	54510	51690	49660	45490	49920
24	80310	79090	69750	e68970	69560	57740	56810	54260	51590	49600	45460	49890
25	79840	79050	69180	e69170	69180	57780	56850	54050	51620	49600	45400	49760
26	79680	79050	68620	69370	68730	57670	56510	53910	51460	49540	45310	49540
27	79680	79010	68050	69520	68390	57560	56660	53840	51420	49500	45280	49370
28	79640	79050	67490	69680	68020	57600	56660	53800	51280	49470	45160	49110
29	79640	79050	67270	69830	---	57220	56730	53770	51250	49440	45220	48790
30	79640	79130	67240	69990	---	57180	56660	53690	51150	49270	45130	48500
31	79600	---	67090	70030	---	57180	---	53660	---	49240	45220	---
MAX	92930	79560	78780	70030	71220	67640	57370	56550	53410	51020	49110	49960
MIN	79600	79010	67090	66870	68020	57180	56510	53660	51150	49240	45130	44690
(*)	2430.47	2430.35	2427.31	2428.09	2427.56	2424.50	2424.36	2423.53	2422.80	2422.22	2420.92	2421.99
(**)	-14190	-470	-12040	+2940	-2010	-10840	-520	-3000	-2510	-1910	-4020	+3280
CAL YR 2001	MAX 269100	MIN 67090	(**)	-172210								
WTR YR 2002	MAX 92930	MIN 44690	(**)	-44430								

e Estimated

(*) Elevation, at end of month, in feet.

(**) Change in contents, in acre-feet.

09469500 GILA RIVER BELOW COOLIDGE DAM, AZ

LOCATION--Lat 33° 10' 10", long 110° 31' 50", in SW_{1/4} sec. 17, T.3 S., R.18 E. (unsurveyed), Pinal County, Hydrologic Unit 15050100, on left bank 2,200 ft downstream from Coolidge Dam.

DRAINAGE AREA--12,886 mi².

PERIOD OF RECORD--July to Oct. 1899, Apr. 1900 to Mar. 1902, July to Sept. 1902, Dec. 1902 to Dec. 1904, Jan. to May 1905 (gage heights only), June to Nov. 1905; Aug. 1910 to Feb. 1911 (gage heights only); Apr. 1914 to current year. Published as "at San Carlos" 1899-1911, as "near San Carlos" 1914-26, and as "at Coolidge Dam" 1927-38.

REVISED RECORDS--WSP 629: 1915-16. WSP 1049: 1899-1904. WSP 1149: 19M), 1921, 1922(M), 1923, 1924(M). WSP 1283: Drainage area.

GAGE--Water-stage recorder and Parshall flume. Datum of gage is 2,309.33 ft above sea level. Prior to Feb. 5, 1911, nonrecording gage at various sites and datums upstream from mouth of San Carlos River. Apr. 29, 1914, to Mar. 8, 1937, water-stage recorder at various sites within 1 mi upstream from present site at different datums. Mar. 27, 1979 to Oct. 10, 1980, and since Oct. 4, 1983, supplementary water-stage recorder at site on left bank 1,000 ft upstream at datum 2,309.5 ft above sea level, used above discharges at approximately 2,000 ft³/s, maximum capacity of parshall flume.

REMARKS--Records good except for estimated daily discharges and those below 20 ft³/s, which are fair. Flow regulated by San Carlos Reservoir since Nov. 15, 1928. (See sta 09469000.) Record includes flow of Warm Springs, which enters between the dam and gage. Large diversions above San Carlos Reservoir for irrigation, metallurgical treatment of ore, and municipal supply; about 69,000 acres of land was irrigated, a considerable portion by pumping from ground water.

AVERAGE DISCHARGE (adjusted for storage in San Carlos Reservoir)--90 years (water years 1901, 1904, 1915-2002) 401 ft³/s, 290,500 acre-ft/yr; median of yearly mean discharges, 250 ft³/s, 181,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD--1914-28: Maximum discharge, 130,000 ft³/s Jan. 20, 1916, estimated on basis of peak discharge near Solomon and at Kelvin; no flow at times.

1928-2000: Maximum discharge, 32,800 ft³/s Jan. 20, 21, 1993 from calculated discharge over Coolidge Dam; no flow at times prior to 1938; minimum daily since 1938, 0.18 ft³/s Oct. 5-9 and 19-21, 2000.

EXTREMES FOR CURRENT YEAR--Maximum daily discharge, 389 ft³/s Dec. 27; minimum daily discharge, 0.40 ft³/s Apr. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	249	0.81	206	118	85	234	e40	0.81	1.2	0.89	1.8	1.7
2	248	0.81	306	120	85	234	40	0.89	1.3	1.1	1.8	1.7
3	275	0.81	306	131	85	234	38	1.1	1.2	1.1	1.8	1.7
4	293	0.81	306	138	85	234	e38	1.1	1.1	1.1	1.8	1.7
5	293	0.81	304	141	89	258	e38	0.90	1.1	1.1	1.8	1.7
6	293	0.81	303	142	95	280	e34	0.81	1.1	1.1	1.8	1.8
7	293	0.81	303	142	101	301	e30	0.93	1.4	1.0	138	2.0
8	290	0.81	303	157	104	333	e30	0.48	1.5	1.1	233	2.0
9	290	0.81	302	166	104	332	29	1.1	1.5	1.1	214	2.0
10	290	0.81	300	137	105	332	27	0.42	1.7	1.1	175	2.0
11	252	0.81	299	106	106	333	26	0.42	1.6	1.1	175	2.0
12	228	0.81	240	99	106	332	30	0.58	e1.3	1.1	159	49
13	227	0.81	185	99	106	330	31	0.78	e1.1	1.1	157	115
14	228	0.81	166	99	106	336	31	0.76	1.1	1.1	138	117
15	229	0.81	166	99	104	341	31	0.74	1.1	1.1	139	176
16	229	0.81	214	100	101	296	30	0.75	1.1	1.1	140	175
17	229	0.81	239	70	114	262	30	0.81	1.1	1.1	53	120
18	229	0.81	238	53	124	258	30	0.81	1.1	1.1	2.2	113
19	229	0.81	238	53	124	259	29	64	1.1	1.1	2.4	117
20	229	0.81	238	53	124	260	29	94	0.81	1.1	2.4	88
21	229	0.81	185	53	124	260	29	93	0.81	1.1	2.0	27
22	229	0.81	148	53	207	262	11	92	0.81	1.2	2.0	1.7
23	226	0.81	246	54	275	174	0.40	92	0.81	1.5	2.0	25
24	219	0.81	341	54	275	116	0.42	93	0.81	1.9	2.0	52
25	218	0.81	361	54	275	114	0.59	94	0.81	2.2	1.9	49
26	e78	0.81	362	74	275	109	0.59	34	0.81	2.0	1.7	53
27	e1.1	0.81	389	85	265	107	0.69	1.1	0.81	2.1	1.6	86
28	e1.1	0.81	376	85	248	108	0.76	1.1	0.81	1.9	1.3	118
29	e0.99	0.81	205	85	---	e108	0.84	1.1	0.81	1.7	1.6	118
30	e1.1	0.81	117	85	---	e108	0.81	1.1	0.81	1.7	1.6	122
31	0.96	---	117	85	---	e68	---	1.1	---	1.8	1.5	---
TOTAL	6327.25	24.30	8009	2990	3997	7313	686.10	675.69	32.61	40.79	1758.0	1742.0
MEAN	204.1	0.810	258.4	96.45	142.8	235.9	22.87	21.80	1.087	1.316	56.71	58.07
MAX	293	0.81	389	166	275	341	40	94	1.7	2.2	233	176
MIN	0.96	0.81	117	53	85	68	0.40	0.42	0.81	0.89	1.3	1.7
AC-FT	12550	48	15890	5930	7930	14510	1360	1340	65	81	3490	3460
CAL YR 2001	TOTAL	125435.14	MEAN	343.7	MAX	803	MIN	0.81	AC-FT	248800		
WTR YR 2002	TOTAL	33595.74	MEAN	92.04	MAX	389	MIN	0.40	AC-FT	66640		

e Estimated

GILA RIVER BASIN

09470500 SAN PEDRO RIVER AT PALOMINAS, AZ

LOCATION.--Lat 31° 22'48", long 110° 06'38", in SW1/4, SE1/4, sec. 33, T.23 S., R.22 E., Cochise County, Hydrologic Unit 15050202, near left bank on downstream side of pier of bridge on State Highway 92, 0.7 mi east of Palominas, 2.5 mi upstream from Green Brush Draw, 4.5 mi downstream from international boundary, and 12 mi southwest of Bisbee.

DRAINAGE AREA.--737 mi², of which 649 mi² is in Mexico.

PERIOD OF RECORD.--May 1930 to Oct. 1933, May 1935 to July 1941, July 1950 to Sept. 30, 1981 (discontinued as a continuous-record station; converted to a crest-stage partial-record station). Oct. 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,187.62 ft above sea level (State Highway Department benchmark). See WSP 1733 for history of changes prior to Nov. 24, 1955.

REMARKS.--Records good except for estimated daily discharges, which are fair. Small diversions for irrigation of a few hundred acres above station, mostly in Mexico. Records show approximate flow of river at international boundary.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft³/s Aug. 14, 1940, gage height, 16.16 ft, present datum, from rating curve extended above 5,600 ft³/s on basis of slope-area measurement of peak flow; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Greatest flood since at least 1906 occurred Sept. 28, 1926, gage height, about 23.9 ft, present datum, from floodmarks; discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and (or) peak discharges above base of 2,400 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 29	0030	*3,910	*9.87
Aug. 6	0115	3,080	8.87

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.57	0.26	1.5	3.8	4.4	4.2	2.2	0.17	0.11	0.03	2.4	0.00
2	0.67	0.30	1.6	3.7	4.4	4.1	2.0	0.17	0.10	0.02	290	0.00
3	0.67	0.38	1.7	3.8	5.2	4.0	1.9	0.17	0.11	0.02	45	0.00
4	0.75	0.34	1.8	3.8	5.6	4.1	1.8	0.17	0.14	0.02	119	0.00
5	0.63	0.29	2.0	3.8	5.2	4.1	1.7	0.17	0.16	0.01	114	0.00
6	0.55	0.41	2.1	3.7	4.7	4.0	1.7	0.20	0.18	0.01	612	0.00
7	0.58	0.48	2.1	3.7	4.4	3.9	1.7	0.20	0.11	0.01	3.2	0.01
8	0.54	0.48	2.2	3.8	4.5	3.8	1.6	0.20	0.11	0.01	2.0	0.01
9	0.53	0.46	2.2	3.8	4.4	3.7	1.5	0.20	0.10	0.03	141	0.01
10	0.51	0.50	2.4	4.0	4.3	3.8	1.3	0.22	0.14	0.03	131	10
11	0.48	0.53	2.5	4.1	4.3	3.7	1.2	0.20	0.15	0.05	177	1.7
12	0.41	0.54	2.8	3.9	4.3	3.7	1.1	0.19	0.12	0.03	7.1	0.00
13	0.39	0.55	2.9	4.0	4.4	3.7	0.99	0.19	0.10	0.04	0.09	0.00
14	0.39	0.57	3.0	4.0	4.3	3.5	0.95	0.17	0.11	0.09	0.22	0.00
15	0.36	0.66	3.1	4.1	4.1	3.4	0.87	0.17	0.10	0.10	2.2	0.00
16	0.31	0.70	3.1	4.3	4.1	3.3	0.85	0.17	0.10	0.13	0.11	0.00
17	0.27	0.71	3.3	4.3	4.1	3.4	0.80	0.17	0.09	0.15	0.08	0.00
18	0.26	0.72	3.2	4.3	4.0	3.4	0.73	0.14	0.08	0.14	0.03	0.00
19	0.26	0.78	3.3	4.2	4.0	3.5	0.61	0.14	0.06	0.23	34	0.00
20	0.28	0.78	3.4	4.2	4.0	3.4	0.57	0.13	0.06	0.20	4.1	0.00
21	0.26	0.83	3.4	4.2	4.1	3.2	0.51	0.13	0.07	27	0.48	0.00
22	0.26	0.88	3.5	4.3	4.2	3.1	0.52	0.13	0.06	5.8	0.15	0.00
23	0.26	0.97	3.4	4.3	4.2	3.0	0.47	0.12	0.05	5.7	0.06	0.00
24	0.24	1.0	3.7	4.4	4.2	3.0	0.40	0.12	0.05	5.2	0.00	0.00
25	0.28	1.1	3.7	4.3	4.1	3.1	0.31	0.11	0.06	194	0.00	0.00
26	0.29	1.2	3.8	4.3	4.1	3.1	0.27	0.11	0.05	68	0.00	0.00
27	0.26	1.3	3.9	4.4	4.2	3.0	0.22	0.12	0.05	316	0.00	0.00
28	0.22	1.4	3.7	4.5	4.2	2.9	0.21	0.12	0.03	239	0.00	0.00
29	0.23	1.4	3.7	4.9	---	2.6	0.20	0.13	0.02	592	0.00	0.00
30	0.26	1.4	3.8	4.6	---	2.5	0.18	0.14	0.03	10	0.00	0.00
31	0.26	---	3.8	4.4	---	2.3	---	0.13	---	9.1	0.00	---
TOTAL	12.23	21.92	90.6	127.9	122.0	106.5	29.36	4.90	2.70	1473.14	1685.22	11.70
MEAN	0.395	0.731	2.923	4.126	4.357	3.435	0.979	0.158	0.090	47.52	54.36	0.390
MAX	0.75	1.4	3.9	4.9	5.6	4.2	2.2	0.22	0.18	592	612	10
MIN	0.22	0.26	1.5	3.7	4.0	2.3	0.18	0.11	0.02	0.01	0.00	0.00
AC-FT	24	43	180	254	242	211	58	9.7	5.4	2920	3340	23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2002, BY WATER YEAR (WY)

MEAN	40.70	6.586	20.48	19.89	8.769	7.343	1.968	0.645	3.959	86.64	130.6	24.35
MAX	770	133	414	452	73.5	75.8	14.6	4.63	55.3	280	591	275
(WY)	1978	2001	1979	1979	1979	1978	1979	1979	2000	1959	1954	1958
MIN	0.000	0.000	0.097	0.035	0.071	0.22	0.000	0.000	0.000	0.26	2.68	0.027
(WY)	1966	1966	1954	1954	1954	1972	1969	1965	1962	1997	1962	2000

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1950 - 2002

ANNUAL TOTAL	8647.58	3688.17	
ANNUAL MEAN	23.69	10.10	30.33
HIGHEST ANNUAL MEAN			93.3
LOWEST ANNUAL MEAN			4.16
HIGHEST DAILY MEAN	2210	612	10300
LOWEST DAILY MEAN	0.13	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.14	0.00	0.00
ANNUAL RUNOFF (AC-FT)	17150	7320	21970
10 PERCENT EXCEEDS	19	4.4	29
50 PERCENT EXCEEDS	3.5	0.70	1.2
90 PERCENT EXCEEDS	0.26	0.00	0.00

09470520 GREENBUSH DRAW NEAR PALOMINAS, AZ

LOCATION--Lat 31° 22' 49", long 110° 04' 18", in NW1/4NE1/4NE1/4, sec. 2, T.24 S., R.22 E., Cochise County, Hydrologic Unit 15050202, on left bank on downstream side of State Highway 92 bridge, approximately 2.7 mi east of Palominas, and approximately 3.4 mi upstream from the confluence of the San Pedro River.

DRAINAGE AREA--Undetermined.

PERIOD OF RECORD--June to Sept. 2000.

GAGE--Water-stage recorder. Elevation of gage is 4,280 ft above sea level, from topographic map.

REMARKS--Records good.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 516 ft³/s, Oct. 23, 2000, gage height, 6.82 ft.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 218 ft³/s Aug. 4 at 2015, gage height, 6.03 ft. Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.2	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.6	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.8	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.20	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.2	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	75.26	0.51
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.062	2.428	0.017
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.2	43	0.28
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MED	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.8	149	1.0

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

	2000	2001	2002	2000	2001	2002	2000	2001	2002	2000	2001	2002	
MEAN	7.865	1.047	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.622	0.021	3.797	0.000
MAX	15.7	2.09	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.87	0.062	7.59	0.000
(WY)	2001	2001	2001	2001	2001	2001	2001	2001	2001	2000	2002	2000	2000
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	2002	2002	2001	2001	2001	2001	2001	2001	2001	2001	2000	2001	2000

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
ANNUAL TOTAL	0.00		77.69			
ANNUAL MEAN	0.000		0.213		1.508	
HIGHEST ANNUAL MEAN					1.51 2001	
LOWEST ANNUAL MEAN					1.51 2001	
HIGHEST DAILY MEAN	0.00	Jan 1	43	Aug 4	253	Oct 23 2000
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Jun 1 2000
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Jun 1 2000
ANNUAL RUNOFF (AC-FT)	0.00		154		1090	
10 PERCENT EXCEEDS	0.00		0.00		0.00	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

GILA RIVER BASIN

09470700 BANNING CREEK NEAR BISBEE, AZ

LOCATION.--Lat 31° 30'12.5", long 110° 00'19", Cochise County, Hydrologic Unit 15050202, 6 mi (approx.) northeast of Bisbee, AZ. Gage is on the right bank, 8 mi (approx.) above the confluence with the San Pedro River.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--Feb. 8, 2001, to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,767.81 ft above sea level.

REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,288 ft³/s Aug. 4 at 1130, gage height, 5.04 ft. Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19	0.39
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78	0.33
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26	0.30
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12	0.29
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.2	0.28
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.9	0.28
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.3	0.27
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.6	0.26
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.9	0.23
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.2	0.20
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.18
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.16
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.15
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.13
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.12
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.12
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.8	0.10
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.9	0.08
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.4	0.07
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.06
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.06
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.05
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.05
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.05
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.05
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.05
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.89	0.05
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.67	0.04
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.61	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	174.76	5.51
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.637	0.184
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78	0.59
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
MED	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.14
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	347	11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2002, BY WATER YEAR (WY)

MEAN	0.000	0.000	---	0.000	0.000	0.042	0.070	0.027	0.000	2.295	6.593	0.084
MAX	0.000	0.000	---	0.000	0.000	0.085	0.14	0.054	0.000	2.29	6.59	0.084
(WY)	2002	2002	---	2002	2002	2001	2001	2001	2001	2001	2001	2001
MIN	0.000	0.000	---	0.000	0.000	0.000	0.000	0.000	0.000	2.29	6.59	0.084
(WY)	2002	2002	---	2002	2002	2002	2002	2002	2001	2001	2001	2001

SUMMARY STATISTICS

FOR 2002 WATER YEAR

WATER YEARS 2001 - 2002

ANNUAL TOTAL	180.27		
ANNUAL MEAN	0.494		
HIGHEST DAILY MEAN	78	Aug 4	49 Aug 1 2001
LOWEST DAILY MEAN	0.00	Oct 1	0.00 May 13 2001
ANNUAL SEVEN-DAY MINIMUM	0.00	Oct 1	0.00 May 13 2001
ANNUAL RUNOFF (AC-FT)	358		
10 PERCENT EXCEEDS	0.26		
50 PERCENT EXCEEDS	0.00		
90 PERCENT EXCEEDS	0.00		

GILA RIVER BASIN

09470750 RAMSEY CANYON NEAR SIERRA VISTA, AZ

LOCATION--Lat 31° 26' 48", long 110° 18' 21", in NW1/4SW1/4NW1/4 sec. 10, T.23 S., R.20 E., Cochise County, Hydrologic Unit 15050202, on left bank 3.4 mi northwest of Nicksville, in the Coronado National Forest, and approximately 8.7 mi upstream from the confluence of the San Pedro River.

DRAINAGE AREA--Undetermined.

PERIOD OF RECORD--May 2000 to current year.

GAGE--Water-stage recorder. Elevation of gage is 5,525 ft above sea level from topographic map.

REMARKS--Records good.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 117 ft³/s Oct. 22, 2000, gage height 3.44 ft; no flow at times.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 0.51 ft³/s Dec. 11 at 1145, gage height 1.51 ft. Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.24	0.12	0.14	0.12	0.12	0.12	0.08	0.03	0.00	0.00	0.00	0.10
2	0.20	0.12	0.13	0.13	0.13	0.13	0.06	0.03	0.00	0.00	0.00	0.11
3	0.20	0.12	0.12	0.13	0.28	0.13	0.06	0.03	0.00	0.00	0.01	0.11
4	0.25	0.11	0.15	0.13	0.41	0.13	0.06	0.03	0.00	0.00	0.03	0.11
5	0.21	0.12	0.13	0.13	0.33	0.13	0.06	0.03	0.00	0.00	0.02	0.10
6	0.20	0.12	0.13	0.13	0.25	0.13	0.07	0.03	0.00	0.00	0.01	0.10
7	0.19	0.12	0.13	0.13	0.22	0.13	0.07	0.03	0.00	0.00	0.00	0.11
8	0.16	0.11	0.13	0.13	0.19	0.16	0.06	0.03	0.00	0.00	0.00	0.13
9	0.15	0.12	0.13	0.12	0.17	0.17	0.06	0.03	0.00	0.00	0.00	0.15
10	0.13	0.12	0.19	0.13	0.16	0.16	0.06	0.02	0.00	0.00	0.00	0.17
11	0.12	0.11	0.33	0.13	0.14	0.16	0.06	0.02	0.00	0.00	0.02	0.16
12	0.11	0.10	0.19	0.13	0.14	0.15	0.06	0.01	0.00	0.00	0.02	0.12
13	0.10	0.10	0.13	0.13	0.13	0.15	0.06	0.00	0.00	0.00	0.02	0.10
14	0.08	0.11	0.13	0.13	0.13	0.16	0.06	0.00	0.00	0.00	0.02	0.08
15	0.07	0.11	0.14	0.13	0.13	0.17	0.05	0.01	0.00	0.00	0.02	0.07
16	0.07	0.11	0.13	0.13	0.13	0.17	0.05	0.03	0.00	0.00	0.01	0.07
17	0.07	0.11	0.13	0.14	0.13	0.18	0.05	0.03	0.00	0.00	0.01	0.06
18	0.06	0.10	0.12	0.10	0.13	0.21	0.04	0.03	0.00	0.00	0.01	0.06
19	0.05	0.10	0.12	0.10	0.13	0.22	0.04	0.03	0.00	0.00	0.03	0.06
20	0.05	0.11	0.12	0.10	0.13	0.22	0.04	0.03	0.00	0.00	0.03	0.06
21	0.05	0.11	0.11	0.10	0.13	0.19	0.04	0.03	0.00	0.00	0.02	0.05
22	0.05	0.10	0.11	0.10	0.13	0.14	0.04	0.03	0.00	0.00	0.03	0.05
23	0.06	0.12	0.12	0.10	0.13	0.13	0.04	0.03	0.00	0.00	0.03	0.04
24	0.06	0.12	0.12	0.11	0.13	0.14	0.03	0.02	0.00	0.00	0.03	0.04
25	0.06	0.12	0.12	0.11	0.13	0.13	0.03	0.00	0.00	0.00	0.03	0.04
26	0.05	0.12	0.12	0.11	0.13	0.13	0.03	0.00	0.00	0.00	0.03	0.04
27	0.06	0.13	0.12	0.10	0.13	0.12	0.03	0.00	0.00	0.00	0.03	0.04
28	0.07	0.13	0.11	0.14	0.13	0.09	0.03	0.00	0.00	0.00	0.04	0.04
29	0.07	0.13	0.11	0.14	---	0.09	0.03	0.00	0.00	0.00	0.06	0.04
30	0.08	0.13	0.11	0.13	---	0.08	0.03	0.00	0.00	0.00	0.08	0.06
31	0.10	---	0.12	0.13	---	0.08	---	0.00	---	0.00	0.09	---
TOTAL	3.42	3.45	4.19	3.77	4.62	4.50	1.48	0.59	0.00	0.00	0.72	2.47
MEAN	0.110	0.115	0.135	0.122	0.165	0.145	0.049	0.019	0.000	0.000	0.023	0.082
MAX	0.25	0.13	0.33	0.14	0.41	0.22	0.08	0.03	0.00	0.00	0.09	0.17
MIN	0.05	0.10	0.11	0.10	0.12	0.08	0.03	0.00	0.00	0.00	0.00	0.04
MED	0.08	0.12	0.13	0.13	0.13	0.14	0.05	0.03	0.00	0.00	0.02	0.07
AC-FT	6.8	6.8	8.3	7.5	9.2	8.9	2.9	1.2	0.00	0.00	1.4	4.9

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

	2000	2001	2002	2000	2001	2002	2000	2001	2002	2000	2001	2002
MEAN	4.674	3.043	0.840	0.374	0.313	0.386	0.595	0.186	0.077	0.098	0.615	0.296
MAX	9.24	5.97	1.54	0.63	0.46	0.63	1.14	0.53	0.17	0.20	1.41	0.62
(WY)	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001
MIN	0.11	0.11	0.14	0.12	0.16	0.15	0.049	0.013	0.000	0.000	0.023	0.082
(WY)	2002	2002	2002	2002	2002	2002	2002	2000	2002	2002	2002	2002

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 2000 - 2002
ANNUAL TOTAL	187.02	29.21	
ANNUAL MEAN	0.512	0.080	0.984
HIGHEST ANNUAL MEAN			1.89
LOWEST ANNUAL MEAN			0.080
HIGHEST DAILY MEAN	2.4	0.41	48
LOWEST DAILY MEAN	0.05	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.05	0.00	0.00
ANNUAL RUNOFF (AC-FT)	371	58	713
10 PERCENT EXCEEDS	1.1	0.15	1.7
50 PERCENT EXCEEDS	0.47	0.08	0.14
90 PERCENT EXCEEDS	0.10	0.00	0.00

GILA RIVER BASIN

09470800 GARDEN CANYON NEAR FORT HUACHUCA, AZ

LOCATION--Lat 31° 28'22", long 110° 20'50", in NW_{1/4}SE_{1/4} sec. 31, T.22 S., R.20 E. (unsurveyed), on right bank in Fort Huachuca (U.S. Army) Military Reservation, 2.4 mi southeast of Huachuca Peak, 5.5 mi south of Fort Huachuca, and 6.4 mi northwest of Miller Peak.

DRAINAGE AREA--8.38 mi².

PERIOD OF RECORD--Oct. 1959 to June 1965, Dec. 1993 to current year.

GAGE--Water-stage recorder and concrete control with 90° V-notch weir. Elevation of gage is 5,400 ft above sea level from topographic map.

REMARKS--Records good except for estimated daily discharges, which are fair.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 382 ft³/s Oct. 23, 2000, gage height 3.69 ft; no flow at times.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 20 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 19	2330	*5.8	2.40

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.79	0.47	0.48	0.45	0.41	0.30	0.11	0.04	0.00	0.00	0.00	0.49
2	0.73	0.50	0.51	0.47	0.41	0.30	0.10	0.04	0.00	0.00	0.00	0.43
3	0.74	0.47	0.49	0.49	0.55	0.31	0.10	0.04	0.00	0.00	0.00	0.40
4	0.77	0.43	0.53	0.47	0.57	0.30	0.10	0.04	0.00	0.00	0.85	0.35
5	0.73	0.44	0.55	0.48	0.55	0.28	0.10	0.04	0.00	0.00	0.87	0.31
6	0.72	0.47	0.55	0.47	0.55	0.26	0.10	0.04	0.00	0.00	0.93	0.29
7	0.72	0.45	0.55	0.45	0.55	0.24	0.10	0.03	0.00	0.00	0.73	0.28
8	0.70	0.45	0.54	0.44	0.54	0.23	0.09	0.03	0.00	0.00	0.96	0.31
9	0.69	0.44	0.54	0.42	0.54	0.22	0.09	0.03	0.00	0.00	2.1	0.33
10	0.69	0.43	e0.55	0.41	0.53	0.22	0.08	0.02	0.00	0.00	1.7	0.31
11	0.67	0.43	e0.55	0.41	0.53	0.21	0.08	0.02	0.00	0.00	1.3	0.26
12	0.65	0.42	0.55	0.42	0.51	0.20	0.08	0.02	0.00	0.00	1.1	0.22
13	0.64	0.40	0.55	0.41	0.47	0.19	0.08	0.02	0.00	0.00	0.85	0.20
14	0.63	0.45	0.55	0.40	0.46	0.18	0.07	0.01	0.00	0.00	0.73	0.17
15	0.62	0.47	0.58	0.40	0.44	0.19	0.06	0.00	0.00	0.00	0.63	0.14
16	0.61	0.45	0.58	0.38	0.41	0.19	0.06	0.00	0.00	0.00	0.70	0.13
17	0.60	0.44	0.55	0.38	0.40	0.19	0.06	0.00	0.00	0.00	0.62	0.11
18	0.59	0.43	0.53	0.37	0.40	0.19	0.06	0.00	0.00	0.00	0.58	0.11
19	0.59	0.41	0.52	0.38	0.41	0.19	0.06	0.00	0.00	0.00	9.4	0.10
20	0.58	0.43	0.51	0.37	0.40	0.19	0.06	0.00	0.00	0.00	4.2	0.09
21	0.57	0.45	0.49	0.37	0.38	0.17	0.05	0.00	0.00	0.00	2.6	0.08
22	0.56	0.42	0.49	0.34	0.37	0.16	0.05	0.00	0.00	0.00	1.8	0.07
23	0.56	0.41	0.51	0.36	0.35	0.15	0.04	0.00	0.00	0.00	1.5	0.06
24	0.56	0.43	0.48	0.39	0.32	0.14	0.04	0.00	0.00	0.00	1.2	0.05
25	0.56	0.43	0.49	0.39	0.33	0.15	0.06	0.00	0.00	0.00	1.1	0.04
26	0.55	0.42	0.50	0.38	0.32	0.15	0.05	0.00	0.00	0.00	0.90	0.04
27	0.53	0.46	0.47	0.35	0.31	0.13	0.06	0.00	0.00	0.00	0.79	0.03
28	0.50	0.48	0.46	0.39	0.31	0.12	0.05	0.00	0.00	0.00	0.69	0.03
29	0.51	0.50	0.43	0.39	---	0.12	0.05	0.00	0.00	0.00	0.72	0.03
30	0.50	0.47	0.42	0.43	---	0.12	0.04	0.00	0.00	0.00	0.62	0.03
31	0.46	---	0.43	0.42	---	0.12	---	0.00	---	0.00	0.53	---
TOTAL	19.32	13.35	15.93	12.68	12.32	6.11	2.13	0.42	0.00	0.00	40.70	5.49
MEAN	0.623	0.445	0.514	0.409	0.440	0.197	0.071	0.014	0.000	0.000	1.313	0.183
MAX	0.79	0.50	0.58	0.49	0.57	0.31	0.11	0.04	0.00	0.00	9.4	0.49
MIN	0.46	0.40	0.42	0.34	0.31	0.12	0.04	0.00	0.00	0.00	0.00	0.03
AC-FT	38	26	32	25	24	12	4.2	0.8	0.00	0.00	81	11
CFSM	0.07	0.05	0.06	0.05	0.05	0.02	0.01	0.00	0.00	0.00	0.16	0.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)

MEAN	2.516	1.450	1.226	2.036	1.981	1.542	1.107	0.470	0.184	0.581	2.618	2.126
MAX	28.1	11.9	7.03	11.5	12.1	6.15	5.18	1.94	0.74	2.23	11.4	14.5
(WY)	2001	2001	1995	1960	1995	1998	1998	1998	1995	1998	1963	1963
MIN	0.000	0.000	0.10	0.091	0.021	0.039	0.001	0.000	0.000	0.000	0.001	0.038
(WY)	1998	1998	1997	2000	2000	2000	2000	2000	1961	1994	1997	1997

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1960 - 2002

ANNUAL TOTAL	566.47	128.45	
ANNUAL MEAN	1.552	0.352	1.566
HIGHEST ANNUAL MEAN			5.06
LOWEST ANNUAL MEAN			0.099
HIGHEST DAILY MEAN	24	Aug 14	9.4
LOWEST DAILY MEAN	0.24	Jun 18	0.00
ANNUAL SEVEN-DAY MINIMUM	0.26	Jun 14	0.00
ANNUAL RUNOFF (AC-FT)	1120		255
ANNUAL RUNOFF (CFSM)	0.19		0.042
10 PERCENT EXCEEDS	2.4		0.63
50 PERCENT EXCEEDS	1.1		0.31
90 PERCENT EXCEEDS	0.41		0.00

e Estimated

09471000 SAN PEDRO RIVER AT CHARLESTON, AZ

LOCATION.--Lat 31° 37' 33", long 110° 10' 26", in NE1/4NE1/4 sec. 11, T.21 S., R.21 E., Cochise County, Hydrologic Unit 15050202, in Spanish land grant of San Juan de las Boquillas y Nogales, at downstream side of pier near center of highway bridge, 0.3 mi south of Charleston, 1.5 mi upstream from Charleston damsite, and 9 mi upstream from Babocomari River.

DRAINAGE AREA.--1,234 mi², of which 696 mi² is in Mexico.

PERIOD OF RECORD.--Jan. and Feb. 1904 (gage heights only); Mar. 1904 to Aug. 1906; Nov. 1910 to Dec. 1911 (gage heights only); Sept. 1912 to current year. Monthly discharge only Oct. 1926 to May 1928 and Dec. 1933 to Apr. 1935, published in WSP 1313. Published as "near Lewis Springs" 1910-11, and as "near Fairbank" 1911-26.

REVISED RECORDS.--WSP 1119: 1939(M). WSP 1213: 1914, 1916(M), 1918(M), 1919, 1920(M), 1922-23(M), WDR AZ-90-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,954.01 ft above sea level. Prior to Dec. 1, 1942, nonrecording gage or water-stage recorder at various sites within 6.5 mi downstream at different datums.

REMARKS.--Records fair, except for high-flow records and estimated daily discharges, which are poor. Diversions above station, mostly by pumping from ground water, for irrigation of 3,200 acres in 1978, excluding an unknown amount in Mexico. Record shows flow available at Charleston damsite.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 98,000 ft³/s Sept. 28, 1926, gage height, 21.9 ft, site and datum then in use, by slope-area measurement of peak flow; minimum daily discharge since 1928, 0.05 ft³/s June 14-16, 1994, gage height, 2.02 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 26.....	2300	*679	*4.73

Minimum daily discharge, 0.81 ft³/s, June 25, 2002.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	5.2	8.6	14	14	15	13	6.2	2.3	1.1	13	2.7
2	4.7	5.3	8.7	14	14	16	13	6.2	2.2	1.1	91	2.5
3	4.8	5.4	8.8	14	14	16	12	6.0	1.9	1.1	29	2.5
4	8.2	5.3	9.2	14	14	16	12	5.8	2.0	1.1	63	2.5
5	4.7	5.4	9.5	14	14	16	12	5.6	2.0	1.1	45	2.4
6	4.4	5.6	9.6	14	15	16	11	5.4	1.9	1.0	e216	2.3
7	4.4	5.8	9.9	14	15	16	11	5.2	1.9	1.0	49	2.6
8	4.4	5.9	10	14	15	16	11	5.1	1.8	1.2	27	4.8
9	4.4	6.0	10	14	15	17	11	4.8	1.7	1.7	16	24
10	4.3	6.1	10	13	14	16	11	4.6	1.6	1.8	58	6.7
11	4.3	6.2	11	14	14	16	10	4.4	1.6	1.7	32	3.8
12	4.2	6.1	11	14	14	16	9.9	4.2	1.5	1.9	24	3.5
13	4.2	6.1	11	14	14	16	9.5	4.1	1.4	1.8	17	2.8
14	4.1	6.4	12	14	14	16	8.8	3.9	1.4	1.9	e13	2.5
15	4.1	6.6	12	14	14	16	8.2	3.7	1.4	2.3	e11	2.3
16	4.1	6.8	12	14	14	17	8.1	3.5	1.3	2.7	11	2.1
17	4.1	6.9	12	14	14	17	8.0	3.5	1.2	3.7	6.3	2.2
18	4.1	6.9	13	14	14	17	7.9	3.3	1.2	4.1	5.8	2.1
19	4.1	6.8	12	14	13	e17	7.7	3.1	1.2	5.6	9.9	2.0
20	4.1	6.8	12	14	14	e16	7.5	3.1	1.1	4.2	15	2.0
21	4.2	7.0	13	14	14	e15	7.7	3.0	1.1	3.8	7.8	2.0
22	4.3	7.2	13	14	14	15	7.6	2.9	1.1	4.6	5.9	1.9
23	4.3	7.4	13	14	14	14	7.4	2.9	1.0	4.8	5.1	1.9
24	4.3	7.4	13	14	14	14	7.3	2.8	1.0	4.5	4.2	1.8
25	4.6	7.4	14	14	14	14	7.1	2.7	0.81	9.6	3.8	1.8
26	4.5	7.7	14	14	14	14	7.0	2.7	0.90	56	3.4	1.8
27	4.5	7.8	14	13	15	14	7.0	2.8	0.97	57	3.1	1.7
28	4.7	7.9	14	14	15	14	6.9	2.7	1.0	47	2.9	1.7
29	4.9	8.0	14	14	---	14	6.7	2.6	1.0	e133	2.9	1.8
30	5.0	8.3	14	14	---	14	6.5	2.5	1.1	23	2.9	2.0
31	5.0	---	13	14	---	14	---	2.4	---	15	3.1	---
TOTAL	140.6	197.7	361.3	432	397	480	273.8	121.7	42.58	400.4	797.1	96.7
MEAN	4.535	6.590	11.65	13.94	14.18	15.48	9.127	3.926	1.419	12.92	25.71	3.223
MAX	8.2	8.3	14	14	15	17	13	6.2	2.3	133	216	24
MIN	4.1	5.2	8.6	13	13	14	6.5	2.4	0.81	1.0	2.9	1.7
MED	4.4	6.7	12	14	14	16	8.2	3.5	1.3	2.7	11	2.2
AC-FT	279	392	717	857	787	952	543	241	84	794	1580	192
CFSM	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.02	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 2002, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
	42.22	1087	1978	2.87	1996
	18.35	132	2001	4.71	1999
	46.36	1230	1915	5.52	1999
	39.83	507	1979	5.81	1999
	27.83	217	1915	7.18	1923
	24.01	160	1915	8.04	1999
	13.27	66.5	1905	3.03	1913
	8.329	37.2	1917	2.42	1918
	11.82	167	1925	1.19	1990
	138.3	876	1921	0.55	1997
	210.7	968	1954	9.97	1962
	80.83	1887	1926	4.15	1980

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1904 - 2002
ANNUAL TOTAL	9420.2	3740.88	
ANNUAL MEAN	25.81	10.25	55.33
HIGHEST ANNUAL MEAN			206
LOWEST ANNUAL MEAN			11.0
HIGHEST DAILY MEAN	1290	216	28800
LOWEST DAILY MEAN	2.9	0.81	0.05
ANNUAL SEVEN-DAY MINIMUM	2.9	0.95	0.06
ANNUAL RUNOFF (AC-FT)	18680	7420	40090
ANNUAL RUNOFF (CFSM)	0.021	0.008	0.045
10 PERCENT EXCEEDS	35	16	70
50 PERCENT EXCEEDS	12	7.1	13
90 PERCENT EXCEEDS	4.1	1.8	3.6

e Estimated

GILA RIVER BASIN

09471310 HUACHUCA CANYON NEAR FORT HUACHUCA, AZ

LOCATION--Lat 31° 31'01", long 110° 23'13", in NE1/4SW1/4 sec.14, T.22 S., R.19 E. (unsurveyed), Cochise County, Hydrologic Unit 15050202, on right bank in Fort Huachuca (U.S. Army) Military Reservation, 1.9 mi north of Huachuca Peak, 9.5 mi above confluence with the Babocomari River.

DRAINAGE AREA--Undetermined.

PERIOD OF RECORD--Apr. 2000 to current year.

GAGE--Water-stage recorder and concrete control with 90° V-notch weir. Elevation of gage is 5,600 ft above sea level from topographic map.

REMARKS--Records good except for estimated daily discharges, which are fair.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 30 ft³/s Aug. 5 at 1245, gage height 3.52 ft. Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.16	0.10	0.11	0.10	0.10	0.11	0.07	0.17	0.01	0.00	0.00	0.12
2	0.16	0.10	0.11	0.10	0.11	0.11	0.07	0.11	0.01	0.00	0.02	0.11
3	0.16	0.10	0.11	0.10	0.11	0.11	0.06	0.04	0.03	0.00	0.00	0.11
4	0.16	0.10	0.12	0.10	0.16	0.11	0.06	0.03	0.03	0.00	0.03	0.10
5	0.14	0.10	0.11	0.10	0.15	0.10	0.06	0.03	0.02	0.00	e6.6	0.10
6	0.15	0.10	0.11	0.10	0.11	0.11	0.06	0.03	0.02	0.00	e3.0	0.10
7	0.15	0.10	0.11	0.10	0.11	0.11	0.07	0.03	0.02	0.00	e0.38	0.11
8	0.15	0.11	0.11	0.10	0.11	0.11	0.07	0.02	0.02	0.00	e0.29	0.13
9	0.15	0.11	0.11	0.10	0.11	0.10	0.07	0.02	0.02	0.00	e0.23	0.15
10	0.14	0.11	0.11	0.10	0.10	0.09	0.07	0.02	0.02	0.00	e0.20	0.14
11	0.13	0.10	0.13	0.10	0.10	0.09	0.07	0.02	0.02	0.00	e0.19	0.13
12	0.12	0.10	0.12	0.10	0.10	0.09	0.06	0.02	0.01	0.00	e0.18	0.10
13	0.12	0.11	0.10	0.10	0.10	0.09	0.06	0.02	0.01	0.00	e0.16	0.08
14	0.12	0.11	0.11	0.10	0.10	0.09	0.07	0.03	0.01	0.00	e0.16	0.08
15	0.12	0.11	0.11	0.10	0.11	0.08	0.07	0.03	0.01	0.00	e0.15	0.07
16	0.12	0.11	0.11	0.09	0.12	0.09	0.06	0.04	0.01	0.00	e0.16	0.07
17	0.12	0.11	0.10	0.09	0.13	0.09	0.06	0.04	0.00	0.00	e0.15	0.07
18	0.11	0.11	0.10	0.09	0.18	0.09	0.07	0.03	0.00	0.02	e0.12	0.07
19	0.11	0.11	0.10	0.09	0.24	0.09	0.07	0.02	0.00	0.00	e0.09	0.07
20	0.11	0.11	0.10	0.09	0.12	0.09	0.07	0.02	0.00	0.00	e0.11	0.07
21	0.11	0.11	0.10	0.09	0.11	0.08	0.07	0.02	0.00	0.00	e0.10	0.06
22	0.11	0.11	0.10	0.09	0.11	0.09	0.07	0.02	0.00	0.00	e0.10	0.06
23	0.11	0.11	0.10	0.09	0.11	0.09	0.06	0.01	0.00	0.00	e0.11	0.05
24	0.11	0.11	0.10	0.09	0.11	0.09	0.05	0.01	0.00	0.00	e0.11	0.04
25	0.11	0.11	0.10	0.09	0.11	0.09	0.05	0.02	0.00	0.00	e0.12	0.04
26	0.11	0.11	0.10	0.09	0.11	0.09	0.05	0.04	0.00	0.01	e0.13	0.04
27	0.11	0.11	0.10	0.09	0.11	0.09	0.05	0.03	0.00	0.04	e0.13	0.04
28	0.10	0.11	0.10	0.11	0.11	0.08	0.09	0.02	0.00	0.00	0.11	0.04
29	0.10	0.11	0.10	0.10	---	0.07	0.17	0.01	0.00	0.00	0.12	0.04
30	0.10	0.11	0.10	0.10	---	0.07	0.16	0.01	0.00	0.00	0.12	0.04
31	0.10	---	0.10	0.10	---	0.07	---	0.01	---	0.00	0.12	---
TOTAL	3.87	3.21	3.29	2.99	3.35	2.86	2.14	0.97	0.25	0.06	13.49	2.43
MEAN	0.12	0.11	0.11	0.096	0.12	0.092	0.071	0.031	0.008	0.002	0.44	0.081
MAX	0.16	0.11	0.13	0.11	0.24	0.11	0.17	0.17	0.03	0.04	6.6	0.15
MIN	0.10	0.10	0.10	0.09	0.10	0.07	0.05	0.01	0.00	0.00	0.00	0.04
MED	0.12	0.11	0.10	0.10	0.11	0.09	0.07	0.02	0.01	0.00	0.12	0.07
AC-FT	7.7	6.4	6.5	5.9	6.6	5.7	4.2	1.9	0.5	0.1	27	4.8

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

MEAN	2.76	1.76	0.72	0.35	0.22	0.21	0.23	0.19	0.084	0.11	0.31	0.27
MAX	5.40	3.42	1.34	0.60	0.33	0.32	0.39	0.35	0.16	0.21	0.44	0.44
(WY)	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001	2002	2000
MIN	0.12	0.11	0.11	0.096	0.12	0.092	0.071	0.031	0.008	0.002	0.24	0.081
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2001	2002

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 2000 - 2002

ANNUAL TOTAL	97.66	38.91	
ANNUAL MEAN	0.27	0.11	0.60
HIGHEST ANNUAL MEAN			1.09 2001
LOWEST ANNUAL MEAN			0.11 2002
HIGHEST DAILY MEAN	1.2 Jan 1	6.6 Aug 5	50 Oct 23 2000
LOWEST DAILY MEAN	0.08 Aug 7	0.00 Jun 12	0.00 Jun 12 2002
ANNUAL SEVEN-DAY MINIMUM	0.10 Oct 28	0.00 Jun 16	0.00 Jun 16 2002
ANNUAL RUNOFF (AC-FT)	194	77	434
10 PERCENT EXCEEDS	0.42	0.13	1.3
50 PERCENT EXCEEDS	0.24	0.10	0.14
90 PERCENT EXCEEDS	0.11	0.00	0.02

e Estimated

09471380 UPPER BABOCOMARI RIVER NEAR HUACHUCA CITY, AZ

LOCATION.--Lat 31° 38' 06", long 110° 25' 29", sec. 10, T.23 S., R.20 E. (unsurveyed), Cochise County, Hydrologic Unit 15050202, San Ignacio del Babocomari Land Grant, approximately 5.3 mi west of Huachuca City, on the left bank, approximately 18.1 mi from the confluence with the San Pedro River.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--July 2000 to current year.

GAGE.--Water-stage recorder.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,870 ft³/s Oct. 23, 2000, gage height, 8.22 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,220 ft³/s Sept. 8 at 2200, gage height, 7.86 ft. Minimum daily discharge, 0.25 ft³/s July 18, Sept. 12-16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	3.2	3.9	2.4	3.2	0.86	0.96	0.55	0.47	0.30	0.26	0.54
2	11	3.2	3.9	2.5	2.9	0.85	1.00	0.56	0.46	0.31	0.29	0.54
3	7.3	3.3	5.5	2.6	3.7	e1.1	0.96	0.55	0.49	0.31	68	0.55
4	12	3.2	4.9	2.5	3.1	e1.1	0.92	0.54	0.50	0.30	1.3	0.56
5	5.1	3.2	5.2	2.5	3.5	1.2	0.93	0.52	0.52	0.31	3.9	0.57
6	4.5	4.0	5.5	2.4	2.6	1.2	0.89	0.52	0.51	0.30	e2.2	0.60
7	6.6	4.3	6.7	2.6	2.5	1.1	0.92	0.53	0.48	0.29	e1.0	0.58
8	4.4	4.2	6.2	2.7	2.7	1.1	0.90	0.52	0.47	0.29	e0.80	194
9	3.9	4.2	5.9	2.7	2.6	1.1	0.85	0.50	0.46	0.29	e0.70	173
10	3.5	4.4	4.9	2.6	2.5	1.1	0.79	0.50	0.48	0.28	e0.62	0.40
11	3.4	2.9	5.3	2.6	2.4	1.1	0.79	0.50	0.47	0.28	e0.57	0.26
12	3.6	2.7	e6.9	2.5	2.3	1.1	0.81	0.51	0.44	0.27	e0.54	0.25
13	3.6	2.7	4.1	2.4	2.3	1.2	0.78	0.54	0.42	0.27	e0.53	0.25
14	3.9	4.6	3.9	2.6	2.0	1.2	0.77	0.55	0.42	0.26	e0.53	0.25
15	4.1	3.9	4.2	2.6	1.3	1.2	0.83	0.55	0.41	135	0.52	0.25
16	4.2	4.1	4.7	2.6	1.3	1.1	0.82	0.54	0.39	27	0.54	0.25
17	4.5	4.1	4.3	3.2	1.2	1.2	0.80	0.55	0.37	0.26	0.55	0.26
18	5.4	4.3	3.8	3.9	1.2	1.3	0.79	0.56	0.37	0.25	0.56	0.26
19	5.6	4.1	3.3	3.7	1.3	1.3	0.80	0.57	0.37	0.28	0.58	0.27
20	4.4	4.1	3.0	3.4	1.3	1.2	0.78	0.58	0.35	0.30	0.58	0.27
21	3.9	4.4	3.0	3.0	1.3	1.3	0.78	0.59	0.34	0.31	0.54	0.27
22	3.7	4.3	2.9	3.4	1.3	1.2	0.78	0.58	0.33	0.34	0.53	0.26
23	3.6	2.8	2.8	3.5	1.2	1.1	0.74	0.58	0.33	0.33	0.52	0.26
24	4.2	2.6	3.3	3.4	1.2	1.2	0.77	0.62	0.32	0.36	0.51	0.26
25	5.7	2.8	3.1	3.8	1.1	1.2	0.75	0.59	0.32	0.39	0.53	0.26
26	6.2	2.9	2.8	3.1	1.1	1.1	0.67	0.58	0.32	0.44	0.52	0.26
27	5.7	3.3	2.7	3.6	0.97	1.2	0.66	0.55	0.32	260	0.53	0.26
28	6.3	5.3	2.7	4.0	0.89	1.1	0.65	0.52	0.32	0.72	0.53	0.26
29	5.4	7.2	2.6	5.2	---	1.1	0.63	0.48	0.32	0.27	0.54	0.26
30	4.5	4.6	2.7	4.8	---	1.1	0.60	0.47	0.31	0.26	0.57	0.27
31	3.5	---	2.6	3.7	---	0.99	---	0.48	---	0.26	0.55	---
TOTAL	161.9	114.9	127.3	96.5	54.96	35.20	24.12	16.78	12.08	430.83	90.44	376.53
MEAN	5.223	3.830	4.106	3.113	1.963	1.135	0.804	0.541	0.403	13.90	2.917	12.55
MAX	12	7.2	6.9	5.2	3.7	1.3	1.0	0.62	0.52	260	68	194
MIN	3.4	2.6	2.6	2.4	0.89	0.85	0.60	0.47	0.31	0.25	0.26	0.25
MED	4.5	4.0	3.9	2.7	1.7	1.1	0.79	0.55	0.40	0.30	0.54	0.26
AC-FT	321	228	252	191	109	70	48	33	24	855	179	747

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

	2000	2001	2002	2000	2001	2002	2000	2001	2002	2000	2001	2002
MEAN	33.35	12.54	6.860	6.394	4.869	5.900	4.739	2.348	1.905	9.164	7.785	5.652
MAX	61.5	21.2	9.61	9.67	7.77	10.7	8.67	4.15	3.41	13.9	16.4	12.6
(WY)	2001	2001	2001	2001	2001	2001	2001	2001	2001	2002	2000	2002
MIN	5.22	3.83	4.11	3.11	1.96	1.14	0.80	0.54	0.40	4.43	2.92	0.061
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2001	2002	2000

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 2000 - 2002
ANNUAL TOTAL	2137.66	1541.54	
ANNUAL MEAN	5.857	4.223	8.378
HIGHEST ANNUAL MEAN			12.5
LOWEST ANNUAL MEAN			4.22
HIGHEST DAILY MEAN	35	260	1160
LOWEST DAILY MEAN	0.12	0.25	0.00
ANNUAL SEVEN-DAY MINIMUM	0.21	0.25	0.02
ANNUAL RUNOFF (AC-FT)	4240	3060	6070
10 PERCENT EXCEEDS	11	4.5	11
50 PERCENT EXCEEDS	5.1	1.1	3.3
90 PERCENT EXCEEDS	1.3	0.30	0.39

e Estimated

GILA RIVER BASIN

09471400 BABOCOMARI RIVER NEAR TOMBSTONE, AZ

LOCATION.--Lat 31° 42'01", long 110° 13'35", in NW $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 17, T.20 S., R.21 E., Cochise County, Hydrologic Unit 15050202, gage is on the left bank, approximately 2.4 mi southwest of Fairbanks, and approximately 3.1 mi upstream from confluence with the San Pedro River.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--Mar. 1999 to current year.

GAGE.--Water-stage recorder.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 862 ft³/s, Oct. 23, 2000, gage height 5.28 ft; minimum daily, 0.01 ft³/s June 17, 2000.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 796 ft³/s Aug. 3 at 1330, gage height 5.18 ft. Minimum daily discharge, 0.0 ft³/s June 13--July 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.12	0.61	0.95	1.2	1.1	1.3	1.3	0.84	0.14	0.00	0.64	0.43
2	0.18	0.64	0.97	1.2	1.1	1.3	1.3	0.88	0.12	0.00	0.73	0.41
3	13	0.66	0.97	1.2	1.1	e1.1	1.3	0.88	0.11	0.00	50	0.39
4	3.2	0.64	0.96	1.2	1.1	e1.1	1.2	0.86	0.11	0.00	12	0.35
5	0.42	0.64	0.96	1.2	0.98	1.4	1.2	0.79	0.11	0.00	4.0	0.31
6	0.36	0.70	0.98	1.3	0.98	1.3	1.1	0.73	0.10	0.00	20	0.29
7	0.39	0.71	0.99	1.3	0.97	1.3	1.1	0.72	0.08	0.00	1.3	0.32
8	0.42	0.67	1.0	1.3	0.97	1.4	1.1	0.70	0.07	0.00	0.99	0.58
9	0.45	0.67	1.0	1.3	0.96	1.4	1.1	0.67	0.05	0.00	0.92	31
10	0.45	0.69	0.99	1.3	0.96	1.4	1.1	0.64	0.04	0.00	1.4	17
11	0.47	0.70	1.1	1.3	0.97	1.4	1.0	0.57	0.04	0.00	0.90	1.1
12	0.51	0.66	1.1	1.3	0.97	1.4	0.99	0.59	0.04	0.00	0.73	0.84
13	0.53	0.67	1.1	1.3	1.0	1.4	0.95	0.59	0.02	0.00	0.65	0.67
14	0.55	0.70	1.1	1.3	0.99	1.4	0.97	0.50	0.00	0.00	0.62	0.48
15	0.58	0.73	1.1	1.3	1.1	1.4	0.94	0.44	0.00	0.00	0.57	0.44
16	0.60	0.76	0.98	1.3	1.1	1.4	0.95	0.44	0.00	1.8	0.56	0.44
17	0.59	0.78	0.98	1.3	1.1	1.4	1.0	0.42	0.00	2.9	0.53	0.43
18	0.56	0.79	0.99	1.2	1.1	1.4	1.0	0.36	0.00	1.1	0.52	0.39
19	0.57	0.80	1.0	1.2	1.1	1.4	0.99	0.31	0.00	0.18	0.56	0.37
20	0.55	0.79	1.0	1.2	1.2	1.4	0.99	0.30	0.00	0.14	0.52	0.34
21	0.53	0.81	1.1	1.3	1.2	1.5	1.0	0.27	0.00	0.11	0.49	0.32
22	0.53	0.80	1.0	1.2	1.3	1.5	1.0	0.28	0.00	2.6	0.44	0.29
23	0.56	0.81	1.1	1.2	1.3	1.4	0.99	0.29	0.00	14	0.41	0.27
24	0.59	0.84	1.1	1.2	1.3	1.4	0.92	0.28	0.00	1.6	0.37	0.23
25	0.60	0.86	1.1	1.3	1.3	1.4	0.93	0.28	0.00	0.33	0.33	0.22
26	0.61	0.87	1.1	1.3	1.3	1.4	0.87	0.28	0.00	22	0.30	0.21
27	0.61	0.84	1.1	1.3	1.3	1.4	0.90	0.28	0.00	73	0.27	0.18
28	0.59	0.87	1.1	1.3	1.3	1.4	0.91	0.26	0.00	6.6	0.24	0.22
29	0.56	0.89	1.1	1.3	---	1.4	0.88	0.24	0.00	1.2	0.30	0.21
30	0.57	0.93	1.1	1.3	---	1.4	0.83	0.20	0.00	0.88	6.3	0.24
31	0.57	---	1.2	1.2	---	1.4	---	0.17	---	0.74	0.74	---
TOTAL	30.82	22.53	32.32	39.1	31.15	42.6	30.81	15.06	1.03	129.18	108.33	58.97
MEAN	0.994	0.751	1.043	1.261	1.113	1.374	1.027	0.486	0.034	4.167	3.495	1.966
MAX	13	0.93	1.2	1.3	1.3	1.5	1.3	0.88	0.14	73	50	31
MIN	0.12	0.61	0.95	1.2	0.96	1.1	0.83	0.17	0.00	0.00	0.24	0.18
MED	0.56	0.75	1.0	1.3	1.1	1.4	1.0	0.44	0.00	0.11	0.62	0.36
AC-FT	61	45	64	78	62	84	61	30	2.0	256	215	117

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

MEAN	9.405	4.437	2.303	2.598	2.637	2.579	1.216	0.781	0.249	1.763	3.473	0.545
MAX	17.8	8.09	3.48	3.92	4.15	3.78	1.57	1.42	0.39	4.16	6.35	0.70
(WY)	2001	2001	2001	2001	2001	2001	2001	2001	2001	2002	2000	2001
MIN	0.96	0.79	1.13	1.28	1.12	1.37	0.99	0.42	0.035	0.40	0.59	0.39
(WY)	2002	2002	2002	2002	2002	2002	2000	2000	2002	2000	2001	2000

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 2000 - 2002

ANNUAL TOTAL	603.34	541.90		
ANNUAL MEAN	1.653	1.485		
HIGHEST ANNUAL MEAN			3.894	
LOWEST ANNUAL MEAN			3.89	2001
HIGHEST DAILY MEAN	13	Oct 3	73	Jul 27
LOWEST DAILY MEAN	0.05	Jul 1	0.00	Jun 14
ANNUAL SEVEN-DAY MINIMUM	0.12	Jun 28	0.00	Jun 14
ANNUAL RUNOFF (AC-FT)	1200		1070	
10 PERCENT EXCEEDS	4.2		1.4	4.2
50 PERCENT EXCEEDS	0.81		0.86	0.95
90 PERCENT EXCEEDS	0.23		0.05	0.17

e Estimated

GILA RIVER BASIN

09471550 SAN PEDRO RIVER NEAR TOMBSTONE, AZ

LOCATION--Lat 31° 45' 03", long 110° 12' 02", in SE 1/4 sec. 28, T.19 S., R.21 E. (unsurveyed), Cochise County, Hydrologic Unit 15050202, in Spanish land grant of San Juan de las Boquillas y Nogales, on right bank 0.5 mi downstream from Willow Wash, 2.6 mi north of Fairbank, and 8 mi northwest of Tombstone.

DRAINAGE AREA--1,740 mi² approximately, of which 696 mi² is in Mexico.

PERIOD OF RECORD--Apr. 1967 to Sept. 1986, Oct. 1996 to current year.

GAGE--Water-stage recorder. Elevation of gage is 3,780 ft above sea level, from topographic map.

REMARKS--Records good except for estimated daily discharges, which are poor. Diversions above station, mostly by pumping from ground water.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 24,200 ft³/s Oct. 9, 1977, gage height, 11.40 ft, from rating curve extended above 4,900 ft³/s on basis of slope-area measurements at gage heights 8.89 ft and 11.40 ft; no flow at times during most summers.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 3,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 27.....	0130	*1,220	*5.89

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	6.0	13	14	14	14	4.9	0.00	0.00	5.6	0.09
2	0.00	0.00	6.3	13	13	13	14	5.0	0.00	0.00	79	0.00
3	6.1	0.00	6.9	13	15	13	13	4.9	0.00	0.00	129	0.00
4	16	0.00	7.4	13	15	13	13	4.8	0.00	0.00	107	0.00
5	5.1	0.00	7.5	13	15	14	12	4.4	0.00	0.00	66	0.00
6	2.6	0.00	7.8	13	15	14	12	4.0	0.00	0.00	354	0.00
7	2.2	0.00	8.1	13	14	14	12	3.8	0.00	0.00	95	0.00
8	2.1	0.00	8.4	13	14	14	12	3.5	0.00	0.00	41	31
9	2.1	0.00	9.4	13	14	14	12	3.3	0.00	0.00	29	42
10	2.0	0.00	9.6	13	13	14	11	2.9	0.00	0.00	88	71
11	1.7	0.00	9.7	13	13	14	11	2.5	0.00	0.00	39	4.5
12	e1.2	0.00	9.8	13	13	14	10	2.2	0.00	0.00	59	e4.0
13	e0.00	0.16	9.7	13	13	14	10	2.2	0.00	0.00	24	e0.51
14	0.00	1.8	10	13	13	14	9.9	2.0	0.00	0.00	16	e0.00
15	0.00	2.2	11	13	13	14	9.7	1.6	0.00	0.00	11	e0.00
16	0.00	2.3	11	13	13	14	9.4	1.2	0.00	0.00	8.6	e0.00
17	0.00	2.8	11	13	13	14	9.2	0.93	0.00	0.00	8.0	e0.00
18	0.00	3.1	11	13	13	14	9.0	0.59	0.00	0.00	6.6	e0.01
19	0.00	3.2	11	13	13	14	8.4	0.04	0.00	0.00	e10	e0.01
20	0.00	3.5	12	13	13	14	7.9	0.00	0.00	0.00	e32	e0.00
21	0.00	3.7	12	13	13	14	7.9	0.00	0.00	0.00	e11	e0.00
22	0.00	3.9	12	13	13	14	8.1	0.00	0.00	0.00	e0.00	e0.00
23	0.00	4.1	12	14	13	14	7.7	0.00	0.00	0.00	e0.00	e0.00
24	0.00	4.1	12	13	13	14	7.3	0.00	0.00	7.7	e0.00	e0.00
25	0.00	4.3	12	13	13	14	7.3	0.00	0.00	0.00	e0.00	e0.00
26	0.00	4.3	14	14	13	14	6.6	0.00	0.00	28	e0.00	e0.00
27	0.00	4.7	13	14	13	14	6.2	0.00	0.00	267	e0.00	e0.00
28	0.00	4.9	13	14	14	14	6.1	0.00	0.00	86	e0.00	e0.00
29	0.00	5.6	13	14	---	14	5.9	0.00	0.00	192	e0.00	e0.00
30	0.00	6.0	13	14	---	14	5.4	0.00	0.00	36	e41	e0.00
31	0.00	---	13	14	---	14	---	0.00	---	12	11	---
TOTAL	41.10	64.66	322.6	410	377	431	288.0	54.76	0.00	628.70	1270.80	153.10
MEAN	1.326	2.155	10.41	13.23	13.46	13.90	9.600	1.766	0.000	20.28	40.99	5.103
MAX	16	6.0	14	14	15	14	14	5.0	0.00	267	354	71
MIN	0.00	0.00	6.0	13	13	13	5.4	0.00	0.00	0.00	0.00	0.00
AC-FT	82	128	640	813	748	855	571	109	0.00	1250	2520	304

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2002, BY WATER YEAR (WY)

MEAN	100.8	19.79	51.77	46.04	37.23	31.46	13.50	6.629	4.624	98.38	154.8	51.24
MAX	998	185	375	450	214	179	43.7	20.8	45.2	369	820	177
(WY)	1978	2001	1979	1979	1983	1983	1985	1985	2000	1974	1984	1982
MIN	0.000	0.000	1.87	2.35	4.80	6.17	4.16	0.35	0.000	0.000	6.86	0.085
(WY)	1974	1999	1999	1999	1999	1999	1982	1999	1974	1997	1997	1973

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1967 - 2002

ANNUAL TOTAL	9963.61	4041.72				
ANNUAL MEAN	27.30	11.07				
HIGHEST ANNUAL MEAN		157	1984			
LOWEST ANNUAL MEAN		10.1	1997			
HIGHEST DAILY MEAN	1290	Aug 14	354	Aug 6	17100	Oct 9 1977
LOWEST DAILY MEAN	0.00	Jan 31	0.00	Oct 1	0.00	Jun 22 1967
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 12	0.00	Oct 13	0.00	Jun 22 1967
ANNUAL RUNOFF (AC-FT)	19760	8020	38400			
10 PERCENT EXCEEDS	42	14	74			
50 PERCENT EXCEEDS	12	6.0	11			
90 PERCENT EXCEEDS	0.00	0.00	0.00			

e Estimated

09472050 SAN PEDRO RIVER AT REDINGTON BRIDGE NEAR REDINGTON, AZ

LOCATION--Lat 32° 26' 46", long 110° 29' 16", in SW_{1/4}NE_{1/4}SE_{1/4} sec. 34, T.11 S., R.18 E., Pima County, Hydrologic Unit 15050203, on left bank of bridge 1.5 mi downstream from the Cochise/Pima County line, 0.5 mi east of Redington and 6.4 mi downstream from former gage, sta 09472000.

DRAINAGE AREA--3,096 mi², of which 696 mi² is in Mexico.

PERIOD OF RECORD--July 1998 to current year.

GAGE--Water-stage recorder. Datum of gage is 2,820 ft above sea level.

REMARKS--Records fair except for discharges below 10 ft³/s and estimated discharges, which are poor. Diversions above station for irrigation of about 10,800 acres in 1978, excluding an unknown amount in Mexico.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 4,900 ft³/s, Oct. 24, 2000, gage height, 14.18 ft. No flow for many days each year.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 1,500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 4.....	1630	*4,520	*13.90

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	4.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	350	0.00
5	1.8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e42	0.00
6	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	63	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e91	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e30	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.27	0.00
10	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e16	168
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.06	53
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	e1.8	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e6.0	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	e8.3	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.62	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	93	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	93	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	3.3	58	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	28	7.9	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	23	0.00	---
TOTAL	6.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	276.15	674.95	221.10
MEAN	0.210	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.908	21.77	7.370
MAX	4.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	93	350	168
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MED	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	548	1340	439
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2002, BY WATER YEAR (WY)

MEAN	109.9	29.17	0.000	1.974	0.124	0.000	0.000	0.000	0.062	49.01	128.6	17.38
MAX	439	117	0.000	7.89	0.50	0.000	0.000	0.000	0.25	129	230	49.4
(WY)	2001	2001	1999	2001	2001	1999	1999	1999	2000	1999	2000	1999
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.64	50.9	0.000
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	2000	1998	2001

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1998 - 2002
ANNUAL TOTAL	2792.47	1178.70	
ANNUAL MEAN	7.651	3.229	34.83
HIGHEST ANNUAL MEAN			54.5
LOWEST ANNUAL MEAN			20.5
HIGHEST DAILY MEAN	576	350	2600
LOWEST DAILY MEAN	0.00	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	0.00	0.00
ANNUAL RUNOFF (AC-FT)	5540	2340	25230
ANNUAL RUNOFF (CFSM)	0.002	0.001	0.011
10 PERCENT EXCEEDS	9.9	0.00	43
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

09473000 ARAVAIPA CREEK NEAR MAMMOTH, AZ

LOCATION--Lat 32° 50'37", long 110° 37'09", in NW^{1/4}NW^{1/4} sec. 9, T.7 S., R.17 E., Pinal County, Hydrologic Unit 15050203, on right bank 6 mi upstream from mouth and 9 mi north of Mammoth.

DRAINAGE AREA--537 mi².

PERIOD OF RECORD--May 1931 to Dec. 1942 (published as "near Feldman"), May 1966 to current year. Monthly discharge only July 1941 to Sept. 1941, published in WSP 1313.

REVISED RECORDS--WDR AZ-68-1: 1967. WDR AZ-82-1: 1968, 1969, 1973, 1979 (M). WDR AZ-90-1: Drainage area.

GAGE--Water-stage recorder and, since Mar. 1980, crest-stage gage. Elevation of gage is 2,345 ft above sea level, from topographic map. Oct. 1, 1981, to Oct. 1, 1983, gage at site 300 ft upstream at datum 4.19 ft higher. Prior to Oct. 1, 1981, at datum 1.00 ft higher. May 1931 to Dec. 1942 at site 0.3 mi downstream at different datum.

REMARKS--Records good except for estimated daily discharges, which are poor. Diversions for irrigation of several hundred acres above station.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge since at least 1919, 70,800 ft³/s Oct. 1, 1983, from slope-area measurement of peak flow, gage height, 16.76 ft, from profile past gage; minimum, 0.3 ft³/s Aug. 30, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD--A discharge of 20,000 ft³/s occurred Aug. 2, 1919, at site of former gaging station 6 mi downstream, operated Apr. 1919 to Sept. 1921, gage height, 6.3 ft, from floodmark, site and datum then in use, from rating curve extended above 5,100 ft³/s on basis of velocity-area study.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 2,500 ft³/s and (or) maximum (*), from rating curve extended above 130 ft³/s on the basis of slope-area measurement at gage height 16.76 ft:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 10	2015	*8,270	*7.81

Minimum daily discharge, 2.0 ft³/s July 7, 8, and 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.9	11	14	16	16	15	13	6.7	3.4	2.1	13	6.9
2	9.2	11	14	e16	16	15	14	6.9	3.5	2.1	12	6.6
3	9.5	11	14	e16	16	16	13	6.7	3.5	2.1	12	6.6
4	9.4	11	15	16	16	16	13	6.4	3.5	2.1	51	6.4
5	9.5	12	15	16	16	16	12	6.2	3.6	2.1	11	7.1
6	10	12	15	16	16	16	13	5.9	3.3	2.1	30	7.0
7	e13	12	14	16	16	15	13	5.9	3.1	2.0	11	7.2
8	17	e12	14	15	17	16	13	5.8	2.9	2.0	10	33
9	13	e13	15	14	17	16	12	5.7	2.9	2.0	9.6	12
10	12	e13	15	14	17	15	12	5.5	2.7	2.2	9.4	485
11	11	e13	16	14	17	16	12	5.2	e2.7	2.2	8.7	29
12	11	e13	17	14	17	16	12	5.0	e2.5	2.4	8.4	12
13	10	e13	16	14	17	16	11	4.9	e2.4	2.4	8.1	12
14	10	e13	16	14	17	16	11	4.7	e2.4	2.4	7.8	10
15	10	13	16	14	16	17	10	4.4	e2.4	14	7.2	8.9
16	10	13	16	14	16	17	11	4.4	e2.4	15	7.0	8.6
17	9.6	13	16	14	16	16	10	4.4	e2.3	14	6.9	8.5
18	9.6	13	16	14	17	16	10	4.1	2.2	15	6.8	8.4
19	9.7	13	16	14	17	16	10	4.1	2.2	13	7.3	8.4
20	9.7	13	16	14	16	16	9.6	4.2	2.2	13	8.3	8.3
21	9.8	13	17	14	16	16	9.4	4.3	2.2	13	7.9	8.1
22	10	13	16	14	16	16	9.0	4.6	2.2	13	7.6	7.8
23	10	13	16	14	15	15	8.7	4.6	2.2	25	7.2	7.7
24	10	13	16	15	15	15	8.6	4.6	2.2	21	6.9	7.6
25	10	13	16	16	15	15	8.5	4.7	2.1	17	6.8	7.6
26	10	13	16	16	16	15	8.4	4.5	2.1	42	6.5	7.7
27	9.6	13	16	16	16	14	8.5	4.5	2.1	27	6.4	7.7
28	10	14	16	16	16	15	8.3	4.4	2.1	51	6.3	7.8
29	10	14	16	16	---	14	7.6	4.1	2.1	16	9.0	7.7
30	10	14	16	17	---	14	6.9	3.6	2.1	14	7.7	7.8
31	10	---	16	17	---	14	---	3.4	---	13	7.0	---
TOTAL	321.5	381	483	466	454	481	318.5	154.4	77.5	366.2	324.8	769.4
MEAN	10.4	12.7	15.6	15.0	16.2	15.5	10.6	4.98	2.58	11.8	10.5	25.6
MAX	17	14	17	17	17	17	14	6.9	3.6	51	51	485
MIN	8.9	11	14	14	15	14	6.9	3.4	2.1	2.0	6.3	6.4
AC-FT	638	756	958	924	901	954	632	306	154	726	644	1530
CFSM	0.02	0.02	0.03	0.03	0.03	0.03	0.02	0.01	0.00	0.02	0.02	0.05
IN.	0.02	0.03	0.03	0.03	0.03	0.03	0.02	0.01	0.01	0.03	0.02	0.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2002, BY WATER YEAR (WY)

	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
MEAN	45.9	23.9	47.4	53.0	64.6	58.2	21.1	14.8	12.0	24.1	31.5	24.1	1098	91.1	474	682	215	349	53.1	44.8	40.1	115	133	55.8	1984	1979	1979	1993	1983	1991	1993	1979	1940	1942	1935	1984	6.19	8.70	9.69	10.1	11.1	9.49	7.17	4.33	1.90	4.71	7.81	5.35	1939	1940	1971	1940	1977	1976	1976	1972	1939	1997	1975	1973											

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1932 - 2002
ANNUAL TOTAL	4922.2	4597.3	
ANNUAL MEAN	13.5	12.6	34.2
HIGHEST ANNUAL MEAN			140
LOWEST ANNUAL MEAN			9.62
HIGHEST DAILY MEAN	39	485	16000
LOWEST DAILY MEAN	4.0	2.0	0.40
ANNUAL SEVEN-DAY MINIMUM	4.3	2.1	0.63
ANNUAL RUNOFF (AC-FT)	9760	9120	24740
ANNUAL RUNOFF (CFSM)	0.025	0.023	0.064
ANNUAL RUNOFF (INCHES)	0.34	0.32	0.86
10 PERCENT EXCEEDS	22	16	45
50 PERCENT EXCEEDS	13	12	16
90 PERCENT EXCEEDS	7.4	2.9	6.1

e Estimated

GILA RIVER BASIN

09474000 GILA RIVER AT KELVIN, AZ

LOCATION--Lat 33° 06'10", long 110° 58'33", in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 12, T.4 S., R.13 E., Pinal County, Hydrologic Unit 15050100, on left bank at Kelvin, 500 ft downstream from Mineral Creek, 18 mi downstream from San Pedro River, and 19 mi upstream from Ashurst-Hayden Dam.

DRAINAGE AREA--18,011 mi², of which 5,125 mi² is below Coolidge Dam.

PERIOD OF RECORD--Jan. 1911 to current year.

REVISED RECORDS--WSP 329: 1911. WSP 609: 1916(M). WSP 629: 1914--17. WSP 1119: 1913, 1915, 1917(M), 1921(M), 1922--23, 1927(M). WSP 1283: Drainage area.

GAGE--Water-stage recorder. Datum of gage is 1,745.02 ft above sea level. Prior to June 15, 1914, and Dec. 1, 1914, to Aug. 31, 1915, nonrecording gages at several sites within 2 mi of present site at different datums. Sept. 1, 1915, to Sept. 30, 1963, water-stage recorder at site 900 ft downstream at datum 1.80 ft lower. Jan. 16, 1985, to June 1990, supplementary water-stage recorder at same site and datum.

REMARKS--Records fair, except estimated daily discharges, which are poor. Large diversions above station for irrigation, of which about 90 percent is above Coolidge Dam. About 82,000 acres irrigated, a considerable portion by pumping from ground water. Flow regulated by San Carlos Reservoir 49 mi upstream since Nov. 15, 1928. (See sta 09469000.) San Pedro River contributes major portion of unregulated inflow.

AVERAGE DISCHARGE (adjusted for storage in San Carlos Reservoir)--91 years, 520 ft³/s, 376,700 acre-ft/yr; median of yearly mean discharges, 324 ft³/s, 235,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD--1911--28: Maximum discharge, about 132,000 ft³/s Jan. 20, 1916, gage height, 19.5 ft, site and datum then in use, from rating curve extended above slope-area measurement at gage height, 16.2 ft for flood of Sept. 28, 1926; no flow Feb. 25, 1913.

1929--2000: Maximum discharge, 100,000 ft³/s Oct. 2, 1983, gage height, 33.0 ft from floodmark, from rating curve extended above 12,000 ft³/s on basis of peak discharge computed by step-backwater method at Hayden Railroad Bridge, 17.8 mi upstream, and by flood-routing; minimum daily, 0.0 ft³/s Aug. 4, 2000.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 4,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 11.....	1045	*1,660	*6.57

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e214	e26	8.1	139	95	254	e82	8.2	1.8	0.00	0.09	e1.5
2	225	e22	29	138	96	233	e68	8.2	2.3	0.02	0.00	e1.0
3	224	e18	171	139	96	229	e55	7.7	1.2	0.00	0.00	e0.50
4	243	e15	218	147	96	229	47	7.3	0.81	0.01	0.00	e0.12
5	255	e12	241	156	95	229	43	7.1	0.65	0.03	174	0.14
6	258	12	242	156	96	265	39	6.6	0.52	0.06	37	0.21
7	287	11	248	157	102	293	36	6.2	e0.45	0.00	71	0.20
8	278	10	253	157	104	333	33	5.7	e0.38	0.00	48	0.27
9	287	9.7	260	170	106	364	31	5.2	e0.31	0.09	137	9.9
10	273	9.4	261	181	104	364	30	4.8	e0.24	0.11	164	46
11	270	9.1	272	156	104	360	28	4.3	e0.17	0.09	124	524
12	237	8.8	276	130	104	363	26	4.0	0.14	0.05	127	90
13	221	8.5	209	122	103	353	25	3.5	0.10	0.01	102	22
14	220	8.1	166	120	101	352	24	3.0	0.09	0.03	74	20
15	215	8.0	142	119	100	359	23	2.6	0.10	0.09	69	54
16	213	7.9	138	118	99	368	23	2.2	0.05	0.08	69	94
17	214	7.8	185	116	94	314	22	1.9	0.04	0.08	82	121
18	211	7.7	222	109	98	269	22	1.5	0.04	0.08	69	78
19	214	7.6	225	e103	109	e269	21	1.1	0.04	0.07	28	73
20	217	7.4	229	e96	110	e258	20	0.87	0.02	0.02	15	73
21	212	7.3	229	e89	110	249	20	0.76	0.06	0.00	8.2	69
22	214	7.3	182	e82	109	248	19	0.69	0.05	0.00	6.8	42
23	216	7.2	148	e75	172	252	18	2.2	0.01	0.00	6.3	28
24	211	7.1	244	71	256	182	17	12	0.00	0.00	5.5	20
25	206	7.5	355	70	262	118	15	16	0.00	0.00	5.1	17
26	204	7.6	391	70	269	109	13	19	0.00	0.00	5.8	21
27	e142	7.5	399	74	276	104	12	20	0.00	0.00	4.8	26
28	e68	7.8	437	92	263	100	10	13	0.00	2.1	4.5	30
29	e51	7.9	408	94	---	100	9.1	7.4	0.00	33	4.4	61
30	e39	8.0	246	95	---	101	8.7	4.2	0.00	10	3.8	72
31	e31	---	152	96	---	102	---	2.2	---	2.4	e2.0	---
TOTAL	6370	301.2	7186.1	3637	3729	7723	839.8	189.42	9.57	48.41	1447.29	1594.84
MEAN	205.5	10.04	231.8	117.3	133.2	249.1	27.99	6.110	0.319	1.562	46.69	53.16
MAX	287	26	437	181	276	368	82	20	2.3	33	174	524
MIN	31	7.1	8.1	70	94	100	8.7	0.69	0.00	0.00	0.00	0.12
AC-FT	12630	597	14250	7210	7400	15320	1670	376	19	96	2870	3160
CAL YR 2001	TOTAL	131056.3	MEAN	359.1	MAX	880	MIN	7.1	AC-FT	260000		
WTR YR 2002	TOTAL	33075.63	MEAN	90.62	MAX	524	MIN	0.00	AC-FT	65610		

e Estimated

09474000 GILA RIVER AT KELVIN, AZ—CONTINUED

WATER-QUALITY RECORDS

LOCATION --Water samples collected between Florence-Kelvin road bridge and Mineral Creek, and 700 ft. to 500 ft. upstream from gaging station.

PERIOD OF RECORD --Dec. 1950 to Sept. 1994, Feb. 1996 to Feb. 1998, Sept. 2001 to current year.

PERIOD OF DAILY RECORD --

SPECIFIC CONDUCTANCE: Oct. 1964 to Sept. 1976, Oct. 1996 to Feb. 1998.

WATER TEMPERATURE: Dec. 1950 to Sept. 1976, Oct. 1996 to Feb. 1998.

SUSPENDED-SEDIMENT DISCHARGE: Jan. 1958 to Sept. 1976.

REMARKS --No inflow from Mineral Creek between sampling point and gaging station except during infrequent periods of heavy local rains. Unpublished daily specific conductance measurements for period December 1950 to September 1964 available from District Office in Tucson, AZ.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TUR-BIDITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS NONCARB DISSOLV FLD. AS (MG/L) (00904)	HARD-NESS TOTAL (MG/L) (00900)	CALCIUM DIS-SOLVED AS (MG/L) (00915)	
SEP 12...	1215	261	28	710	8.2	110	8.4	1300	38.5	26.2	37	210	53.0	
Date		CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA) (00916)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, RECOV-ERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM SORP-TION RATIO (MG/L AS N) (00931)	ALKA-LINITY WAT DIS TOT IT (MG/L AS CACO3) (39086)	BICAR-BONATE WATER DIS IT (MG/L AS HCO3) (00453)	CAR-BONATE DIS IT (MG/L AS CO3) (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	RESIDUE TOTAL DEG. C, SUS-PENDE (MG/L) (00530)	
SEP 12...	56.0	20.0	21.0	5.80	5	170	178	200	8	220	1.1	120	48	
Date		SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	E COLI, WATER (100 ML) (31633)	COLI-FORM, FECAL, UM-MF (COLS./100 ML) (31625)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	
SEP 12...	1.00	735	697	.40	.02	.03	<.020	.38	.05	15	E26k	E70k	<1	
Date		ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
SEP 12...	<1	5	6	67.0	84.0	<1	<1	189	198	<.5	<.5	<1	<1	
Date		COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
SEP 12...	2	9	<2	1100	<2	<2	3	122	<.10	<.1	<1	3	<1	
Date		SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	STRON-TIUM, TOTAL RECOV-ERABLE (UG/L AS SR) (01082)	THAL-LIUM, DIS-SOLVED (UG/L AS TL) (01057)	THAL-LIUM, TOTAL RECOV-ERABLE (UG/L AS TL) (01059)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SEDI-MENT, SUS-PENDE (MG/L) (80154)	SEDI-MENT, SUS-PENDE (T/DAY) (80155)			
SEP 12...	<1	<1	<1	550	<2	<2	8	7	52	36.6				

Remark codes used in this report:

< -- Less than

E -- Estimated value

Value qualifier codes used in this report:

k -- Counts outside acceptable range

GILA RIVER BASIN

09474000 GILA RIVER AT KELVIN, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TUR-BID-ITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, SATUR-ATION (PER-CENT) (00301)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS DISSOLV FLD. AS CACO3 (MG/L) (00904)	HARD-NESS TOTAL (MG/L CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
DEC 05...	1305	240	61	720	10.7	99	8.4	1300	20.0	9.3	18	210	50.0
MAR 19...	1330	419	23	715	10.3	106	8.5	1620	22.0	13.8	53	270	67.0
MAY 21...	1215	.70	1.3	713	9.4	119	8.2	2310	24.0	23.3	310	530	132
AUG 21...	1210	8.0	72	715	8.2	115	8.4	2110	33.5	28.7	86	330	82.0

Date	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA) (00916)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT DIS TOT IT (MG/L AS CACO3) (39086)	BICAR-BONATE WATER DIS IT (MG/L AS HCO3) (00453)	CAR-BONATE WATER DIS IT (MG/L AS CO3) (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)
DEC 05...	57.0	20.0	22.0	6.10	5	180	188	222	4	230	1.1	120	113
MAR 19...	68.0	24.0	26.0	6.10	6	220	213	235	12	280	1.2	170	36
MAY 21...	126	49.0	49.0	8.40	5	290	225	264	5	360	1.3	420	4
AUG 21...	92.0	30.0	32.0	9.10	7	300	243	279	8	390	1.3	220	70

Date	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, RESIDUE AT 180 DEG. C SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, AM-MONIA + ORGANIC (MG/L AS N) (00625)	NITRO-GEN, AM-MONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AM-MONIA (MG/L AS NH4) (71845)	NITRO-GEN, NO2+NO3 (MG/L AS N) (00630)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	E COLI, MTEC MF (COL/100 ML) (31633)	COLI-FORM, FECAL, UM-MF (COLS./100 ML) (31625)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)
DEC 05...	1.04	765	721	E.70c1	.06	.08	.100	E.03c1	<5	E130k	370	<1	<1
MAR 19...	1.31	960	896	.50	<.01	--	<.020	.05	6	<2k	E3k	<1	<1
MAY 21...	2.04	1500	1400	<.20	.01	.01	<.020	<.02	11	E8k	E18k	<1	<1
AUG 21...	1.70	1250	1180	.90	<.01	--	<.020	.25	19	E180k	--	<1	<1

Date	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
DEC 05...	4	5	48.0	90.0	<1	<1	194	201	<.5	<.5	<1	2	<2
MAR 19...	4	4	63.0	80.0	<1	<1	244	250	<.5	<.5	<1	<1	<2
MAY 21...	2	2	88.0	89.0	<1	<1	297	298	<.5	<.5	<1	<1	<2
AUG 21...	8	10	140	170	<1	<1	327	334	<.5	<.5	<1	1	3

GILA RIVER BASIN

09474000 GILA RIVER AT KELVIN, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL DIS- SOLVED (UG/L AS MN) (01056)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL SOLVED (UG/L AS SE) (01147)
DEC 05...	18	<2	2690	<2	3	2	509	<.10	<.1	1	5	<1	<1
MAR 19...	8	<2	1030	<2	<2	6	162	<.10	<.1	1	2	2	1
MAY 21...	<2	<2	35	<2	<2	639	634	<.10	<.1	1	1	<1	<1
AUG 21...	11	<2	1790	<2	4	285	417	<.10	<.1	2	3	1	2

Date	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	STRON- TIUM, TOTAL RECOV- ERABLE (UG/L AS SR) (01082)	THAL- LIUM, DIS- SOLVED (UG/L AS TL) (01057)	THAL- LIUM, TOTAL SOLVED (UG/L AS TL) (01059)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	SEDI- MENT, DIS- SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- SUS- PENDED (MG/L) (80155)
DEC 05...	<1	<1	570	<2	<2	3	12	141	91.4
MAR 19...	<1	<1	720	<2	<2	15	5	41	46.4
MAY 21...	<1	<1	1200	<2	<2	4	<2	16	.03
AUG 21...	<1	<1	970	<2	<2	18	11	173	3.7

Remark codes used in this report:

- < -- Less than
- E -- Estimated value

Value qualifier codes used in this report:

- c -- See laboratory comment
- k -- Counts outside acceptable range
- l -- Sample lab preparation problem

GILA RIVER BASIN

09474000 GILA RIVER AT KELVIN, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Water-quality measurements in the following table were made as part of the ADEQ Fixed-Station Network Program. The following analyses are quality-assurance samples processed during the 2002 sampling period and are defined in the introductory text section titled "Water-Quality Control Data".

Date	Time	Sample type	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPE-CIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA NO2+NO3 TOTAL (MG/L AS N) (00610)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ALUMINUM, DIS-SOLVED (UG/L AS AL) (01106)
MAR 19...	1335	2	5.6	2	17.6	.03	<.03	<.1	<.20	<.01	<.020	<.02	<3
Date		BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHROMIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)		
MAR 19...	<.5	<1	<.5	<1	<2	<2	<2	<1	<1	3			

Remark codes used in this report:

< -- Less than

**GILA RIVER BASIN
DIVERSION FROM GILA RIVER**

179

09475500 FLORENCE-CASA GRANDE CANAL, NEAR FLORENCE, AZ

LOCATION.--Lat 33° 05' 15", long 111° 17' 10", in NE¹/₄NE¹/₄ sec. 14, T.4 S., R.10 E., Pinal County, Hydrologic Unit 15050100, on left bank at China Wash, 2.6 mi downstream from head at Ashurst-Hayden Dam and 7.5 mi northeast of Florence.

PERIOD OF RECORD.--Jan. 1928 to current year (monthly diversions only). Published as a supplement to records for Gila River at Ashurst-Hayden Dam, 1928--80.

GAGE.--Water-stage recorder and Parshall flume. Prior to Jan. 12, 1937, water-stage recorder 900 ft downstream from Ashurst-Hayden Dam.

REMARKS.--Records show monthly diversion from the Gila River at Ashurst-Hayden Dam for irrigation of land under the 100,000 acre San Carlos Project. Diversion records are those at the canal gaging station at the flume 2.6 mi downstream from dam; values are adjusted for sluicing through the dam or from the canal and pumping of water into the canal between the dam and the flume, but are not adjusted for natural losses. Adjusted values show water available at Ashurst-Hayden Dam, except for spill over the dam or water sluiced through the dam during times of flood runoff.

COOPERATION.--Pumping records furnished by Bureau of Indian Affairs.

MONTHLY DIVERSIONS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Month	Discharge, in cubic feet per second			Diversions in acre-feet	Water sluiced above flume, in acre-feet
	Maximum	Minimum	Mean		
October	282	0	194.6	11,970	344
November	0	0	0	0	772
December	358	0	215.8	13,270	0
CAL YR 2001	932	0	342.3	124,900	0
January	151	66	109.9	6,760	0
February	250	95	129.2	7,170	0
March	326	109	239.1	14,700	0
April	100	3.0	29.92	1,780	0
May	4.4	0	0.466	29	0
June	0	0	0	0	0
July	0	0	0	0	0
August	139	0	35.25	2,170	0
September	252	0	32.24	1,920	356
WTR YR 2002	358	0	82.6	30,132	1,472

09478500 QUEEN CREEK BELOW WHITLOW DAM NEAR SUPERIOR, AZ

LOCATION.--Lat 33° 17'57", long 111° 16'37", in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 36, T.1 S., R.10 E., Pinal County, Hydrologic Unit 15050100, 1 mi upstream from Queen Valley and 10 mi west of Superior. Gage is located on the outlet box structure below Whitlow Ranch Dam.

DRAINAGE AREA.--144 mi².

PERIOD OF RECORD.--Jan. 1896 to Dec. 1897, Jan. 1898 to Aug. 1899 (fragmentary), Feb. to Sept. 1915 (gage-heights only), Oct. 1915 to Sept. 1920, May 1948 to Jan. 1959, Apr. 2001 to current year. Published as "at Whitlow's Ranch" 1896--99, "near Superior" 1915--20 and as "at Whitlow Dam Site nr Superior" 1948--59.

GAGE.--Water-stage recorder. Elevation of gage is 2040 ft above sea level, from topographic map. From Jan. 25, 1896, to Aug. 11, 1899, and Feb. 14, 1915 to Sept. 30, 1920, staff gages were operated in the vicinity of the present gage at different datums. Stilling-well gages were operated from May 1, 1948, to Aug. 19, 1954, and Jan. 6, 1955, to Jan. 1959 at sites about 1,100 ft and 800 ft upstream and datums of 2048.96 and 2045.70 ft above mean sea level, respectively.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--1915--20, 1948--59: Maximum discharge, 42,900 ft³/s Aug. 19, 1954. No flow at times in each year. 2001--present: Maximum discharge, 620 ft³/s Aug. 14, 2001, estimated. Minimum daily discharge, 0.63 ft³/s June 26--27, Sept. 2--5, 2002.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3.4 ft³/s Oct. 7 at 2200. Minimum daily discharge, 0.63 ft³/s June 26--27, Sept. 2--5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	2.9	2.7	2.0	2.3	e2.0	1.8	1.8	1.3	1.1	e1.0	0.64
2	3.2	2.9	2.7	1.9	2.3	1.9	1.8	1.6	1.1	0.87	e0.98	0.63
3	3.2	2.9	2.6	1.9	2.3	1.9	1.8	1.4	1.1	0.87	e0.98	0.63
4	3.2	2.9	2.5	1.9	2.3	1.9	1.8	1.4	1.1	0.92	e0.98	0.63
5	3.2	3.0	2.5	1.9	2.2	1.8	1.8	1.4	1.1	0.99	e0.95	0.63
6	3.1	3.1	2.5	1.9	2.1	1.9	1.9	1.4	1.1	1.0	e0.95	0.64
7	3.1	3.1	2.5	1.9	2.1	1.9	1.9	1.5	1.1	0.88	e0.92	0.82
8	3.1	3.0	2.5	1.9	2.0	1.9	1.9	1.6	1.1	0.89	e0.92	0.96
9	3.1	2.8	2.4	1.9	1.8	1.9	1.9	1.7	1.1	1.00	e0.92	0.86
10	3.1	2.8	2.4	1.9	2.1	1.9	1.9	1.7	1.1	1.1	e0.90	0.86
11	3.1	3.0	2.4	1.9	2.1	1.9	1.9	1.6	1.1	1.1	e0.90	0.87
12	3.1	2.9	2.3	1.9	2.0	1.9	1.9	1.4	1.1	1.1	e0.90	0.87
13	3.1	2.9	2.3	1.9	2.1	1.9	2.0	1.2	0.99	1.1	e0.90	0.87
14	3.1	2.9	2.3	1.9	2.1	1.9	1.9	1.1	0.88	0.92	0.87	0.87
15	2.9	2.9	2.3	1.9	1.9	1.9	1.8	1.2	0.89	0.86	0.87	0.87
16	2.9	2.9	2.3	1.9	1.9	1.9	1.9	1.2	0.86	0.90	0.87	0.87
17	2.9	2.9	2.3	1.9	1.9	1.9	1.4	1.3	0.87	0.87	0.89	0.87
18	3.0	2.8	2.3	1.9	1.9	1.9	1.4	1.4	0.88	0.89	0.94	0.87
19	3.1	2.7	2.4	1.9	1.9	2.0	1.4	1.3	0.85	0.86	0.87	0.87
20	3.1	2.7	2.3	2.0	1.9	1.9	1.4	1.1	0.86	0.87	0.89	0.87
21	3.0	2.8	2.3	2.2	1.9	2.0	1.4	1.2	0.70	0.87	0.89	0.87
22	3.0	2.9	2.5	2.5	1.9	1.9	1.4	1.1	0.67	0.87	0.90	0.91
23	3.1	2.9	2.5	2.4	1.9	2.0	1.4	1.2	0.66	e0.87	0.93	0.87
24	3.1	2.8	2.4	2.5	1.9	1.9	1.4	1.3	0.66	e0.87	0.89	0.87
25	3.0	2.8	2.5	2.3	1.9	1.9	1.6	1.4	0.67	0.86	0.87	0.87
26	3.0	2.8	2.3	2.3	1.9	1.9	1.6	1.4	0.63	0.87	0.87	0.85
27	3.1	2.8	2.2	2.3	1.9	1.9	1.6	1.3	0.63	0.87	0.87	0.86
28	3.1	2.9	2.1	2.3	e2.0	1.9	1.6	1.2	0.64	0.86	0.94	0.81
29	3.1	2.9	2.1	2.3	---	1.9	1.9	1.2	0.79	0.90	1.1	0.82
30	3.0	2.8	2.1	2.4	---	1.9	1.8	1.2	1.2	0.88	1.0	0.85
31	2.9	---	2.0	2.4	---	1.9	---	1.3	---	1.0	0.75	---
TOTAL	95.2	86.4	73.5	64.1	56.5	59.2	51.2	42.1	27.73	28.81	28.41	24.58
MEAN	3.071	2.880	2.371	2.068	2.018	1.910	1.707	1.358	0.924	0.929	0.916	0.819
MAX	3.2	3.1	2.7	2.5	2.3	2.0	2.0	1.8	1.3	1.1	1.1	0.96
MIN	2.9	2.7	2.0	1.9	1.8	1.8	1.4	1.1	0.63	0.86	0.75	0.63
MED	3.1	2.9	2.4	1.9	2.0	1.9	1.8	1.3	0.89	0.88	0.90	0.87
AC-FT	189	171	146	127	112	117	102	84	55	57	56	49
CFSM	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

e Estimated

09479350 GILA RIVER NEAR MARICOPA, AZ

LOCATION--Lat 33° 10'07", long 112° 00'24", in NW^{1/4}NE^{1/4}SW^{1/4}, sec. 13, T.3 S., R.3 E., Pinal County, Hydrologic Unit 15050100, in Gila River Indian Reservation, on the downstream side of the highway bridge 8 mi north of Maricopa, AZ.

DRAINAGE AREA--19,915 mi².

PERIOD OF RECORD--Occasional medium range to high range flow measurements were made in 1993--1994 water year. Established as a continuous-record station May 1995 to current year.

GAGE--Water-stage recorder. Elevation of gage 1,113.87 ft above sea level, from topographic map.

REMARKS--Records good, except for estimated daily discharges, which are poor. Many diversions above station for irrigation. Most low flow is wastewater from irrigated lands from Chandler, AZ, treatment plant. Flow regulated by storage in San Carlos Reservoir. This station replaces Gila River near Laveen (09479501), which was discontinued in the 1995 water year. Flood Jan. 20, 1993, discharge 49,350 ft³/s, measured from bridge, no gage height recorded. Flood Jan. 22, 1993, discharge 46,300 ft³/s, measured from bridge, approximate gage height, 6.80 ft.

EXTREMES FOR CURRENT YEAR--No flow for entire year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2002, BY WATER YEAR (WY)

	1995	1996	1996	1996	1996	1996	1996	1996	1995	1995	1996	1995
MEAN	0.057	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.195
MAX	0.40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.065	1.56
(WY)	2001	1996	1996	1996	1996	1996	1996	1996	1995	1995	1997	1996
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1996	1996	1996	1996	1996	1996	1996	1996	1995	1995	1996	1995

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1995 - 2002	
ANNUAL TOTAL	0.00		0.00			
ANNUAL MEAN	0.000		0.000		0.024	
HIGHEST ANNUAL MEAN					0.13	
LOWEST ANNUAL MEAN					0.000	
HIGHEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	38	Sep 2 1996
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	May 19 1995
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	May 19 1995
ANNUAL RUNOFF (AC-FT)	0.00		0.00		17	
10 PERCENT EXCEEDS	0.00		0.00		0.00	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

GILA RIVER BASIN

09480000 SANTA CRUZ RIVER NEAR LOCHIEL, AZ

LOCATION--Lat 31° 21' 19", long 110° 35' 20", in SW¹/₄ sec. 11, T.24 S., R.17 E. (unsurveyed), Santa Cruz County, Hydrologic Unit 15050301, on southern border of Spanish land grant of San Rafael, near left bank on downstream side of pier of bridge on county road, 1.7 mi upstream from international boundary, and 2.5 mi northeast of Lochiel.

DRAINAGE AREA--82.2 mi².

PERIOD OF RECORD--Jan. 1949 to current year.

REVISED RECORDS--WSP 1733: 1951. WDR AZ-94-1: 1993.

GAGE--Water-stage recorder. Elevation of gage is 4,620 ft above sea level, from topographic map.

REMARKS--Records poor. Small diversions for irrigation of 200 acres above station, mostly by pumping from ground water.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 12,000 ft³/s Oct. 9, 1977 and Aug. 15, 1984, gage height, 10.21 ft and 10.2 ft, respectively, from rating curve extended above 1,600 ft³/s on basis of slope-area measurement at gage height 10.21 ft; no flow at times in most years.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	0330	*1.5	*2.75

Minimum daily discharge, 0.00 ft³/s June 24 and 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.47	0.19	e0.40	0.60	0.53	0.86	0.52	0.23	0.19	0.05	0.13	0.18
2	0.43	0.18	e0.40	0.60	0.61	1.0	0.46	0.20	0.19	0.05	0.14	0.18
3	0.38	0.20	e0.40	0.62	0.63	1.2	0.46	0.19	0.18	0.05	0.14	0.17
4	0.47	0.23	0.44	0.61	0.57	1.1	0.42	0.33	0.17	0.04	e0.17	0.17
5	0.45	0.22	0.43	0.51	0.58	0.79	0.35	0.40	0.16	e0.05	e0.16	0.15
6	0.43	0.25	0.44	0.54	0.53	0.64	0.41	0.69	0.15	e0.06	e0.16	0.13
7	0.36	0.26	0.46	0.59	0.47	0.62	0.34	e0.59	0.14	0.05	0.17	0.13
8	0.31	0.26	0.46	0.60	0.54	0.69	0.32	e0.36	0.13	0.05	0.15	0.14
9	0.34	0.25	0.47	0.64	0.56	0.60	0.34	e0.35	0.13	0.05	0.16	0.17
10	0.28	0.22	0.50	0.67	0.56	0.67	0.34	0.35	0.12	0.04	0.16	0.20
11	0.24	0.20	0.59	0.62	0.50	0.64	0.24	0.34	0.12	0.05	0.16	0.20
12	0.27	0.22	e0.60	0.60	0.57	0.60	0.34	0.34	0.11	0.06	0.16	0.18
13	0.36	0.28	e0.51	0.62	0.61	0.59	0.32	0.33	0.10	0.06	0.16	0.18
14	0.29	0.28	0.52	0.61	0.50	0.53	0.35	0.32	0.10	0.06	0.15	0.18
15	0.25	0.28	0.62	0.64	0.50	0.49	0.32	0.31	0.10	0.07	0.15	0.17
16	0.26	0.28	0.59	0.53	0.54	0.46	0.38	0.30	0.08	0.07	0.16	0.18
17	0.19	0.30	0.56	0.54	0.53	0.39	0.28	0.27	0.07	0.08	0.16	0.18
18	0.28	0.33	0.58	0.47	0.54	0.44	0.28	0.26	0.06	0.08	0.19	0.18
19	0.25	0.32	0.57	0.45	0.65	0.50	0.18	0.25	0.04	0.08	0.19	0.18
20	0.28	0.32	0.59	0.42	0.87	0.46	0.27	0.25	0.04	0.09	0.18	0.17
21	0.26	0.33	0.60	0.43	0.79	0.44	0.13	0.24	0.04	0.09	0.17	0.17
22	0.31	0.33	0.60	0.49	0.76	0.32	0.32	0.23	0.02	0.09	0.16	0.16
23	0.32	0.35	0.60	0.50	0.78	0.52	0.25	0.22	0.02	0.09	0.14	0.16
24	0.26	0.35	0.60	0.46	0.96	0.63	0.27	0.21	0.01	0.09	0.13	0.15
25	0.20	0.38	0.63	0.50	0.93	0.60	0.43	0.20	0.02	0.12	0.13	0.13
26	0.20	0.40	0.68	0.47	1.00	0.35	0.39	0.19	0.01	0.11	0.14	0.11
27	0.20	0.33	0.69	0.45	0.90	0.34	0.54	0.18	0.02	0.12	0.14	0.10
28	0.28	0.34	0.66	0.52	0.92	0.54	0.55	0.19	0.03	0.12	0.16	0.10
29	0.24	0.37	0.60	0.54	---	0.61	0.40	0.19	0.04	0.12	0.17	0.11
30	0.21	0.40	0.59	0.56	---	0.69	0.21	0.20	0.05	0.13	0.16	0.12
31	0.15	---	0.59	0.52	---	0.54	---	0.19	---	e0.13	0.17	---
TOTAL	9.22	8.65	16.97	16.92	18.43	18.85	10.41	8.90	2.62	2.40	4.87	4.73
MEAN	0.30	0.29	0.55	0.55	0.66	0.61	0.35	0.29	0.087	0.077	0.16	0.16
MAX	0.47	0.40	0.69	0.67	1.0	1.2	0.55	0.69	0.19	0.13	0.19	0.20
MIN	0.15	0.18	0.40	0.42	0.47	0.32	0.13	0.18	0.00	0.04	0.13	0.10
MED	0.28	0.28	0.59	0.54	0.57	0.60	0.34	0.25	0.09	0.07	0.16	0.17
AC-FT	18	17	34	34	37	37	21	18	5.2	4.8	9.7	9.4
CFSM	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2002, BY WATER YEAR (WY)

MEAN	4.74	1.29	1.86	4.15	1.79	1.81	0.89	0.44	0.33	7.80	14.8	4.71
MAX	77.0	16.2	17.8	94.7	18.0	34.2	8.68	2.77	2.83	69.4	187	44.3
(WY)	1978	2001	1979	1993	1985	1983	1993	1983	1973	1950	1984	1964
MIN	0.000	0.000	0.000	0.023	0.032	0.013	0.000	0.000	0.000	0.026	0.000	0.000
(WY)	1954	1954	1954	1963	1963	1963	1963	1954	1949	1962	1962	1953

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1949 - 2002

ANNUAL TOTAL	551.01	122.97	
ANNUAL MEAN	1.51	0.34	3.77
HIGHEST ANNUAL MEAN			29.0
LOWEST ANNUAL MEAN			0.31
HIGHEST DAILY MEAN	8.1 Jan 2	1.2 Mar 3	1770 Jan 18 1993
LOWEST DAILY MEAN	0.04 Sep 12	0.00 Jun 24	0.00 May 19 1949
ANNUAL SEVEN-DAY MINIMUM	0.16 Sep 6	0.02 Jun 22	0.00 May 19 1949
ANNUAL RUNOFF (AC-FT)	1090	244	2730
ANNUAL RUNOFF (CFSM)	0.018	0.004	0.046
10 PERCENT EXCEEDS	4.1	0.61	4.2
50 PERCENT EXCEEDS	0.92	0.28	0.50
90 PERCENT EXCEEDS	0.26	0.09	0.00

e Estimated

09480500 SANTA CRUZ RIVER NEAR NOGALES, AZ

LOCATION--Lat 31° 20' 40", long 110° 51' 03", in NW^{1/4} sec. 18, T.24 S., R.15 E. (unsurveyed), Santa Cruz County, Hydrologic Unit 15050301, in Spanish land grant of Maria Santisima del Carmen, on left bank 0.8 mi downstream from international boundary and 5.5 mi east of Nogales.

DRAINAGE AREA--533 mi², of which 348 mi² is in Mexico.

PERIOD OF RECORD--Mar. to Nov. 1907 and Apr. 1909 to Dec. 1912 (discharge measurements and fragmentary gage-height record), Jan. 1913 to June 1922 (Oct. 1915 to Sept. 1916 monthly discharge only), May 1930 to Dec. 1933, July 1935 to current year. Water-year estimates for 1913, 1915-16, 1920-22, 1930, 1934-35, published in WSP 1733.

REVISED RECORDS--WSP 959: 1935(M). WSP 1213: 1915-16, 1930-32(M), 1934(M), 1936-37(M). WSP 1283: Drainage area.

GAGE--Water-stage recorder. Datum of gage is 3,702.54 ft above sea level (levels by International Boundary and Water Commission). Prior to June 30, 1922, nonrecording gage or water-stage recorder at various sites 5 to 6 mi downstream at different datums.

REMARKS--Records fair, except for estimated daily discharges, which are poor. Diversions above station of about 4,300 acre-ft/yr for irrigation of about 2,150 acres in Mexico in 1977. Diversion 19 mi upstream for municipal supply of city of Nogales, Sonora, began in 1949; diversion in 1968 totaled 3,500 acre-ft/yr.

EXTREMES FOR PERIOD 1930-2000--Maximum discharge, 31,000 ft³/s Oct. 9, 1977, gage height, 15.5 ft, from rating curve extended above 1,660 ft³/s on basis of slope-area measurement of peak flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 2,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 10.....	2000	*834	*4.08

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.27	0.73	0.86	0.93	0.37	0.11	0.00	0.00	0.00	0.00	0.00	0.00
2	0.29	0.71	0.83	e0.82	0.39	0.13	0.00	0.00	0.00	0.00	0.00	0.00
3	0.35	0.68	0.88	0.75	0.44	0.13	0.00	0.00	0.00	0.00	0.00	0.00
4	0.52	0.67	0.98	0.79	0.50	0.09	0.00	0.00	0.00	0.00	6.9	0.00
5	0.81	0.69	0.88	0.78	0.37	0.10	0.00	0.00	0.00	0.00	27	0.00
6	27	0.68	0.88	0.78	0.43	0.03	0.00	0.00	0.00	0.00	60	0.00
7	1.4	0.68	0.80	0.75	0.56	0.00	0.00	0.00	0.00	0.00	1.5	0.00
8	0.95	0.70	0.71	0.71	0.52	0.00	0.00	0.00	0.00	0.00	1.1	0.00
9	0.82	0.73	0.72	0.70	0.55	0.00	0.00	0.00	0.00	0.00	0.41	0.00
10	0.74	0.72	0.74	0.72	0.46	0.00	0.00	0.00	0.00	0.00	0.01	51
11	0.73	0.72	0.84	0.68	0.46	0.00	0.00	0.00	0.00	0.00	0.00	4.3
12	0.73	0.74	0.75	0.68	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.91
13	0.70	0.73	0.75	0.69	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.61
14	0.71	0.74	0.78	0.69	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.57
15	0.72	0.73	0.86	0.70	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.41
16	0.63	0.71	0.86	0.72	0.22	0.00	0.00	0.00	0.00	0.00	6.9	0.34
17	0.59	0.72	0.84	0.74	0.13	0.00	0.00	0.00	0.00	0.00	0.12	0.24
18	0.61	0.77	0.84	0.77	0.19	0.00	0.00	0.00	0.00	0.00	83	0.07
19	0.73	0.82	0.82	0.81	0.38	0.00	0.00	0.00	0.00	0.00	15	0.01
20	0.76	0.87	0.86	0.91	0.36	0.00	0.00	0.00	0.00	0.00	2.3	0.00
21	0.75	0.81	0.89	0.96	0.33	0.00	0.00	0.00	0.00	0.00	1.7	0.00
22	0.73	0.87	0.91	0.90	0.26	0.00	0.00	0.00	0.00	0.00	1.6	0.00
23	0.72	0.87	0.88	1.1	0.28	0.00	0.00	0.00	0.00	0.00	1.3	0.00
24	0.77	0.83	0.93	1.0	0.28	0.00	0.00	0.00	0.00	0.00	1.6	0.00
25	0.82	0.86	0.95	0.74	0.25	0.00	0.00	0.00	0.00	0.00	0.86	0.00
26	0.74	0.92	0.97	0.42	0.26	0.00	0.00	0.00	0.00	13	0.00	0.00
27	0.67	1.00	0.94	0.41	0.29	0.00	0.00	0.00	0.00	1.2	0.00	0.00
28	0.73	0.96	0.93	0.39	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.76	0.92	0.91	0.38	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.73	0.92	0.92	0.39	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.73	---	0.93	0.38	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	48.21	23.50	26.64	22.19	10.05	0.59	0.00	0.00	0.00	14.20	211.29	58.46
MEAN	1.555	0.783	0.859	0.716	0.359	0.019	0.000	0.000	0.000	0.458	6.816	1.949
MAX	27	1.0	0.98	1.1	0.56	0.13	0.00	0.00	0.00	13	83	51
MIN	0.27	0.67	0.71	0.38	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	96	47	53	44	20	1.2	0.00	0.00	0.00	28	419	116
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
IN.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2002, BY WATER YEAR (WY)

MEAN	27.13	10.35	33.82	40.05	32.66	23.56	7.952	1.802	1.306	39.89	84.39	25.34
MAX	904	164	542	492	370	318	58.1	16.8	24.4	254	745	158
(WY)	1978	2001	1979	1979	1985	1983	1992	1983	1984	1950	1955	1983
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.15	0.000
(WY)	1914	1919	1919	1974	1974	1914	1914	1914	1914	1918	1991	1918

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1914 - 2002
ANNUAL TOTAL	3180.72	415.13	
ANNUAL MEAN	8.714	1.137	27.07
HIGHEST ANNUAL MEAN			123
LOWEST ANNUAL MEAN			1.84
HIGHEST DAILY MEAN	221	83	13200
LOWEST DAILY MEAN	0.00	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.17	0.00	0.00
ANNUAL RUNOFF (AC-FT)	6310	823	19610
ANNUAL RUNOFF (CFSM)	0.016	0.002	0.051
ANNUAL RUNOFF (INCHES)	0.22	0.03	0.69
10 PERCENT EXCEEDS	24	0.92	42
50 PERCENT EXCEEDS	1.1	0.07	2.5
90 PERCENT EXCEEDS	0.46	0.00	0.00

e Estimated

GILA RIVER BASIN

09482000 SANTA CRUZ RIVER AT CONTINENTAL, AZ

LOCATION.--Lat 31° 52' 17", long 110° 58' 46", in SE_{1/4}SE_{1/4} sec. 11, T.18 S., R.13 E. (unsurveyed), Pima County, Hydrologic Unit 15050301, in Spanish land grant of San Ignacio de la Canoa, on right bank 0.8 mi northeast of Green Valley Post Office, and 1.5 mi north of Continental. Prior to Feb. 13, 1981, at site 1.5 mi upstream.

DRAINAGE AREA.--1,682 mi², of which 395 mi² is in Mexico.

PERIOD OF RECORD.--May 1940 to Dec. 1946, Oct. 1951 to Sept. 1984, Oct. 1991 to current year (monthly discharge only for 1985-86), (crest-stage partial record station for 1987-1990). Low-flow records not equivalent prior to Feb. 13, 1981, owing to undetermined amount of underflow between sites.

REVISED RECORDS.--WSP 1283: Drainage area. WDR AZ-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,806.61 ft above sea level. Prior to Feb. 13, 1981, at site 1.5 mi upstream. July 21, 1940 to Sept. 8, 1965 at datum 17.28 ft higher; Sept. 8, 1965 to present at datum 13.21 ft higher. Old site used as supplementary gage until Oct. 29, 1985.

REMARKS.--Records fair, except for estimated daily discharges which are poor. Irrigation above station of about 12,500 acres including about 2,300 acres in Mexico, mostly by pumping ground water.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,000 ft³/s Oct. 2, 1983, gage height, 16.34 ft from rating curve extended above 530 ft³/s on basis of slope-area measurement at gage height 7.75 ft and slope-area measurement of peak flow, maximum gage height 16.70 ft Oct. 9, 1977, site and datum then in use; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 6	1630	*600	*5.06

Minimum daily discharge, no flow for most of year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.15	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.08	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.7	e51
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.6	12
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.06	e2.5
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e4.9
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e11
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e33
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.10	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.28	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.07	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.05	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.03	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.07	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.21	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	e8.4	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	e10	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.25	66.20	114.40
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.427	2.135	3.813
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13	26	51
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26	131	227

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2002, BY WATER YEAR (WY)

MEAN	52.81	5.523	35.14	45.78	12.19	10.36	0.727	0.028	0.411	29.28	78.70	18.53
MAX	1525	133	658	1386	207	181	31.5	1.32	6.18	227	753	285
(WY)	1984	1979	1968	1993	1966	1983	1992	1992	1978	1954	1955	1964
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1943	1941	1942	1942	1942	1941	1941	1941	1941	1993	1956	1953

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1941 - 2002
ANNUAL TOTAL	75.01	193.85	
ANNUAL MEAN	0.206	0.531	24.41
HIGHEST ANNUAL MEAN			206
LOWEST ANNUAL MEAN			0.26
HIGHEST DAILY MEAN	21	51	17800
LOWEST DAILY MEAN	0.00	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	0.00	0.00
ANNUAL RUNOFF (AC-FT)	149	385	17680
10 PERCENT EXCEEDS	0.00	0.00	1.6
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

09482500 SANTA CRUZ RIVER AT TUCSON, AZ

LOCATION--Lat 32° 13' 19", long 110° 58' 52", in SE1/4SE1/4 sec. 11, T.14 S., R.13 E., Pima County, Hydrologic Unit 15050301, on right bank, 300 ft downstream from Congress Street Bridge, in Tucson.

DRAINAGE AREA--2,222 mi², of which 395 mi² is in Mexico, adjusted for 15.2 mi² of Tucson Arroyo drainage area contributing to this station effective July 1956.

PERIOD OF RECORD--Oct. 1905 to Sept. 1981 (monthly discharge only, Jan. 1907 to Sept. 1912, Jan. to Sept. 1914), June 1986 to Sept. 1995 (discharge above 500 ft³/s only), Oct. 1995 to current year.

REVISED RECORDS--WSP 859: 1915(M). WSP 1283: Drainage area. WSP 1313: 1939(M). WDR AZ--88--1: 1986--87(M).

GAGE--Water-stage recorder and crest-stage gage. Datum of gage is 2,320.68 ft above sea level. Prior to Nov. 27, 1929, nonrecording gages or reference points for measuring to water surface at various places on Congress Street bridge at various datums. Nov. 27, 1929 to Sept. 30, 1981, water-stage recorder at Congress Street bridge: at datum 6.22 ft higher Nov. 27, 1929 to June 18, 1958; at datum 2.22 ft higher June 18, 1958 to May 21, 1963; at datum 3.48 ft lower May 21, 1963 to Oct. 27, 1970; at datum 2.86 ft lower Oct. 1, 1971, to Sept. 30, 1981. No gage Oct. 27, 1970 to Oct. 1, 1971, and Oct. 10, 1977, to Feb. 14, 1978.

REMARKS--Records fair, except for estimated daily discharges which are poor. Irrigation above station of about 26,000 acres, including about 2,300 acres in Mexico, mostly by pumping from ground water. Ground water is also pumped above the station for municipal supply and mining. From Oct. 1969 to Sept. 1981, all flow past station was published, including waste water when known.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 37,400 ft³/s Jan. 19, 1993, gage height, 11.67 ft; no flow for most of each year.

EXTREMES OUTSIDE PERIOD OF RECORD--Maximum discharge since at least 1892, 52,700 ft³/s, from slope-area measurement of peak flow, Oct. 2, 1983; gage height, 22.2 ft, from floodmark, at site and datum used in 1981.

Maximum discharge during the 1985 water year was 10,000 ft³/s Dec. 28, 1984; gage height, 12.5 ft, at site and datum used in 1981.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 1,700 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 5.....	1815	1,930	4.11
Sept. 6.....	2130	*5,640	*5.84
Sept. 10.....	1645	2,840	4.65

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.54	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e21	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e8.6	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e85	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22	e567
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e1.9	99
8	e0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	47
9	e0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e1.4	18
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e7.9	374
11	0.00	0.00	e5.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	211
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e1.3
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e13	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e1.1	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.99	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e1.2	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e1.9	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e30	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e7.7	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e9.9	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	117	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e5.7	e2.1	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	15	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	12	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	e0.00	---
TOTAL	0.80	0.00	5.90	0.00	0.00	0.00	0.00	0.00	0.00	187.39	178.54	1317.30
MEAN	0.026	0.000	0.190	0.000	0.000	0.000	0.000	0.000	0.000	6.045	5.759	43.91
MAX	0.50	0.00	5.9	0.00	0.00	0.00	0.00	0.00	0.00	117	85	567
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MED	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	1.6	0.00	12	0.00	0.00	0.00	0.00	0.00	0.00	372	354	2610
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2002, BY WATER YEAR (WY)

	MEAN	88.75	21.31	0.038	0.092	0.436	0.289	1.246	0.000	6.280	34.36	22.45	5.609
MAX	355	85.1	0.069	0.28	0.79	0.45	3.63	0.000	18.8	84.2	43.6	12.5	
(WY)	2001	2001	1999	2001	2000	2000	1999	1999	2000	1999	1999	1999	1999
MIN	0.000	0.000	0.000	0.000	0.074	0.16	0.000	0.000	0.000	1.10	1.58	0.002	
(WY)	1999	2000	2000	1999	2001	1999	2000	1999	1999	2001	2001	2001	2001

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1997 - 2002
ANNUAL TOTAL	656.74	1689.93	
ANNUAL MEAN	1.799	4.630	18.55
HIGHEST ANNUAL MEAN			37.4
LOWEST ANNUAL MEAN			5.99
HIGHEST DAILY MEAN	110	567	7360
LOWEST DAILY MEAN	0.00	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	0.00	0.00
ANNUAL RUNOFF (AC-FT)	1300	3350	13440
ANNUAL RUNOFF (CFSM)	0.001	0.002	0.008
10 PERCENT EXCEEDS	0.44	0.00	1.4
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

09484000 SABINO CREEK NEAR TUCSON, AZ

LOCATION--Lat 32° 19'00", long 110° 48'35", in SE1/4NE1/4 sec. 9, T.13 S., R.15 E., Pima County, Hydrologic Unit 15050302, on left bank, 30 ft upstream from Lower Sabino Dam, 0.5 mi north of Coronado National Forest boundary and 12 mi northeast of Tucson City Hall.

DRAINAGE AREA--35.5 mi².

PERIOD OF RECORD--July 1904 to June 1912 (monthly discharge only); June 1932 to Sept. 1974 (continuous-record station); Oct. 1974 to Sept. 1989 (crest-stage partial-record station); Oct. 1989 to current year.

REVISED RECORDS--WSP 1213: 1938, 1946. WSP 1283: Drainage area.

GAGE--Water-stage recorder and concrete control. Elevation of gage is 2,720 ft above sea level, from topographic map. July 1904 to June 1912, water-stage recorder and sharp-crested weir at site 0.7 mi upstream at different datum. June 1932 to Sept. 1974 (water-stage recorder) and Oct. 1974 to Aug. 1981 (crest-stage gage) at site 1,000 ft upstream at different datum.

REMARKS--Records fair, except for estimated daily discharges, which are poor. No diversion above station except for domestic supply.

AVERAGE DISCHARGE--60 years (water years 1905-11, 1933-74, 1990-2000), 14.6 ft³/s, 10,580 acre-ft/yr; median of yearly mean discharges 8.9 ft³/s, 6,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 15,400 ft³/s July 15, 1999, gage height 8.25 ft from highwater marks, from rating curve extended above 3,000 ft³/s on basis of slope-area measurement at gage height 9.65 ft; no flow at times in most years.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 200 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 5.....	2345	*433	*2.03
Aug. 9.....	2345	254	1.73
Aug. 28.....	2215	248	1.72

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.18	0.23	e0.06	0.00	0.00	0.00	1.2	1.7
2	0.00	0.00	0.00	0.00	0.18	0.17	e0.05	0.00	0.00	0.00	1.1	1.4
3	0.00	0.00	0.00	0.00	0.26	0.17	e0.03	0.00	0.00	0.00	1.1	1.2
4	0.00	0.00	0.00	0.09	0.33	0.18	e0.01	0.00	0.00	0.00	29	1.2
5	0.00	0.00	0.00	0.49	0.42	0.16	0.00	0.00	0.00	0.00	74	1.2
6	0.00	0.00	0.00	0.55	0.40	0.14	0.00	0.00	0.00	0.00	132	1.4
7	0.00	0.00	0.00	0.59	0.40	0.16	0.00	0.00	0.00	0.00	11	2.3
8	0.00	0.00	0.00	0.55	0.36	0.28	0.00	0.00	0.00	0.00	4.1	1.9
9	0.00	0.00	0.00	0.50	0.24	0.11	0.00	0.00	0.00	0.00	12	1.8
10	0.00	0.00	0.00	0.58	0.22	0.10	0.00	0.00	0.00	0.00	68	30
11	0.00	0.00	0.00	0.72	0.29	0.10	0.00	0.00	0.00	0.00	5.2	19
12	0.00	0.00	0.00	0.52	0.31	0.08	0.00	0.00	0.00	0.00	3.3	5.0
13	0.00	0.00	0.00	0.31	0.31	0.10	0.00	0.00	0.00	0.00	2.5	2.8
14	0.00	0.00	0.00	0.31	0.31	0.16	0.00	0.00	0.00	0.00	1.8	2.2
15	0.00	0.00	0.00	0.31	0.31	0.11	0.00	0.00	0.00	0.00	1.5	1.7
16	0.00	0.00	0.00	0.31	0.35	0.08	0.00	0.00	0.00	0.00	1.3	1.6
17	0.00	0.00	0.00	0.35	0.24	0.08	0.00	0.00	0.00	0.00	2.0	1.6
18	0.00	0.00	0.00	0.42	0.28	0.09	0.00	0.00	0.00	0.00	1.7	1.5
19	0.00	0.00	0.00	0.44	0.32	0.09	0.00	0.00	0.00	0.00	1.5	1.2
20	0.00	0.00	0.00	0.38	0.31	e0.08	0.00	0.00	0.00	0.00	1.3	1.1
21	0.00	0.00	0.00	0.37	0.30	e0.08	0.00	0.00	0.00	0.66	1.2	1.1
22	0.00	0.00	0.00	0.31	0.27	e0.08	0.00	0.00	0.00	6.7	1.1	1.0
23	0.00	0.00	0.00	0.40	0.27	e0.08	0.00	0.00	0.00	2.2	1.1	0.87
24	0.00	0.00	0.00	0.38	0.23	e0.08	0.00	0.00	0.00	1.7	1.0	0.76
25	0.00	0.00	0.00	0.32	0.18	e0.08	0.00	0.00	0.00	3.5	0.91	0.73
26	0.00	0.00	0.00	0.34	0.18	e0.08	0.00	0.00	0.00	8.8	0.88	0.69
27	0.00	0.00	0.00	0.26	0.18	e0.08	0.00	0.00	0.00	31	0.83	0.61
28	0.00	0.00	0.00	0.31	0.19	e0.08	0.00	0.00	0.00	5.1	23	0.57
29	0.00	0.00	0.00	0.31	---	e0.07	0.00	0.00	0.00	2.6	54	0.49
30	0.00	0.00	0.00	0.39	---	e0.06	0.00	0.00	0.00	1.8	4.6	0.46
31	0.00	---	0.00	0.39	---	e0.06	---	0.00	---	1.5	2.2	---
TOTAL	0.00	0.00	0.00	11.20	7.82	3.50	0.15	0.00	0.00	65.56	446.42	89.08
MEAN	0.000	0.000	0.000	0.36	0.28	0.11	0.005	0.000	0.000	2.11	14.4	2.97
MAX	0.00	0.00	0.00	0.72	0.42	0.28	0.06	0.00	0.00	31	132	30
MIN	0.00	0.00	0.00	0.00	0.18	0.06	0.00	0.00	0.00	0.00	0.83	0.46
MED	0.00	0.00	0.00	0.37	0.28	0.09	0.00	0.00	0.00	0.00	1.8	1.3
AC-FT	0.00	0.00	0.00	22	16	6.9	0.3	0.00	0.00	130	885	177
CFSM	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.06	0.41	0.08
IN.	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.07	0.47	0.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2002, BY WATER YEAR (WY)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
MEAN	6.72	10.6	20.4	49.3	49.2	57.1	24.9	2.77	0.53	13.1	19.9	9.06			
MAX	72.8	39.7	114	441	211	311	97.1	11.3	6.37	85.1	84.4	60.8			
(WY)	2001	1995	1993	1993	1995	1991	1991	1991	1992	1999	1995	1995			
MIN	0.000	0.000	0.000	0.000	0.000	0.11	0.005	0.000	0.000	0.000	1.13	0.009			
(WY)	1992	1990	1990	1989	2000	2002	2002	1989	1989	1988	1991	1989			

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1988 - 2002	
ANNUAL TOTAL	3691.25		623.73			
ANNUAL MEAN	10.1		1.71		22.7	
HIGHEST ANNUAL MEAN					64.6	
LOWEST ANNUAL MEAN					0.86	
HIGHEST DAILY MEAN	124	Apr 7	132	Aug 6	3180	Jan 8 1993
LOWEST DAILY MEAN	0.00	Jun 2	0.00	Oct 1	0.00	Oct 2 1987
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 2	0.00	Oct 1	0.00	Jun 3 1988
ANNUAL RUNOFF (AC-FT)	7320		1240		16420	
ANNUAL RUNOFF (CFSM)	0.28		0.048		0.64	
ANNUAL RUNOFF (INCHES)	3.87		0.65		8.68	
10 PERCENT EXCEEDS	34		1.6		50	
50 PERCENT EXCEEDS	0.39		0.00		0.81	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated

09484500 TANQUE VERDE CREEK AT TUCSON, AZ

LOCATION--Lat 32° 15'55", long 110° 50'26", in NE1/4NE1/4NE1/4 sec. 31, T.13 S., R.15 E., Pima County, Hydrologic Unit 15050302, at Sabino Canyon Road, 0.8 mi downstream from Sabino Creek.

DRAINAGE AREA--219 mi².

PERIOD OF RECORD--June 1940 to Oct. 1945; water years 1966--81, 1988--90 (annual maximums only); Oct. 1990 to current year. Prior to 1945, published as "Rillito Creek near Wrightstown."

GAGE--Water-stage recorder. Elevation of gage is 2,470 ft above sea level, from topographic map. Prior to Oct. 1945, at same location at different datum. Oct. 1965 to Sept. 1981, nonrecording gage at same site at different datum. Oct. 1987 to Sept. 1990, nonrecording gage at same site and datum.

REMARKS--Records fair.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 24,500 ft³/s, Jan. 8, 1993, gage height, 11.85 ft; no flow most of each year.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 5.....	1745	*128	*6.54

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.1	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.4	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.89	0.00
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.190	0.000
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.4	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12	0.00
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IN.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2002, BY WATER YEAR (WY)

	MEAN	8.100	7.994	34.23	103.0	60.35	60.79	20.26	0.887	0.000	8.689	1.995	0.866
MAX	144	92.9	248	1295	329	277	125	3.90	0.000	119	13.3	9.17	
(WY)	2001	2001	1941	1993	1998	1991	1998	1941	1941	1999	1993	1998	
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1941	1943	1943	1943	1943	1996	1943	1944	1941	1942	1991	1943	

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1941 - 2002
ANNUAL TOTAL	2114.40	5.89	
ANNUAL MEAN	5.793	0.016	28.23
HIGHEST ANNUAL MEAN			147
LOWEST ANNUAL MEAN			0.013
HIGHEST DAILY MEAN	156	3.4	9840
LOWEST DAILY MEAN	0.00	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	0.00	0.00
ANNUAL RUNOFF (AC-FT)	4190	12	20450
ANNUAL RUNOFF (CFSM)	0.026	0.000	0.13
ANNUAL RUNOFF (INCHES)	0.36	0.00	1.75
10 PERCENT EXCEEDS	15	0.00	24
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

GILA RIVER BASIN

09484550 CIENGA CREEK NEAR SONOITA, AZ

LOCATION--Lat 31° 51'56", long 110° 34'12", in SW_{1/4}NW_{1/4}SW_{1/4} sec. 13. Pima County, Hydrologic Unit 15050302, north of Sonoita.

DRAINAGE AREA--Undetermined.

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

REVISED RECORDS--WSP 1283: Drainage area. WDR AZ-81-1: Drainage area.

GAGE--Water-stage recorder and concrete weir. Elevation of gage is 4,180 ft. above sea level, from topographic map.

REMARKS--Records fair. No known diversion above station.

EXTREMES FOR CURRENT YEAR--Peak discharge above 300 ft³/s and (or) maximum (*):.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 5	2115	203	6.54

Minimum daily discharge, 0.18 ft³/s, Sept. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.74	0.88	1.0	1.2	1.5	1.5	1.5	0.88	0.44	0.24	0.43	0.39
2	0.81	0.88	1.0	1.2	1.5	1.5	1.5	0.89	0.43	0.24	0.44	0.37
3	0.88	0.88	1.0	1.2	1.5	1.5	1.4	0.88	0.43	0.24	0.56	0.36
4	0.85	0.85	1.0	1.3	1.6	1.5	1.4	0.85	0.44	0.26	0.65	0.37
5	0.80	0.91	1.0	1.2	1.8	1.6	1.4	0.82	0.43	0.27	15	0.36
6	0.83	0.94	1.1	1.2	1.6	1.6	1.4	0.81	0.41	0.27	9.1	0.38
7	0.83	0.92	1.1	1.3	1.5	1.5	1.5	0.79	0.41	0.26	0.99	0.43
8	2.2	0.92	1.0	1.3	1.5	1.5	1.5	0.78	0.41	0.28	0.71	0.51
9	0.96	0.93	1.1	1.3	1.5	1.5	1.5	0.80	0.39	0.31	0.69	0.48
10	0.89	0.93	1.1	1.3	1.4	1.5	1.5	0.77	0.37	0.32	0.64	0.53
11	0.86	0.94	1.2	1.3	1.5	1.5	1.4	0.75	0.37	0.32	0.58	0.50
12	0.83	0.93	1.1	1.3	1.5	1.5	1.4	0.75	0.35	0.35	0.55	0.46
13	0.82	0.99	1.1	1.3	1.5	1.5	1.4	0.72	0.34	0.33	0.50	0.42
14	0.81	0.98	1.1	1.4	1.5	1.5	1.5	0.68	0.32	0.37	0.46	0.40
15	0.81	0.98	1.2	1.4	1.5	1.5	1.5	0.67	0.31	0.40	0.43	0.38
16	0.83	0.97	1.1	1.4	1.5	1.5	1.3	0.67	0.31	1.2	1.2	0.37
17	0.83	0.97	1.1	1.3	1.5	1.5	1.2	0.66	0.30	0.57	0.55	0.38
18	0.83	0.97	1.1	1.3	1.5	1.5	1.2	0.63	0.28	0.56	0.49	0.39
19	0.83	0.98	1.1	1.3	1.5	1.5	1.1	0.61	0.29	0.53	0.56	0.38
20	0.82	0.98	1.1	1.3	1.5	1.5	1.1	0.61	0.29	0.51	0.58	0.38
21	0.82	0.98	1.1	1.3	1.5	1.5	1.1	0.64	0.28	0.48	0.52	0.37
22	0.84	0.98	1.1	1.3	1.5	1.5	1.1	0.67	0.28	0.57	0.48	0.35
23	0.88	0.99	1.1	1.4	1.5	1.5	1.1	0.65	0.26	0.54	0.45	0.34
24	0.88	0.99	1.1	1.4	1.5	1.5	1.0	0.63	0.25	0.52	0.40	0.33
25	0.88	0.99	1.1	1.3	1.5	1.5	1.0	0.59	0.26	0.52	0.38	0.23
26	0.86	0.99	1.1	1.4	1.5	1.5	0.99	0.61	0.25	5.3	0.36	0.18
27	0.87	0.99	1.1	1.4	1.5	1.5	1.00	0.60	0.25	0.82	0.35	0.21
28	0.88	1.0	1.1	1.4	1.5	1.5	0.94	0.54	0.25	0.51	0.38	0.26
29	0.88	1.0	1.2	1.5	---	1.5	0.92	0.52	0.26	0.47	0.41	0.28
30	0.88	1.0	1.2	1.5	---	1.5	0.88	0.48	0.25	0.50	0.38	0.29
31	0.87	---	1.2	1.5	---	1.5	---	0.45	---	0.50	0.37	---
TOTAL	27.60	28.64	34.0	41.2	42.4	46.7	37.73	21.40	9.91	18.56	39.59	11.08
MEAN	0.890	0.955	1.097	1.329	1.514	1.506	1.258	0.690	0.330	0.599	1.277	0.369
MAX	2.2	1.0	1.2	1.5	1.8	1.6	1.5	0.89	0.44	5.3	15	0.53
MIN	0.74	0.85	1.0	1.2	1.4	1.5	0.88	0.45	0.25	0.24	0.35	0.18
MED	0.84	0.97	1.1	1.3	1.5	1.5	1.4	0.67	0.31	0.47	0.50	0.37
AC-FT	55	57	67	82	84	93	75	42	20	37	79	22

09484600 PANTANO WASH NEAR VAIL, AZ

LOCATION--Lat 32° 02' 09", long 110° 40' 37", in SW1/4SE1/4 sec. 14, T.16 S., R.16 E., Pima County, Hydrologic Unit 15050302, on right bank 60 ft upstream from dam, 2.2 mi southeast of Vail, and 20 mi southeast of Tucson City Hall.

DRAINAGE AREA--457 mi².

PERIOD OF RECORD--Jan. 1959 to Sept. 1974, water years 1975--89 (annual maximums only), Oct. 1989 to current year.

GAGE--Water-stage recorder and concrete weir. Elevation of gage is 3,205 ft above sea level, from topographic map. Jan. 1959 to Sept. 1974 (water-stage recorder) and Oct. 1974 to Sept. 1989 (crest-stage gage) at same site and datum.

REMARKS--Records fair, except for estimated daily discharges which are poor. No known diversion above station. Records published herein represent flow by gage. Infiltration flow is not included. Base runoff past gage station consists of downvalley underflow that is brought to the surface by the concrete dam 60 ft downstream which extends to bedrock.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 12,000 ft³/s Oct. 1 or 2, 1983, gage height, 15.25 ft, from inside high-water mark, from rating curve extended above 2,000 ft³/s on basis of slope-area measurements at gage heights 10.9 and 24 ft; no flow June 26 to July 13, Aug. 7, 1971 (result of work on infiltration gallery), June 27 to July 13, 1973 (result of ponding during construction work on dam), May 28 to June 12, and July 12, 13, 17, and 18, 1974.

EXTREMES OUTSIDE PERIOD OF RECORD--Maximum discharge since at least 1930, about 38,000 ft³/s, Aug. 11, 1958, gage height, about 24 ft, from floodmark, from slope-area measurement.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 2,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 10	1500	*1,620	*7.77

Minimum daily discharge, 0.0 ft³/s, Aug. 25, 26, 27, and Sept. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.45	0.57	0.47	0.63	1.3	1.7	2.0	1.4	0.14	0.12	0.21	0.53
2	0.43	0.57	0.50	0.70	1.3	1.8	1.7	1.5	0.12	0.15	0.24	0.52
3	0.44	0.57	0.42	0.72	1.4	1.9	1.7	1.4	0.10	0.16	0.33	0.51
4	0.42	0.64	0.46	0.72	1.1	1.9	1.8	1.5	0.09	0.18	11	0.50
5	0.39	0.69	0.43	0.72	0.75	1.7	2.0	1.4	0.10	0.20	112	0.51
6	0.38	0.69	0.36	0.71	0.77	1.7	2.3	1.2	0.09	0.19	64	0.52
7	0.34	0.68	0.36	0.72	0.79	1.2	2.4	1.1	0.07	0.18	4.1	0.54
8	11	0.67	0.38	0.74	0.83	0.82	2.5	1.2	0.07	0.18	6.7	89
9	4.5	0.66	0.41	0.72	0.91	0.96	2.2	1.1	0.07	0.19	51	0.00
10	1.0	0.66	0.42	0.74	1.1	0.98	2.2	1.1	0.07	0.22	e10	93
11	0.95	0.74	0.55	0.74	1.0	0.97	2.1	0.98	0.07	0.30	e0.26	e1.4
12	0.86	0.73	3.4	0.72	1.2	0.83	1.9	0.91	0.06	0.40	e0.30	e0.84
13	0.79	0.75	7.8	0.73	1.4	0.95	1.6	0.86	0.07	0.45	e0.32	e0.80
14	0.77	0.71	0.50	0.74	1.4	0.95	1.3	0.69	0.06	0.56	e0.35	e0.77
15	0.75	0.61	0.53	0.77	1.5	1.1	1.2	0.71	0.06	0.65	e0.39	e0.77
16	0.70	0.51	0.50	0.77	1.8	1.2	1.3	0.89	0.05	0.70	e0.40	e0.75
17	0.71	0.50	0.60	0.78	1.8	1.4	1.2	0.75	0.05	0.70	e0.47	e0.72
18	0.70	0.49	0.54	0.80	1.5	1.6	1.2	0.65	0.04	0.72	e0.49	e0.72
19	0.70	0.42	0.53	0.82	1.1	1.4	1.1	0.58	0.09	0.77	e0.56	e0.70
20	0.69	0.50	0.51	0.92	1.3	1.3	1.1	0.61	0.16	0.75	0.47	e0.65
21	0.61	0.54	0.51	0.91	1.3	1.4	1.1	0.63	0.16	0.81	0.31	e0.62
22	0.63	0.44	0.52	0.82	1.5	1.4	0.96	0.52	0.15	1.0	0.19	e0.62
23	0.64	0.44	0.54	0.91	1.6	1.5	1.0	0.43	0.16	1.2	0.12	e0.57
24	0.65	0.45	0.54	0.82	1.6	1.6	1.1	0.39	0.15	1.5	0.06	e0.54
25	0.64	0.39	0.56	0.79	1.6	1.6	1.2	0.36	0.14	1.7	0.00	e0.54
26	0.61	0.39	0.58	0.78	1.6	1.7	1.3	0.35	0.14	11	0.00	e0.52
27	0.59	0.40	0.62	0.80	1.7	1.8	1.5	0.35	0.14	9.0	0.00	e0.49
28	0.61	0.35	0.62	0.78	1.7	2.1	1.4	0.29	0.13	0.17	17	e0.47
29	0.59	0.43	0.67	0.77	---	2.1	1.5	0.24	0.13	0.18	0.90	e0.47
30	0.59	0.45	0.63	0.99	---	2.1	1.4	0.21	0.13	0.24	0.63	e0.55
31	0.57	---	0.62	1.0	---	2.1	---	0.17	---	0.22	0.54	---
TOTAL	33.70	16.64	26.08	24.28	36.85	45.76	47.26	24.47	3.06	34.79	283.34	199.14
MEAN	1.087	0.555	0.841	0.783	1.316	1.476	1.575	0.789	0.102	1.122	9.140	6.638
MAX	11	0.75	7.8	1.0	1.8	2.1	2.5	1.5	0.16	11	112	93
MIN	0.34	0.35	0.36	0.63	0.75	0.82	0.96	0.17	0.04	0.12	0.00	0.00
AC-FT	67	33	52	48	73	91	94	49	6.1	69	562	395
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01
IN.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)

MEAN	3.234	2.480	5.457	6.854	6.557	3.636	2.299	1.176	1.848	13.43	19.29	10.03
MAX	45.6	38.7	50.3	111	75.1	21.2	12.0	1.95	20.8	49.6	92.6	105
(WY)	2001	2001	1966	1993	1998	1998	1998	1965	2000	1967	1971	1964
MIN	0.10	0.10	0.10	0.10	0.10	0.12	0.32	0.19	0.070	0.22	0.52	0.16
(WY)	1974	1974	1974	1974	1974	1974	1974	1974	1974	1997	1973	1973

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1960 - 2002
ANNUAL TOTAL	1309.44	775.37	
ANNUAL MEAN	3.588	2.124	6.449
HIGHEST ANNUAL MEAN			15.7
LOWEST ANNUAL MEAN			1.44
HIGHEST DAILY MEAN	348	112	2230
LOWEST DAILY MEAN	0.34	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.40	0.06	0.00
ANNUAL RUNOFF (AC-FT)	2600	1540	4670
ANNUAL RUNOFF (CFSM)	0.008	0.005	0.014
ANNUAL RUNOFF (INCHES)	0.11	0.06	0.19
10 PERCENT EXCEEDS	3.7	1.7	4.5
50 PERCENT EXCEEDS	1.3	0.70	1.2
90 PERCENT EXCEEDS	0.53	0.16	0.40

e Estimated

GILA RIVER BASIN

09485000 RINCON CREEK NEAR TUCSON, AZ

LOCATION--Lat 32° 07'46.5", long 110° 37'31.4", in NW¹/₄NE¹/₄ sec. 17, T.15 S., R.17 E., Pima County, Hydrologic Unit 15050302, on left bank 0.2 mi north of Sentinel Butte, 9 mi upstream from mouth, and 22 mi southeast of Tucson City Hall.

DRAINAGE AREA--44.8 mi².

PERIOD OF RECORD--Oct. 1952 to Sept. 1974, Oct. 1974 to Sept. 1989 (crest-stage partial-record station), Oct. 1989 to current year.

GAGE--Water-stage recorder and concrete control. Elevation of gage is 3,120 ft above sea level, from topographic map. Oct. 1952 to Sept. 1974 (water-stage recorder) and Oct. 1974 to Sept. 1989 (crest-stage gage) at same site and datum.

REMARKS--Records good.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 9,660 ft³/s Aug. 19, 1971, gage height, 10.5 ft, from inside high-water mark, from rating curve extended above 1,800 ft³/s on basis of slope-area measurement at gage heights 6.50 ft and 9.90 ft; no flow for many days in each year.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 300 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 5.....	2315	*88	*3.42

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.7	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.1	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.4	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	98.75	0.00
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.019	3.19	0.000
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	38	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.2	196	0.00
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00
IN.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2002, BY WATER YEAR (WY)

MEAN	2.41	2.07	8.74	16.3	15.0	12.9	3.92	0.18	0.056	1.18	9.80	2.76
MAX	42.9	44.4	130	247	85.8	74.4	42.0	1.95	1.48	12.6	64.0	19.1
(WY)	2001	2001	1966	1993	1998	1973	1998	1973	1971	1955	1955	1970
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1953	1953	1953	1953	1953	1955	1955	1953	1953	1960	1956	1953

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1953 - 2002

ANNUAL TOTAL	1518.47	99.35	
ANNUAL MEAN	4.16	0.27	6.38
HIGHEST ANNUAL MEAN			33.4
LOWEST ANNUAL MEAN			0.072
HIGHEST DAILY MEAN	62	Mar 8	38
LOWEST DAILY MEAN	0.00	May 31	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	May 31	0.00
ANNUAL RUNOFF (AC-FT)	3010	197	4630
ANNUAL RUNOFF (CFSM)	0.093	0.006	0.14
ANNUAL RUNOFF (INCHES)	1.26	0.08	1.94
10 PERCENT EXCEEDS	16	0.00	11
50 PERCENT EXCEEDS	0.14	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

09485450 PANTANO WASH AT BROADWAY BOULEVARD, AT TUCSON, AZ

LOCATION--Lat 32° 13' 14", long 110° 49' 44", in NW 1/4 NE 1/4 sec. 17, T. 14 S., R. 15 E., Pima County, Hydrologic Unit 15050302, near right bank on downstream side of eastbound bridge on Broadway Blvd., 4.6 mi upstream from mouth, and 8.3 mi east of intersection with Stone Avenue in Tucson.

DRAINAGE AREA--599 mi².

PERIOD OF RECORD--Water years 1979-81, 1984, 1988-90 (annual maximums only), Oct. 1990 to current year.

REVISED RECORDS--WDR AZ-88-1: 1984(M).

GAGE--Water-stage recorder. Datum of gage is 2,568.83 ft above sea level.

REMARKS--Records fair, except for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 11,000 ft³/s Oct. 1, 1983, gage height, 8.60 ft; no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD--Flood of Aug. 12, 1958, reached a discharge of 20,000 ft³/s at Tanque Verde Road, 2.3 mi downstream.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 2,500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 10	1900	*529	*3.18

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.2	0.68
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13	0.00
8	3.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.9
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.8	44
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.6	0.00	e1.3
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.4	0.00	e0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	e0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	e0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.2	0.00	e0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	3.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.51	46.00	81.88
MEAN	0.103	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.629	1.484	2.729
MAX	3.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.2	30	44
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MED	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	6.3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	91	162
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2002, BY WATER YEAR (WY)

MEAN	13.25	4.796	0.000	0.005	0.000	0.004	0.002	0.000	6.545	10.26	15.47	1.891
MAX	52.8	19.1	0.000	0.021	0.000	0.016	0.005	0.000	19.6	30.4	34.8	6.48
(WY)	2001	2001	1999	2001	1999	2000	1999	1999	2000	1999	1999	1999
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.026	0.000
(WY)	1999	2000	1999	1999	1999	1999	2000	1999	1999	2001	2001	2001

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1998 - 2002
ANNUAL TOTAL	4.67	150.59	
ANNUAL MEAN	0.013	0.413	5.299
HIGHEST ANNUAL MEAN			6.08
LOWEST ANNUAL MEAN			3.77
HIGHEST DAILY MEAN		44	1050
LOWEST DAILY MEAN	0.00	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	0.00	0.00
ANNUAL RUNOFF (AC-FT)	9.3	299	3840
ANNUAL RUNOFF (CFSM)	0.000	0.001	0.009
10 PERCENT EXCEEDS	0.00	0.00	0.00
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

GILA RIVER BASIN

09485700 RILLITO CREEK AT DODGE BOULEVARD, AT TUCSON, AZ

LOCATION--Lat 32°16'17", long 110°54'50", in NE1/4NW1/4SE1/4 sec. 28, T.13 S., R.14 E., Pima County, Hydrologic Unit 15050302, on right bank, at downstream side of bridge on Dodge Boulevard, 0.4 mi north of intersection of Ft. Lowell Road and Dodge Boulevard in Tucson.

DRAINAGE AREA--871 mi².

PERIOD OF RECORD--Water years 1988-90 (annual maximums only), Oct. 1990 to current year.

GAGE--Water-stage recorder. Elevation of gage is 2,380 ft above sea level, from topographic map.

REMARKS--Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 24,100 ft³/s Jan. 8, 1993, gage height, 14.84 ft; no flow for many days each year.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 5	1815	*5,930	*7.61
Aug. 28	1730	1,830	5.90
Sept. 6	1730	1,140	5.50

Minimum daily discharge, no flow for most of year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	e0.00	e0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00
5	0.00	e0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e366	e0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e11	e66
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e231	e0.05
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e5.0
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e3.4
10	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e25
11	0.00	0.00	e4.4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e5.7
12	0.00	0.00	e0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.0
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e2.0	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.14	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.50	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e5.4	e0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.0	e90	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	e0.23	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.06	4.66	0.00	0.00	0.00	0.00	0.00	0.00	8.04	698.23	105.15
MEAN	0.000	0.002	0.15	0.000	0.000	0.000	0.000	0.000	0.000	0.26	22.5	3.50
MAX	0.00	0.06	4.4	0.00	0.00	0.00	0.00	0.00	0.00	5.4	366	66
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.1	9.2	0.00	0.00	0.00	0.00	0.00	0.00	16	1380	209
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
IN.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2002, BY WATER YEAR (WY)

MEAN	15.2	8.14	37.8	145	61.3	47.7	13.5	0.000	1.31	11.1	11.5	7.68
MAX	182	48.7	278	1443	214	263	78.8	0.000	15.3	109	26.5	64.5
(WY)	2001	1995	1993	1993	1998	1991	1998	1991	2000	1999	2000	1996
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1991	1991	1994	1994	1994	1996	1993	1991	1991	1991	1991	1991

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1991 - 2002

ANNUAL TOTAL	985.66	816.14	
ANNUAL MEAN	2.70	2.24	32.7
HIGHEST ANNUAL MEAN			164
LOWEST ANNUAL MEAN			0.12
HIGHEST DAILY MEAN	341	Aug 30	11300
LOWEST DAILY MEAN	0.00	Jan 1	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00
ANNUAL RUNOFF (AC-FT)	1960	1620	23720
ANNUAL RUNOFF (CFSM)	0.003	0.003	0.038
ANNUAL RUNOFF (INCHES)	0.04	0.03	0.51
10 PERCENT EXCEEDS	0.27	0.00	10
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

09486055 RILLITO CREEK AT LA CHOLLA BOULEVARD, NEAR TUCSON, AZ

LOCATION--Lat 32° 18'12", long 111° 00'41", in SW1/4SW1/4NW1/4 sec. 15, T.13 S., R.13 E., Pima County, Hydrologic Unit 15050301, on right bank, 200 ft upstream from bridge on La Cholla Boulevard, 1.8 mi downstream from former gage, Rillito Creek near Tucson, 3.0 mi upstream from mouth, and 5.8 mi north of Tucson City Hall.

DRAINAGE AREA--922 mi².

PERIOD OF RECORD--June 1990 to Sept. 1995 (published mean daily discharges over 200 ft³/s), Oct. 1995 to current year.

GAGE--Water-stage recorder and crest-stage gages. Elevation of gage is 2,260 ft above sea level, from topographic map.

REMARKS--Records poor. Only discharges above 25 ft³/s are recorded. Several small diversions above station for irrigation and for municipal and domestic supply, mostly by pumping from ground water.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 24,400 ft³/s Jan. 8, 1993, gage-height 11.39 ft; no flow for most of each year.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 27	1000	564	3.49	Aug. 28.....	1930	2,710	4.47
Aug. 5.....	1915	*9,830	6.65	Sept. 6.....	2000	2,340	4.35
Aug. 7.....	0330	3,030	4.56	Sept. 10.....	1715	1,710	4.11

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e21.0	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e788	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e21	e162
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e235	e1.2
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e154
11	0.00	0.00	e19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e66
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e6.9	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e43	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e211	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	e0.48	0.00
30	0.00	0.00	0.00	e7.0	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	19.00	7.00	0.00	0.00	0.00	0.00	0.00	49.90	1299.48	383.20
MEAN	0.000	0.000	0.613	0.226	0.000	0.000	0.000	0.000	0.000	1.610	41.92	12.77
MAX	0.00	0.00	19	7.0	0.00	0.00	0.00	0.00	0.00	43	788	162
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2002, BY WATER YEAR (WY)

	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1997	1997
MEAN	42.67	9.285	0.040	0.016	20.97	1.431	5.294	0.000	2.074	24.91	6.797	10.08
MAX	299	64.9	0.28	0.11	148	10.0	31.3	0.000	12.4	140	20.0	53.7
(WY)	2001	2001	2002	2002	1998	1998	1998	1996	2000	1999	1999	1996
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1997	1997

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1996 - 2002	
ANNUAL TOTAL	61.50		1758.58			
ANNUAL MEAN	0.168		4.818		11.27	
HIGHEST ANNUAL MEAN					30.8	
LOWEST ANNUAL MEAN					0.000	
HIGHEST DAILY MEAN	30	Aug 30	788	Aug 5	5290	Oct 23 2000
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Oct 1 1995
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Oct 1 1995
10 PERCENT EXCEEDS	0.00		0.00		0.00	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated

GILA RIVER BASIN

09486350 CANADA DEL ORO BELOW INA ROAD, NEAR TUCSON, AZ

LOCATION.--Lat 32° 20'10", long 111° 02'29", in NW_{1/4}NE_{1/4}NW_{1/4} sec. 5, T.13 S., R.13 E., Pima County, Hydrologic Unit 15050301, on left bank, 0.125 mi downstream from Ina Road, 0.25 mi upstream from Thornydale Rd., 1.5 mi upstream from mouth, and 7.3 mi north of Tucson.

DRAINAGE AREA.--255 mi².

PERIOD OF RECORD.--May 1990 to Sept. 1995 (discharge above 200 ft³/s only), Oct. 1995 to current year.

GAGE.--Water-stage recorder and crest-stage gages. Elevation of gage is 2,240 ft above sea level, from topographic map.

REMARKS.--Records poor. Lago del Oro—capacity 9,400 acre-ft—19.6 mi upstream, has contained no storage since May 4, 1971, as gates were opened by court order; however, peak flows are regulated while passing through the lake.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 28.....	2230	*373	*9.48

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e4.2	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e1.9
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.75
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.73	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e12	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	e0.27	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.20	2.65
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.555	0.088
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12	1.9
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2002, BY WATER YEAR (WY)

MEAN	5.150	0.031	0.005	0.162	1.028	0.022	0.020	0.097	0.086	2.112	2.510	0.814
MAX	33.9	0.22	0.035	1.13	4.72	0.15	0.070	0.58	0.43	9.97	6.09	4.01
(WY)	2001	1997	1999	1997	1998	2000	1998	1997	1997	1998	1996	1996
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.081	0.000
(WY)	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1998	1999

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1996 - 2002

ANNUAL TOTAL	12.70	19.85	
ANNUAL MEAN	0.035	0.054	1.100
HIGHEST ANNUAL MEAN			2.91
LOWEST ANNUAL MEAN			0.30
HIGHEST DAILY MEAN	7.7 Aug 19	12 Aug 28	1020 Oct 10 2000
LOWEST DAILY MEAN	0.00 Jan 1	0.00 Oct 1	0.00 Oct 1 1995
ANNUAL SEVEN-DAY MINIMUM	0.00 Jan 1	0.00 Oct 1	0.00 Oct 1 1995
10 PERCENT EXCEEDS	0.00	0.00	0.00
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

09486500 SANTA CRUZ RIVER AT CORTARO, AZ

LOCATION.--Lat 32° 21'04", long 111° 05'38", in NW^{1/4}NW^{1/4}NW^{1/4} sec. 35, T.12 S., R.12 E., Pima County, Hydrologic Unit 15050302, at center column of bridge pier on left bank, 0.5 mi southwest of Cortaro, 1 mi downstream from Ina Road treatment plant, 2.6 mi downstream from Canada del Oro, and 3.7 mi downstream from Rillito Creek.

DRAINAGE AREA.--3,503 mi², of which 395 mi² is in Mexico.

PERIOD OF RECORD.--Oct. 1939 to June 1947 (published as "at Rillito"), July 1950 to Sept. 1984, Mar. to June 1990, July to Sept. 1990 (fragmentary record), Oct. 1990 to current year.

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,100.00 ft, above sea level. Prior to June 30, 1947, at site 5.5 mi downstream at different datum. July 8, 1950, to Jan. 20, 1966, at present site at datum 19.11 ft lower. Jan. 20, 1966, to Sept. 30, 1984, at present site and datum 23.11 ft lower. Aug. 1 to Oct. 19, 1990, at site on right bank 0.33 mi. downstream from bridge at datum 30.20 ft lower. Apr. 10 to May 17, 1991, at site on bridge, 200 ft toward right bank, at different datum. Supplementary water-stage recorder on downstream site on left bridge pier at datum 19.11 ft lower Aug. 29, 1969, to Sept. 30, 1984. Temporary water-stage recorder on right bank Oct. 27, 1983, to Sept. 30, 1984, at datum 20.80 ft lower. Prior to May 8 at site 300 ft upstream at different datum.

REMARKS.--Records fair, except for estimated daily discharges, which are poor. Many diversions above station, mostly by pumping from ground water, for irrigation of about 34,000 acres. Waste water from irrigation and from sewage-disposal plants is included in flow past station in water years 1951, 1952, 1970-82, 1990-97.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,000 ft³/s Oct. 2, 1983, gage height 16.57 ft from floodmark, computed by flood-routing method from Santa Cruz River at Tucson and Rillito Creek at Tucson; no natural flow for most of each year. (See REMARKS)

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 5.....	2115	*8,340	*10.41
Sept. 7.....	0045	4,450	8.62
Sept. 10.....	2015	3,710	8.19

Minimum daily discharge, no natural flow for most of year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	62	64	76	72	74	66	63	63	67	69	60
2	67	65	64	76	67	74	66	68	61	66	73	61
3	66	60	65	74	73	75	67	70	63	64	233	68
4	65	59	65	78	69	76	68	70	62	64	67	65
5	55	61	65	74	72	77	67	68	61	64	706	67
6	55	63	70	78	69	77	65	70	64	58	345	207
7	54	65	72	79	70	79	68	64	63	60	133	735
8	59	67	67	80	73	82	69	56	62	63	59	e74
9	57	66	69	80	72	80	67	63	62	64	56	e104
10	52	64	70	77	71	77	65	75	63	64	54	e1320
11	51	65	75	79	68	76	64	75	62	68	54	506
12	53	68	74	77	64	72	68	66	62	65	54	73
13	51	64	77	76	66	69	66	63	63	66	55	66
14	52	59	77	76	63	70	65	62	65	77	50	62
15	57	65	72	73	68	74	64	61	63	178	59	54
16	55	62	71	75	72	73	62	62	63	61	64	53
17	55	64	73	74	70	73	63	63	65	63	52	55
18	58	67	71	78	73	71	62	64	64	64	54	49
19	58	69	67	77	73	74	64	63	64	70	55	51
20	56	67	68	77	71	73	61	63	66	67	53	57
21	62	68	70	78	69	74	61	63	65	70	48	53
22	67	68	68	76	69	71	65	61	67	73	52	52
23	63	63	73	69	73	69	63	61	66	124	e56	52
24	63	65	74	71	65	70	64	64	67	79	47	49
25	65	66	63	73	70	69	64	62	66	77	53	51
26	63	68	64	69	69	65	63	56	66	86	56	50
27	61	67	72	67	68	67	65	57	66	290	58	55
28	61	69	77	69	71	72	67	61	65	61	111	52
29	62	62	73	67	---	68	68	62	62	61	132	59
30	57	63	72	69	---	68	62	62	56	64	77	57
31	60	---	77	68	---	69	---	64	---	64	61	---
TOTAL	1819	1941	2179	2310	1950	2258	1949	1982	1907	2462	3096	4317
MEAN	58.68	64.70	70.29	74.52	69.64	72.84	64.97	63.94	63.57	79.42	99.87	143.9
MAX	67	69	77	80	73	82	69	75	67	290	706	1320
MIN	51	59	63	67	63	65	61	56	56	58	47	49
AC-FT	3610	3850	4320	4580	3870	4480	3870	3930	3780	4880	6140	8560
CFSM	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.04

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2002, BY WATER YEAR (WY)

	MEAN	MAX	MIN	(WY)	MEAN	MAX	MIN	(WY)	MEAN	MAX	MIN	(WY)	MEAN	MAX	MIN	(WY)	MEAN	MAX	MIN	(WY)
	50.92	744	0.000	1978	30.40	228	0.000	2001	81.89	1044	0.000	1979	99.76	2485	0.000	1993	48.13	252	0.000	1995
	40.44	496	0.000	1978	20.55	104	0.000	1998	20.55	104	0.000	1998	20.70	65.8	0.000	1940	75.49	84.9	0.000	1999
	19.27	198	0.000	1999	20.70	84.9	0.000	2000	75.49	393	1.69	1954	115.9	868	1.97	1960	59.03	868	1.97	1956
	20.70	84.9	0.000	1941	75.49	393	1.69	1960	59.03	358	1.97	1964	59.03	358	1.97	1964	59.03	358	1.97	1964

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1940 - 2002
ANNUAL TOTAL	22802	28170	
ANNUAL MEAN	62.47	77.18	55.81
HIGHEST ANNUAL MEAN			262
LOWEST ANNUAL MEAN			2.59
HIGHEST DAILY MEAN	249	1320	40000
LOWEST DAILY MEAN	30	47	0.00
ANNUAL SEVEN-DAY MINIMUM	47	52	0.00
ANNUAL RUNOFF (AC-FT)	45230	55880	40430
ANNUAL RUNOFF (CFSM)	0.018	0.022	0.016
10 PERCENT EXCEEDS	72	77	69
50 PERCENT EXCEEDS	60	66	13
90 PERCENT EXCEEDS	53	56	0.00

e Estimated

GILA RIVER BASIN

09486520 SANTA CRUZ RIVER AT TRICO ROAD, NEAR MARANA, AZ

LOCATION--Lat 32° 28' 17", long 111° 18' 25", in NE1/4SE1/4, sec. 15, T.11 S., R.10 E., in Pima County, Hydrologic Unit 15050303, on right bank 750 ft upstream from Trico Road bridge, 5 mi west of Marana, and 24 mi northwest of Tucson.

DRAINAGE AREA--3,641 mi².

PERIOD OF RECORD--Apr. 1989 to current year.

GAGE--Water-stage recorder. Elevation of gage is 1,910 ft above sea level, from topographic map.

REMARKS--Records poor. Base flow is effluent from combined municipal sewage treatment plants at Ina Road, 17.6 mi upstream and Roger Rd., 20 mi. upstream.

EXTREMES FOR PERIOD OF RECORD--Maximum mean daily discharge, 15,000 ft³/s Jan. 19, 1993; no flow for many days some years.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 2,700 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 6	0315	*3,440	*8.12

Minimum daily discharge, 2.30 ft³/s, Aug. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	24	34	e44	e49	35	26	17	18	13	21	18
2	20	31	39	e45	53	34	29	21	21	18	24	12
3	29	25	37	45	57	38	25	25	18	15	e22	18
4	27	30	34	43	56	35	29	23	18	14	68	16
5	25	25	34	42	e40	41	29	24	18	14	21	19
6	16	24	38	41	35	42	23	26	18	13	259	22
7	20	29	48	50	38	44	24	24	19	9.7	e42	506
8	21	34	41	41	41	47	30	17	17	6.6	e6.7	49
9	22	35	38	40	37	40	29	8.7	17	7.2	e2.3	137
10	21	27	42	37	36	41	28	22	13	9.8	2.4	62
11	14	28	46	37	36	42	24	25	13	11	5.4	771
12	15	32	e44	36	29	36	28	27	10	15	9.9	44
13	12	35	e43	36	32	38	28	17	9.7	11	7.6	22
14	18	28	43	39	31	31	26	15	e12	16	9.0	e19
15	11	30	41	37	32	40	23	16	e15	43	e9.3	e21
16	14	29	39	41	35	38	21	15	18	24	e8.7	e23
17	15	26	41	41	39	41	24	15	17	26	e14	25
18	15	31	41	40	39	46	23	17	18	24	15	26
19	16	31	39	e43	46	47	26	23	e19	23	22	18
20	16	25	34	46	46	45	24	23	e19	23	15	18
21	17	32	37	47	43	44	23	22	20	21	13	7.5
22	24	33	35	51	38	44	25	23	20	22	11	13
23	e25	33	36	44	45	46	24	22	18	52	16	20
24	e27	29	39	e44	53	46	23	21	14	45	10	11
25	e26	30	38	e43	58	37	25	24	12	26	14	11
26	27	34	28	e45	53	33	26	20	10	30	18	13
27	22	31	34	46	42	30	23	12	12	34	15	9.8
28	26	33	44	47	34	31	26	14	9.9	100	21	11
29	29	31	45	46	---	37	23	16	10	17	216	15
30	23	34	44	43	---	31	27	14	12	21	45	22
31	22	---	44	49	---	35	---	14	---	23	15	---
TOTAL	633	899	1220	1329	1173	1215	764	602.7	465.6	727.3	978.3	1979.3
MEAN	20.4	30.0	39.4	42.9	41.9	39.2	25.5	19.4	15.5	23.5	31.6	66.0
MAX	29	35	48	51	58	47	30	27	21	100	259	771
MIN	11	24	28	36	29	30	21	8.7	9.7	6.6	2.3	7.5
AC-FT	1260	1780	2420	2640	2330	2410	1520	1200	924	1440	1940	3930

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2002, BY WATER YEAR (WY)

MEAN	39.1	23.9	36.0	158	63.9	26.3	14.9	8.51	7.56	44.7	23.4	33.0
MAX	337	73.0	157	1509	294	82.1	41.1	19.4	22.8	318	49.1	207
(WY)	2001	2001	1995	1993	1998	1991	1998	2002	2000	1990	2000	1996
MIN	0.000	1.76	3.83	9.60	0.000	0.000	0.000	0.000	0.000	0.000	2.00	0.000
(WY)	1996	1996	2001	1992	1993	1993	1991	1991	1991	1991	1991	1995

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1990 - 2002

ANNUAL TOTAL	7216.37	11986.2	
ANNUAL MEAN	19.8	32.8	40.0
HIGHEST ANNUAL MEAN			135
LOWEST ANNUAL MEAN			9.71
HIGHEST DAILY MEAN	73	Apr 6	771
LOWEST DAILY MEAN	0.00	Apr 14	2.3
ANNUAL SEVEN-DAY MINIMUM	4.9	Jun 27	6.2
ANNUAL RUNOFF (AC-FT)	14310	23770	28950
10 PERCENT EXCEEDS	37	45	38
50 PERCENT EXCEEDS	18	26	12
90 PERCENT EXCEEDS	6.8	13	0.00

e Estimated

09486580 ARIVACA CREEK AT ARIVACA, AZ

LOCATION--Lat 31° 34' 24", long 111° 19' 56", in SW_{1/4}/SW_{1/4}/SE_{1/4}, sec. 28, T.21 S., R.10 E., Pima County, Hydrologic Unit 15050301, on the right bank, in the Arivaca quad.

DRAINAGE AREA--56.8 mi², from topographic map.

PERIOD OF RECORD--June 1996 to April 30, 2002, when gage was discontinued.

GAUGE--Water-stage recorder and data collection platform. Datum of gage is 3,600 ft above sea level. U.S. Fish and Wildlife Service has taken measurements since 1991. U.S. Geological Survey operated a gage 4 mi downstream (09486600) from 1967 to 1972.

REMARKS--Records fair, except for estimated daily discharges, which are poor. No known regulation except for a few small stock ponds.

EXTREMES FOR PERIOD OF RECORD--At site 4 mi downstream (09486600), maximum discharge 3,550 ft³/s Dec. 20, 1967 (gage height, 7.18 ft from highwater mark in gage well), from rating curve extended above 260 ft³/s on basis of slope-area measurement at gage height 13.32 ft.

EXTREMES OUTSIDE PERIOD OF RECORD--Flood of Dec. 24, 1965, reached a stage of 13.32 ft from a profile past gage (4 mi downstream) (discharge, 15,900 ft³/s, by slope-area measurement of peak flow); flood resulted from storm runoff and failure of two earth dams which were storing an estimated 2,000 acre-ft.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 100 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 11.....	1545	*1.7	*8.41

Minimum daily discharge, 0.21 ft³/s Oct. 3 and Nov. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.26	e0.21	e0.46	0.72	0.65	0.49	0.44	---	---	---	---	---
2	0.26	e0.22	e0.46	0.73	0.65	0.48	0.44	---	---	---	---	---
3	0.21	e0.25	e0.47	0.70	0.65	0.47	0.41	---	---	---	---	---
4	0.25	e0.22	0.77	0.70	0.74	0.51	0.41	---	---	---	---	---
5	0.25	e0.27	0.61	0.64	0.67	0.54	0.43	---	---	---	---	---
6	0.26	e0.26	0.57	0.60	0.60	0.52	0.44	---	---	---	---	---
7	0.25	e0.32	0.54	0.61	0.61	0.50	0.44	---	---	---	---	---
8	0.26	e0.33	0.51	0.61	0.59	0.54	0.47	---	---	---	---	---
9	0.25	e0.37	0.53	0.63	0.58	0.53	0.51	---	---	---	---	---
10	0.31	e0.36	0.55	0.65	0.51	0.53	0.49	---	---	---	---	---
11	0.25	e0.41	1.1	0.63	0.56	0.52	0.49	---	---	---	---	---
12	0.25	e0.39	0.97	0.62	0.61	0.54	0.49	---	---	---	---	---
13	0.29	e0.46	0.79	0.65	0.60	0.56	0.55	---	---	---	---	---
14	0.31	e0.47	0.73	0.69	0.59	0.52	0.55	---	---	---	---	---
15	0.25	e0.48	0.85	0.70	0.58	0.51	0.57	---	---	---	---	---
16	0.28	e0.59	0.76	0.66	0.60	0.54	0.58	---	---	---	---	---
17	0.33	e0.49	0.72	0.69	0.58	0.56	0.64	---	---	---	---	---
18	0.30	e0.51	0.72	0.69	0.62	0.68	0.59	---	---	---	---	---
19	0.25	e0.53	0.74	0.82	0.60	0.69	0.54	---	---	---	---	---
20	0.33	e0.48	0.71	0.70	0.60	0.66	0.60	---	---	---	---	---
21	0.31	e0.48	0.61	0.66	0.59	0.69	0.65	---	---	---	---	---
22	0.31	e0.51	0.51	0.66	0.57	0.67	0.68	---	---	---	---	---
23	0.34	e0.52	0.55	0.71	0.59	0.61	0.72	---	---	---	---	---
24	0.29	e0.47	0.59	0.63	0.60	0.66	e0.73	---	---	---	---	---
25	0.32	e0.50	0.60	0.63	0.58	0.67	e0.73	---	---	---	---	---
26	0.29	e0.52	0.61	0.65	0.53	0.68	e0.73	---	---	---	---	---
27	e0.26	e0.52	0.63	0.66	0.54	0.71	e0.73	---	---	---	---	---
28	e0.27	e0.49	0.65	0.63	0.54	0.82	e0.73	---	---	---	---	---
29	e0.28	e0.46	0.67	0.64	---	0.59	e0.73	---	---	---	---	---
30	e0.31	e0.43	0.69	0.78	---	0.46	e0.77	---	---	---	---	---
31	e0.23	---	0.73	0.70	---	0.47	---	---	---	---	---	---
TOTAL	8.61	12.52	20.40	20.79	16.73	17.92	17.28	---	---	---	---	---
MEAN	0.28	0.42	0.66	0.67	0.60	0.58	0.58	---	---	---	---	---
MAX	0.34	0.59	1.1	0.82	0.74	0.82	0.77	---	---	---	---	---
MIN	0.21	0.21	0.46	0.60	0.51	0.46	0.41	---	---	---	---	---
AC-FT	17	25	40	41	33	36	34	---	---	---	---	---

e Estimated

GILA RIVER BASIN

09486590 ARIVACA CREEK NEAR ARIVACA, AZ

LOCATION--Lat, long undetermined. 1.5 mi west of Arivaca, on the Arivaca/Sasabe Hwy.

DRAINAGE AREA--Undetermined.

PERIOD OF RECORD--Apr. 30, 2002, to current year.

GAGE--Water-stage recorder and data collection platform. Datum of gage is undetermined. U.S. Fish and Wildlife Service has taken measurements 1.5 mi upstream since 1991. U.S. Geological Survey operated a gage 2.5 mi downstream (09486600) from 1967 to 1972. U.S. Geological Survey operated a gage 1.5 mi upstream (09486580) from 1996 to 2002.

REMARKS--Records good. No known regulation except for a few small stock ponds.

EXTREMES FOR PERIOD OF RECORD--At site 2.5 mi. downstream (09486600), maximum discharge 3,550 ft³/s Dec. 20, 1967 (gage height 7.18 ft. from highwater mark in gage well), from rating curve extended above 260 ft³/s on basis of slope-area measurement at gage height 13.32 ft.

EXTREMES OUTSIDE PERIOD OF RECORD--Flood of Dec. 24, 1965, reached a stage of 13.32 ft. from a profile past gage (4 mi. downstream) (discharge 15,900 ft³/s, by slope area measurement of peak flow); flood resulted from storm runoff and failure of two earth dams which were storing an estimated 2,000 acre ft.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 100 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 2.....	1745	*254	*4.22

Minimum daily discharge, no flow for most of the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	0.06	0.00	0.00	0.00	0.00
2	---	---	---	---	---	---	---	0.04	0.00	0.00	29	0.00
3	---	---	---	---	---	---	---	0.04	0.00	0.00	11	0.00
4	---	---	---	---	---	---	---	0.03	0.00	0.00	1.0	0.00
5	---	---	---	---	---	---	---	0.01	0.00	0.00	0.61	0.00
6	---	---	---	---	---	---	---	0.01	0.00	0.00	0.43	0.00
7	---	---	---	---	---	---	---	0.02	0.00	0.00	0.15	0.00
8	---	---	---	---	---	---	---	0.02	0.00	0.00	0.04	0.00
9	---	---	---	---	---	---	---	0.02	0.00	0.00	0.00	0.00
10	---	---	---	---	---	---	---	0.01	0.00	0.00	0.00	0.00
11	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
12	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
13	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
14	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
15	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
16	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
17	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
18	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
19	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
20	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
21	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
22	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
23	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
24	---	---	---	---	---	---	---	0.00	0.00	4.1	0.00	0.00
25	---	---	---	---	---	---	---	0.00	0.00	8.3	0.00	0.00
26	---	---	---	---	---	---	---	0.00	0.00	0.23	0.00	0.00
27	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
28	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
29	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
30	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
31	---	---	---	---	---	---	---	0.00	---	0.00	0.00	---
TOTAL	---	---	---	---	---	---	---	0.25	0.00	12.63	42.23	0.00
MEAN	---	---	---	---	---	---	---	0.008	0.000	0.407	1.362	0.000
MAX	---	---	---	---	---	---	---	0.06	0.00	8.3	29	0.00
MIN	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
MED	---	---	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00
AC-FT	---	---	---	---	---	---	---	0.5	0.00	25	84	0.00

GILA RIVER BASIN

09486800 ALTAR WASH NEAR THREE POINTS, AZ

LOCATION.--Lat 31° 50' 20", long 111° 24' 13", in SE1/4NE1/4NE1/4 sec. 27, T.18 S., R.9 E., Pima County, Hydrologic Unit 15050304, on right bank attached to downstream side of bridge on State Highway 286, 0.3 mi below mouth of Chiltipines Wash and 18 mi south of Three Points.

DRAINAGE AREA.--463 mi².

PERIOD OF RECORD.--Jan. 1966 to Sept. 1975, May 1992 to current year.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 2,975.15 ft above sea level.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft³/s Sept. 4, 1970, gage height 13.85 ft at site 2 mi upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and (or) maximum (*):

Date	Discharge (ft ³ /s)	Gage height (ft)
July 25.....	*696	*2.91

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.7	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13	0.00
6	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
7	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	7.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.2	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.01	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	21.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	118.10	62.70	60.63
MEAN	0.70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.81	2.02	2.02
MAX	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61	28	38
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	234	124	120

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2002, BY WATER YEAR (WY)

	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1968
MEAN	0.89	0.22	2.17	0.001	0.20	0.92	0.000	0.002	3.13	16.0	21.6	20.9
MAX	6.74	3.22	38.6	0.021	3.62	15.3	0.003	0.045	58.9	102	73.5	210
(WY)	1973	1997	1968	2001	1998	1973	1995	1967	2000	1999	1974	1970
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.68	0.000
(WY)	1967	1967	1967	1967	1967	1967	1967	1968	1968	1993	1992	1968

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1967 - 2002
ANNUAL TOTAL	500.64	263.23	
ANNUAL MEAN	1.37	0.72	5.81
HIGHEST ANNUAL MEAN			20.0
LOWEST ANNUAL MEAN			0.53
HIGHEST DAILY MEAN	447 Aug 5	61 Jul 25	5460 Sep 4 1970
LOWEST DAILY MEAN	0.00 Jan 1	0.00 Oct 1	0.00 Oct 1 1966
ANNUAL SEVEN-DAY MINIMUM	0.00 Jan 1	0.00 Oct 9	0.00 Oct 1 1966
ANNUAL RUNOFF (AC-FT)	993	522	4210
10 PERCENT EXCEEDS	0.00	0.00	0.00
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

GILA RIVER BASIN

09487000 BRAWLEY WASH NEAR THREE POINTS, AZ

LOCATION--Lat 32° 04'32", long 111° 20'17", in SE1/4NE1/4SW1/4 sec. 32, T.15 S., R.10 E., Pima County, Hydrologic Unit 15050302, on right bank downstream side of State Highway 86 bridge, 1.6 mi west of Three Points, and 23 mi west of Tucson.

DRAINAGE AREA--776 mi².

PERIOD OF RECORD--Oct. 1966 to Sept. 1981 (crest-stage gage) at site 1,000 ft downstream, May 1992 to current year.

GAGE--Water-stage recorder and crest-stage gages. Elevation of gage is 2,540 ft above sea level, from topographic map. Prior to May 19, 1992 gage was located 1,000 ft downstream from current location.

REMARKS--Records poor.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge 13,700 ft³/s Sept. 4, 1970, gage height 15.8 ft site and datum then in use; no flow for most of each year.

EXTREMES OUTSIDE PERIOD OF RECORD--Maximum discharge, 19,100 ft³/s Oct. 1, 1983, from contracted opening measurement of peak flow, gage height 12.07 ft from floodmarks.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 25	2315	*240	*7.67

Minimum daily discharge, no flow for most of year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	e5.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e3.2
7	e3.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.81
8	e0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e3.2
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e1.2
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e5.6
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e2.4	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e4.1	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.65	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.33	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e18	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e20	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e18	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	10.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.33	7.15	14.01
MEAN	0.331	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.817	0.231	0.467
MAX	5.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20	4.1	5.6
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112	14	28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2002, BY WATER YEAR (WY)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		
MEAN	3.778	0.982	0.973	1.337	0.001	0.002	0.000	0.012	1.526	15.30	21.15	18.76
MAX	26.8	4.83	9.73	10.6	0.011	0.016	0.000	0.12	15.2	110	63.9	87.6
(WY)	2001	1997	1995	1995	1993	2001	1993	1993	2000	1999	1997	1999
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1993	1993	1993	1994	1994	1993	1993	1994	1993	1993	1994	1993

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1993 - 2002
ANNUAL TOTAL	113.77	87.75	
ANNUAL MEAN	0.312	0.240	5.358
HIGHEST ANNUAL MEAN			18.8
LOWEST ANNUAL MEAN			0.028
HIGHEST DAILY MEAN	34 Aug 13	20 Jul 26	1610 Aug 27 1993
LOWEST DAILY MEAN	0.00 Jan 1	0.00 Oct 1	0.00 Oct 1 1992
ANNUAL SEVEN-DAY MINIMUM	0.00 Jan 1	0.00 Oct 9	0.00 Oct 1 1992
ANNUAL RUNOFF (AC-FT)	226	174	3880
10 PERCENT EXCEEDS	0.00	0.00	0.00
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

GILA RIVER BASIN

201

09489000 SANTA CRUZ RIVER NEAR LAVEEN, AZ

LOCATION.--Lat 33° 13'56", long 112° 10'08", in NE1/4NE1/4 sec. 29, T.2 S., R.2 E., Pinal County, Hydrologic Unit 15050303, in Gila River Indian Reservation, on downstream side of highway bridge, 3.4 mi upstream from mouth, 4.3 mi south of Komatke, and 9 mi south of Laveen.

DRAINAGE AREA.--8,581 mi².

PERIOD OF RECORD.--Jan. 1940 to Sept. 1946, Dec. 1947 to current year.

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,020.86 ft above sea level.

REMARKS.--No estimated daily discharge. Records good. Many diversions above station, mostly by pumping from ground water, for municipal uses and for irrigation of about 240,000 acres, not including San Carlos Project. Much of the low flow passing this station is drainage and wasteway return from irrigated lands upstream and pumpage from ground water.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft³/s Oct. 4, 1983, gage height, 19.74 ft, from flow-routing computation; no flow for many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 380 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 12.....	0315	*187	*10.46

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	3.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	1.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.1
8	15	0.00	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12
9	2.8	0.00	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.0
10	0.98	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27
11	0.56	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51
12	0.34	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83
13	0.18	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.9
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.8
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.2
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	19.86	0.00	7.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	211.11
MEAN	0.641	0.000	0.251	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.037
MAX	15	0.00	3.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	39	0.00	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	419
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2002, BY WATER YEAR (WY)

	MEAN	38.13	7.294	22.20	34.39	13.81	12.19	3.606	1.656	1.224	13.14	51.00	28.53
MAX	1812	200	435	1182	186	229	75.6	13.8	10.8	193	597	570	
(WY)	1984	1958	1968	1993	1983	1941	1941	1941	1967	1990	1955	1946	
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1959	1957	1959	1959	1961	1964	1963	1961	1961	1963	1973	1968	

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1940 - 2002
ANNUAL TOTAL	549.95	238.76	
ANNUAL MEAN	1.507	0.654	19.33
HIGHEST ANNUAL MEAN			170 1984
LOWEST ANNUAL MEAN			0.47 1977
HIGHEST DAILY MEAN	95 Jan 28	83 Sep 12	18000 Oct 4 1983
LOWEST DAILY MEAN	0.00 Jan 1	0.00 Oct 1	0.00 Jul 17 1940
ANNUAL SEVEN-DAY MINIMUM	0.00 Jan 1	0.00 Oct 1	0.00 Jul 17 1940
ANNUAL RUNOFF (AC-FT)	1090	474	14010
ANNUAL RUNOFF (CFSM)	0.000	0.000	0.002
10 PERCENT EXCEEDS	0.71	0.00	8.0
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

GILA RIVER BASIN

09489500 BLACK RIVER BELOW PUMPING PLANT, NEAR POINT OF PINES, AZ

LOCATION--Lat 33° 28'36", long 109° 45'48", in W sec. 32, T.2 N., R.25 E. (unsurveyed), Graham County, Hydrologic Unit 15060101, in San Carlos Indian Reservation, on left bank 0.9 mi downstream from Phelps Dodge Corp. pumping plant, 1.3 mi downstream from Freezeout Creek, 8 mi northwest of Point of Pines, and 63 mi upstream from confluence with White River.

DRAINAGE AREA--560 mi².

PERIOD OF RECORD--June 1953 to current year.

GAGE--Water-stage recorder. Elevation of gage is 5,725 ft above sea level, from topographic map.

REMARKS--Records good except for estimated daily discharges, which are poor. Water is diverted at pumping plant 0.9 mi upstream and pumped into headwaters of Willow Creek (tributary of Eagle Creek) for mining, metallurgical treatment of ores, and domestic supply in vicinity of Morenci. (See sta 09445000.)

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 17,900 ft³/s Oct. 19, 1972, gage height, 18.0 ft, from floodmarks, from rating curve extended above 5,000 ft³/s; minimum daily, 2.6 ft³/s July 5, 1974.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 5	2100	571	4.11
Aug. 9	1635	1500	5.36
Sept. 11	1600	919	4.62

Minimum daily discharge, 19 ft³/s June 19, 22, and 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	31	34	39	34	37	29	21	21	21	54	33
2	26	32	33	37	37	37	29	21	21	22	49	32
3	26	31	32	41	37	36	29	21	21	23	55	30
4	27	31	32	33	34	33	29	21	21	21	51	29
5	28	32	35	40	33	31	29	21	21	24	111	29
6	27	33	35	43	33	33	33	20	21	24	88	29
7	29	33	32	39	35	36	39	20	21	21	81	29
8	37	33	32	32	32	39	38	21	20	23	71	37
9	35	33	33	34	32	40	32	25	20	28	181	45
10	34	32	31	34	37	39	30	25	20	28	110	47
11	32	32	36	35	34	36	28	24	23	31	80	362
12	30	32	36	35	32	37	27	24	23	31	56	434
13	29	32	36	34	32	38	26	24	21	27	41	224
14	30	32	32	37	33	38	26	24	23	27	35	144
15	29	32	40	36	35	39	26	24	23	28	33	109
16	29	32	34	31	34	38	25	25	20	29	30	90
17	29	32	38	32	35	35	25	25	22	39	29	76
18	29	32	45	33	36	34	25	24	22	42	31	60
19	29	32	44	35	37	34	25	25	19	53	30	49
20	29	32	39	31	35	34	24	24	21	42	39	44
21	29	31	41	32	35	34	23	24	22	40	57	41
22	29	31	43	41	36	34	23	24	19	37	46	35
23	30	33	43	45	36	34	23	24	21	70	38	33
24	30	37	43	40	37	35	23	24	22	62	32	30
25	30	34	45	33	38	35	23	24	19	56	29	29
26	30	32	46	39	38	34	24	24	21	49	26	28
27	30	32	46	45	38	34	25	24	22	100	25	27
28	30	34	46	33	38	34	25	24	20	203	26	26
29	30	31	45	33	---	34	25	24	22	195	31	26
30	31	31	40	33	---	32	22	23	23	108	33	26
31	31	---	39	36	---	30	---	22	---	72	32	---
TOTAL	919	967	1186	1121	983	1094	809	718	635	1576	1630	2233
MEAN	29.65	32.23	38.26	36.16	35.11	35.29	26.97	23.16	21.17	50.84	52.58	74.43
MAX	37	37	46	45	38	40	39	25	23	203	181	434
MIN	25	31	31	31	32	30	22	20	19	21	25	26
AC-FT	1820	1920	2350	2220	1950	2170	1600	1420	1260	3130	3230	4430
CFSM	0.05	0.06	0.07	0.06	0.06	0.06	0.05	0.04	0.04	0.09	0.09	0.13
IN.	0.06	0.06	0.08	0.07	0.07	0.07	0.05	0.05	0.04	0.10	0.11	0.15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2002, BY WATER YEAR (WY)

	1954	1954	1954	1954	1954	1954	1954	1954	1954	1954	1954	1954
MEAN	108.3	92.12	117.6	141.6	230.5	539.3	703.5	279.7	60.95	43.49	105.9	86.51
MAX	1211	505	915	1571	1036	1863	2253	1933	244	122	509	385
(WY)	1973	1995	1979	1993	1980	1985	1979	1973	1973	1965	1999	1963
MIN	13.6	22.7	20.0	23.0	34.7	30.1	27.0	22.5	9.84	14.1	18.2	9.36
(WY)	1954	1954	1954	1996	1974	1996	2002	1996	1974	1989	1962	1956

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR (*) 146.7 (**) 106210	FOR 2002 WATER YEAR (*) 44.7 (**) 32350	WATER YEARS 1954 - 2002
ANNUAL TOTAL	50871	13871	
ANNUAL MEAN	139.4	38.00	208.7
HIGHEST ANNUAL MEAN			617
LOWEST ANNUAL MEAN			38.0
HIGHEST DAILY MEAN	913	Apr 10	11000
LOWEST DAILY MEAN	23	Jul 5	2.6
ANNUAL SEVEN-DAY MINIMUM	25	Jun 29	5.4
ANNUAL RUNOFF (AC-FT)	100900	27510	151200
ANNUAL RUNOFF (CFSM)	0.25	0.068	0.37
ANNUAL RUNOFF (INCHES)	3.38	0.92	5.06
10 PERCENT EXCEEDS	439	46	557
50 PERCENT EXCEEDS	45	32	57
90 PERCENT EXCEEDS	29	22	24

(*) Mean, adjusted for Willow Creek Diversion from Black River near Morenci.
(**) AC-FT, adjusted for Willow Creek Diversion from Black River near Morenci.

09490500 BLACK RIVER NEAR FORT APACHE, AZ

LOCATION--Lat 33° 42'46", long 110° 12'40", in NW₁/₄ sec. 12, T.4 N., R.20 E. (unsurveyed), Gila County, Hydrologic Unit 15060101, on downstream side of first pier from right bank on highway bridge, 5 mi upstream from confluence with White River and 14 mi west of Fort Apache.

DRAINAGE AREA--1,232 mi².

PERIOD OF RECORD--Oct. 1912 to Dec. 1915, Sept. 1916, Oct. 1917 to Jan. 1918, Apr. 1918, Oct. 1957 to current year. Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS--WSP 1313: 1914-15, drainage area.

GAGE--Water-stage recorder. Elevation of gage is 4,345 ft above sea level, from river-profile map. Nov. 1912 to July 1918, nonrecording gages or water-stage recorders at several sites within 1 mi of present site at various datums.

REMARKS--No estimated daily discharges. Records good. One transbasin diversion for industrial and municipal use (see record of Willow Creek diversion from Black River, near Morenci). Negligible storage in several small recreational lakes.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 54,700 ft³/s, Jan. 8, 1993, gage height, 28.10 ft, from rating curve extended above 8,500 ft³/s on basis of slope-area measurements at gage heights 22.33 ft and 24.80 ft; minimum daily, 11 ft³/s July 6, 1974.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 3,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 11.....	1015	2,530	*6.36

Minimum daily discharge, 20 ft³/s, June 22, 25, and 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	41	46	57	52	56	52	38	24	21	105	46
2	36	42	48	57	44	55	48	34	23	23	82	43
3	36	43	49	55	51	54	47	32	22	23	71	42
4	38	43	52	53	58	52	45	31	22	22	170	38
5	39	44	52	55	57	48	44	31	22	23	137	37
6	39	46	51	47	55	48	44	30	22	23	136	35
7	42	47	50	47	52	48	46	30	22	22	183	34
8	43	47	48	53	50	55	52	29	22	24	157	35
9	48	48	45	53	51	58	63	27	22	24	132	39
10	64	47	41	52	51	60	62	27	22	24	185	94
11	57	47	43	53	48	59	54	28	22	64	197	787
12	52	45	48	53	49	57	50	31	21	46	144	643
13	48	45	55	53	49	55	47	29	21	36	104	454
14	45	45	44	53	51	56	44	29	23	44	79	274
15	44	45	37	50	52	57	42	29	23	55	64	196
16	44	46	46	49	53	58	41	28	22	40	54	153
17	42	47	50	52	54	57	40	27	23	38	53	127
18	42	47	47	50	53	56	39	27	22	78	47	111
19	42	47	45	50	54	52	38	27	21	55	44	98
20	41	47	52	49	55	53	37	27	22	51	42	83
21	41	47	57	42	57	52	37	26	22	61	41	74
22	41	47	59	38	54	52	36	26	20	59	50	68
23	41	47	53	42	53	51	36	26	21	55	68	61
24	41	48	49	52	54	51	35	26	21	48	55	55
25	41	49	57	44	55	52	34	26	20	95	46	50
26	41	55	49	40	55	52	34	26	21	83	39	47
27	41	52	37	45	56	53	33	26	22	297	34	44
28	41	48	44	59	57	52	33	26	20	755	30	43
29	41	46	53	65	---	52	37	25	21	312	32	41
30	41	42	63	57	---	54	38	25	23	237	33	39
31	41	---	59	58	---	54	---	25	---	149	37	---
TOTAL	1329	1390	1529	1583	1480	1669	1288	874	654	2887	2651	3891
MEAN	42.87	46.33	49.32	51.06	52.86	53.84	42.93	28.19	21.80	93.13	85.52	129.7
MAX	64	55	63	65	58	60	63	38	24	755	197	787
MIN	36	41	37	38	44	48	33	25	20	21	30	34
AC-FT	2640	2760	3030	3140	2940	3310	2550	1730	1300	5730	5260	7720
CFSM	0.03	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.02	0.08	0.07	0.11
IN.	0.04	0.04	0.05	0.05	0.04	0.05	0.04	0.03	0.02	0.09	0.08	0.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2002, BY WATER YEAR (WY)

MEAN	209.7	157.6	353.2	407.9	580.2	1029	1114	477.0	105.5	86.28	183.7	141.7
MAX	2725	769	2449	4904	3145	3864	4423	3109	448	763	659	650
(WY)	1984	1995	1979	1993	1980	1978	1915	1973	1973	1915	1959	1988
MIN	30.6	36.7	38.4	36.8	52.9	50.2	42.9	28.2	16.9	23.3	34.9	30.5
(WY)	1974	1976	1977	1976	2002	1999	2002	2002	1974	1994	1975	1960

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1915 - 2002
ANNUAL TOTAL	76001	21225	
ANNUAL MEAN	208.2	58.15	405.9
HIGHEST ANNUAL MEAN			1200
LOWEST ANNUAL MEAN			52.6
HIGHEST DAILY MEAN	1240	787	32600
LOWEST DAILY MEAN	34	20	11
ANNUAL SEVEN-DAY MINIMUM	35	21	12
ANNUAL RUNOFF (AC-FT)	150700	42100	294100
ANNUAL RUNOFF (CFSM)	0.17	0.047	0.33
ANNUAL RUNOFF (INCHES)	2.29	0.64	4.48
10 PERCENT EXCEEDS	716	66	1110
50 PERCENT EXCEEDS	76	47	99
90 PERCENT EXCEEDS	41	24	38

GILA RIVER BASIN

09495000 FORESTDALE CREEK DIVERSION FROM SHOW LOW CREEK, NEAR SHOW LOW, AZ

LOCATION--Lat 34° 10'40", long 110° 00'56", in SE1/4NW1/4 sec. 16, T.9 N., R.22 E., Navajo County, Hydrologic Unit 15020005, in Sitgreaves National Forest, on right bank 170 ft downstream from terminal structure of Show Low Creek diversion works, 4,350 ft west of pumping plant on Show Low Lake, and 5 mi south of Show Low.

PERIOD OF RECORD--May 1953 to current year.

GAGE--Water-stage recorders and V-notch sharp-crested weir. Datum of gage is 6,621.57 ft above sea level (Bureau of Reclamation benchmark).

REMARKS--No estimated daily discharges. Records excellent. Entire flow consists of water pumped from Show Low Lake in Little Colorado River basin, into Forestdale Creek in the Gila River basin.

EXTREMES FOR PERIOD OF RECORD--No daily flow for the water year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CAL YR 2001	TOTAL	1406.64	MEAN	3.854	MAX	14	MIN	0.00	AC-FT	2790		
WTR YR 2002	TOTAL	0.00	MEAN	0.000	MAX	0.00	MIN	0.00	AC-FT	0.00		

GILA RIVER BASIN

09496500 CARRIZO CREEK NEAR SHOW LOW, AZ

LOCATION.--Lat 33° 59' 09", long 110° 16' 49", in sec. 24, T.7 N., R.19 E. (unsurveyed), Gila County, Hydrologic Unit 15060104, in Fort Apache Indian Reservation, on right bank 500 ft upstream from bridge on U.S. Highway 60, 1 mi downstream from Corduroy Creek, 23 mi southwest of Show Low, and 24 mi upstream from mouth.

DRAINAGE AREA.--439 mi².

PERIOD OF RECORD.--June 1951 to June 1961, June 1967 to June 1976, Oct. 1975 to June 1976 (monthly discharges only), Apr. 1977 to current year.

REVISED RECORDS.--WRD Ariz. 1968: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,749.52 ft above sea level. Prior to June 1976 at site on bridge pier 400 ft downstream at same datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Diversions for irrigation above station of less than 300 acres. Records include trans basin diversion from Show Low Creek into headwaters of Carrizo Creek. (See sta 09495000.)

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,500 ft³/s Jan. 18, 1952, gage height, 12.08 ft, at site then in use, from rating curve extended above 2,000 ft³/s on basis of slope-area measurement of peak flow; maximum gage height, 15.1 ft Dec. 18, 1978, from high-water mark; minimum daily discharge, no flow, estimated, June 17, 2002.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1951, about 23,000 ft³/s Dec. 30, 1965, gage height, 13.0 ft, from floodmark at previous site, from rating curve extended above 2,000 ft³/s on basis of slope-area measurement at gage height 12.08 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 16	1920	1,480	5.51	Aug. 5	2220	*11,000	*12.50
July 25	1730	2,600	6.87	Aug. 8	2330	1,270	5.20
July 26	1615	2,710	6.99	Sept. 9	1745	2,950	7.23
Aug. 4	1900	5,340	9.22	Sept. 10	1815	5,140	9.07

Minimum daily discharge, no flow, estimated, June 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	2.6	4.5	6.0	5.9	4.7	4.6	3.6	0.68	0.09	22	5.6
2	2.3	2.8	4.5	5.5	6.0	4.7	4.4	3.0	0.53	0.16	102	5.7
3	2.5	2.8	4.5	5.4	5.9	4.6	4.4	2.8	0.56	0.28	42	6.3
4	2.1	2.8	5.2	5.3	5.8	4.7	4.3	2.8	0.59	0.41	543	5.2
5	1.9	3.2	6.1	5.2	5.6	4.7	4.3	2.7	0.64	0.51	818	4.8
6	1.9	3.7	5.2	5.2	5.3	4.8	4.7	2.6	0.88	0.62	418	5.2
7	3.6	3.4	4.9	5.1	5.3	4.8	7.6	2.4	0.74	0.15	54	4.9
8	6.3	3.3	4.8	5.2	5.3	6.2	6.0	2.9	0.26	0.40	68	107
9	3.1	3.3	4.8	5.2	5.2	5.5	5.3	2.2	0.17	0.60	98	305
10	2.8	3.4	4.9	5.4	5.0	5.1	4.9	2.0	0.17	0.87	16	553
11	2.3	3.5	5.7	5.4	5.0	4.9	4.8	1.7	0.78	1.6	10	175
12	2.1	3.7	6.1	5.2	5.1	4.9	4.7	1.6	0.41	0.75	7.2	42
13	2.2	3.7	5.5	5.2	5.1	4.8	4.4	2.0	0.38	0.85	5.9	18
14	2.2	3.8	5.5	5.2	5.0	4.7	4.2	1.4	0.24	0.81	5.1	13
15	2.2	3.8	6.0	5.2	5.0	4.7	4.1	1.3	0.09	1.3	42	9.6
16	2.2	3.9	5.9	5.3	5.0	4.7	4.3	1.3	e0.03	154	78	7.7
17	2.2	4.0	5.7	5.3	4.9	4.8	4.4	1.3	e0.00	47	33	6.8
18	2.2	4.0	5.7	5.3	5.0	4.8	4.1	1.2	e0.40	79	9.6	8.0
19	2.2	4.1	5.8	5.2	5.1	4.8	4.0	1.2	0.04	27	20	8.1
20	2.2	4.0	5.7	5.2	5.0	4.6	3.9	1.6	e0.02	14	59	5.9
21	2.2	4.2	5.5	5.2	4.8	4.6	4.0	0.82	0.31	5.4	54	5.4
22	2.3	4.2	5.3	5.2	4.7	4.6	3.9	1.2	0.24	2.8	11	5.3
23	2.4	4.3	5.3	5.4	4.9	4.5	3.8	1.8	0.06	14	7.2	5.2
24	2.3	4.2	5.4	5.6	4.9	4.5	3.7	1.6	0.07	53	5.9	4.6
25	2.3	4.4	5.2	5.7	4.8	4.6	3.6	1.1	0.05	208	5.3	4.7
26	2.3	4.5	5.2	5.4	4.6	4.6	3.5	1.5	0.13	241	4.9	4.2
27	2.3	4.5	5.4	5.4	4.7	4.5	3.4	1.2	0.14	40	4.5	3.9
28	2.4	4.4	5.3	5.3	4.8	4.5	3.4	0.94	0.08	37	4.5	4.0
29	2.4	4.5	5.4	5.3	---	5.1	3.5	0.92	0.13	23	15	4.0
30	2.4	4.5	5.5	6.3	---	5.3	3.0	0.84	0.06	8.5	16	3.9
31	2.4	---	5.7	6.0	---	4.8	---	0.71	---	5.1	6.6	---
TOTAL	76.0	113.5	166.2	166.8	143.7	149.1	129.2	54.23	8.88	968.20	2585.7	1342.0
MEAN	2.452	3.783	5.361	5.381	5.132	4.810	4.307	1.749	0.296	31.23	83.41	44.73
MAX	6.3	4.5	6.1	6.3	6.0	6.2	7.6	3.6	0.88	241	818	553
MIN	1.8	2.6	4.5	5.1	4.6	4.5	3.0	0.71	0.00	0.09	4.5	3.9
AC-FT	151	225	330	331	285	296	256	108	18	1920	5130	2660
CFSM	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.07	0.19	0.10
IN.	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.08	0.22	0.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2002, BY WATER YEAR (WY)

	MEAN	26.42	20.76	66.46	88.04	113.5	135.6	45.90	18.27	11.37	12.70	18.81	10.55
MAX	397	147	762	1031	965	698	350	154	41.3	41.1	83.4	44.7	
(WY)	1973	1960	1979	1993	1980	1978	1973	1973	1973	1973	2002	2002	
MIN	1.63	2.53	3.86	5.38	5.13	4.81	4.31	1.75	0.30	1.35	2.96	0.91	
(WY)	1957	1957	1957	2002	2002	2002	2002	2002	2002	1971	1997	1956	

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1951 - 2002
ANNUAL TOTAL	3936.23	5903.51	
ANNUAL MEAN	10.78	16.17	48.22
HIGHEST ANNUAL MEAN			201
LOWEST ANNUAL MEAN			5.22
HIGHEST DAILY MEAN	101	818	10900
LOWEST DAILY MEAN	0.84	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.89	0.09	0.09
ANNUAL RUNOFF (AC-FT)	7810	11710	34930
ANNUAL RUNOFF (CFSM)	0.025	0.037	0.11
ANNUAL RUNOFF (INCHES)	0.33	0.50	1.49
10 PERCENT EXCEEDS	21	13	69
50 PERCENT EXCEEDS	7.6	4.7	10
90 PERCENT EXCEEDS	1.9	0.70	2.6

e Estimated

GILA RIVER BASIN

09497500 SALT RIVER NEAR CHRYSOTILE, AZ

LOCATION--Lat 33° 47'53", long 110° 29'57", in sec. 25, T.5 N., R.17 E. (unsurveyed), Gila County, Hydrologic Unit 15060103, in San Carlos Indian Reservation, on left bank 1,200 ft upstream from bridge on U.S. Highway 60, 5.7 mi northeast of Chrysotile, 8 mi upstream from Cibecue Creek, and 33 mi downstream from confluence of Black and White Rivers.

DRAINAGE AREA--2,849 mi².

PERIOD OF RECORD--Sept. 1924 to current year (monthly discharge only July to Dec. 1954).

REVISED RECORDS--WSP 859: 1926-27, 1929-30, 1934, 1936. WSP 899: 1927, 1932, 1937, 1938(M). WSP 1313: 1925-26(M), 1929-30(M), 1935-36(M), 1944(M). WSP 1343: Drainage area.

GAGE--Water-stage recorder. Datum of gage is 3,354.57 ft above sea level.

REMARKS--Records good, except for estimated daily discharges, which are poor. Several diversions for irrigation above station of about 3,100 acres, one diversion into the basin (see record of Forestdale Creek diversion from Show Low Creek, near Show Low), and one diversion out of the basin (see record of Willow Creek diversion from Black River, near Morenci).

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 76,600 ft³/s Jan. 8, 1993, gage height, 18.33 ft, from rating curve extended above 52,000 ft³/s; minimum, 49 ft³/s July 6, 7, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD--Flood peak of 74,000 ft³/s occurred prior to 1924 and is believed to be the peak of the flood of Jan. 19, 1916, gage height, 18 ft, from floodmarks, from rating curve extended above 52,000 ft³/s.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 3,500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 5	0345	3,720	5.13
Aug. 6	0530	*6,810	*6.64
Sept. 11	0145	5,010	5.83

Minimum daily discharge, 67 ft³/s June 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	116	131	136	162	156	157	158	125	78	71	240	134
2	116	132	147	161	143	158	155	124	76	72	288	133
3	116	132	147	161	146	155	150	122	75	71	221	128
4	116	135	150	159	154	145	149	119	77	74	282	126
5	119	136	157	156	158	137	149	116	78	72	909	119
6	123	139	156	158	156	143	151	116	75	71	1660	117
7	129	141	151	147	156	150	161	116	76	72	e500	116
8	145	143	146	148	150	161	169	110	74	72	e400	117
9	159	140	148	157	151	163	175	108	73	77	e450	215
10	170	138	143	155	152	163	182	103	72	88	e300	494
11	164	137	142	155	149	161	182	100	72	85	e350	3070
12	153	136	152	157	144	161	171	97	74	126	e300	1210
13	144	135	158	157	146	160	164	108	73	117	e250	885
14	139	135	154	153	150	157	160	109	71	102	195	e500
15	136	135	140	153	152	158	156	100	72	280	167	e400
16	135	137	144	149	151	161	150	100	72	252	200	e300
17	135	138	150	151	152	160	149	98	72	292	211	e280
18	131	138	151	155	152	159	149	95	71	199	161	e250
19	130	138	151	152	152	159	144	95	72	274	149	e220
20	128	138	149	150	156	155	138	94	71	176	159	e210
21	128	138	156	142	156	150	135	92	68	173	238	e200
22	128	138	160	138	154	148	135	89	70	153	210	e190
23	128	138	160	141	154	149	135	88	69	223	180	e180
24	128	137	154	147	152	150	132	87	67	149	169	e170
25	128	147	151	152	155	150	128	90	70	331	152	156
26	128	145	155	141	156	151	128	88	71	396	136	147
27	130	153	147	139	156	149	125	88	69	537	125	139
28	135	145	139	147	156	149	126	87	71	916	116	137
29	132	135	146	160	---	155	126	89	70	645	116	135
30	133	135	156	168	---	161	129	86	68	425	123	135
31	133	---	164	164	---	160	---	82	---	321	136	---
TOTAL	4135	4145	4660	4735	4265	4795	4461	3121	2167	6912	9093	10613
MEAN	133.4	138.2	150.3	152.7	152.3	154.7	148.7	100.7	72.23	223.0	293.3	353.8
MAX	170	153	164	168	158	163	182	125	78	916	1660	3070
MIN	116	131	136	138	143	137	125	82	67	71	116	116
AC-FT	8200	8220	9240	9390	8460	9510	8850	6190	4300	13710	18040	21050
CFSM	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.03	0.08	0.10	0.12
IN.	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.04	0.03	0.09	0.12	0.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 2002, BY WATER YEAR (WY)

	MEAN	333.1	279.3	484.8	627.1	874.5	1454	1677	894.7	307.0	221.3	400.2	335.1
MAX	3777	1300	3983	7939	6181	6029	4850	5070	1185	547	1249	1181	
(WY)	1984	1979	1966	1993	1980	1978	1979	1973	1941	1941	1967	1946	
MIN	79.1	112	113	130	145	155	149	101	72.2	91.0	135	68.5	
(WY)	1957	1957	1957	1954	1964	2002	2002	2002	2002	1963	1962	1956	

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1924 - 2002
ANNUAL TOTAL	154246	63102	
ANNUAL MEAN	422.6	172.9	655.8
HIGHEST ANNUAL MEAN			2091
LOWEST ANNUAL MEAN			160
HIGHEST DAILY MEAN	2040	3070	47400
LOWEST DAILY MEAN	111	67	55
ANNUAL SEVEN-DAY MINIMUM	115	69	56
ANNUAL RUNOFF (AC-FT)	305900	125200	475100
ANNUAL RUNOFF (CFSM)	0.15	0.061	0.23
ANNUAL RUNOFF (INCHES)	2.01	0.82	3.13
10 PERCENT EXCEEDS	1210	217	1540
50 PERCENT EXCEEDS	213	147	256
90 PERCENT EXCEEDS	132	77	130

e Estimated

GILA RIVER BASIN

09497800 CIBECUE CREEK NEAR CHRYSOTILE, AZ

LOCATION--Lat 33° 50'35", long 110° 33'25", in E_{1/2} sec. 8, T.5 N., R.17 E. (unsurveyed), Gila County, Hydrologic Unit 15060103, in Fort Apache Indian Reservation, on right bank 0.5 mi upstream from mouth and 7 mi north of Chrysotile.

DRAINAGE AREA--295 mi².

PERIOD OF RECORD--May 1959 to current year.

GAGE--Water-stage recorder. Elevation of gage is 3,200 ft above sea level, from topographic map.

REMARKS-- Records good, except for estimated daily discharges, which are poor. Small diversions for irrigation in the vicinity of the village of Cibecue.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 22,200 ft³/s Sept. 2, 1977, gage height, 17.3 ft, on basis of slope-area measurement of peak flow; minimum daily, 4.1 ft³/s Aug. 17-19, 1968.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 1,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 8.....	2050	2,430	5.64	July 18.....	0150	1,830	5.09
July 16.....	0520	1,300	4.50	Sept. 8.....	2330	1,010	4.13
July 16.....	1800	1,470	4.71	Sept. 10.....	1700	*13,500	*12.59

Minimum daily discharge, 7.0 ft³/s June 21-24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	12	14	14	12	12	12	8.4	8.1	7.2	e12	e15
2	13	13	14	14	15	12	12	8.4	7.8	7.3	e20	e15
3	13	13	14	14	14	12	12	8.4	7.8	7.4	e18	e15
4	14	13	16	14	14	12	11	8.4	7.9	7.3	e70	e12
5	14	13	21	13	13	13	11	8.2	7.5	7.1	e185	e12
6	14	14	15	14	13	13	11	7.9	7.5	7.2	e80	e12
7	15	13	15	14	13	13	14	7.8	7.4	7.2	e30	e12
8	193	13	14	13	13	14	13	7.7	7.3	7.4	20	e100
9	97	13	14	13	13	13	12	7.5	7.3	7.5	38	e100
10	15	13	14	14	12	13	12	7.5	7.3	8.2	18	e875
11	13	13	14	14	13	12	11	7.5	7.3	16	17	e60
12	13	13	18	13	13	12	10	7.5	7.3	13	17	e15
13	12	13	13	13	13	12	10	7.5	7.3	13	16	e15
14	12	13	13	13	13	12	10	7.5	7.3	12	16	e12
15	12	13	17	14	13	12	9.9	7.5	7.3	51	18	e12
16	12	13	14	14	13	12	10	7.5	7.2	240	20	e12
17	12	13	14	14	13	13	9.9	7.5	7.2	20	39	e12
18	12	13	14	14	13	13	9.4	7.5	7.1	151	e18	e11
19	12	13	14	13	13	13	9.4	7.5	7.2	47	e15	e11
20	12	13	14	13	13	12	9.2	7.3	7.1	47	e15	e11
21	12	13	15	13	12	12	9.2	7.3	7.0	14	e65	e10
22	12	13	15	14	12	12	9.4	7.4	7.0	12	e20	e10
23	12	13	14	14	12	12	9.0	7.3	7.0	46	e18	e10
24	12	13	14	12	12	12	8.6	7.8	7.0	37	e15	e10
25	12	14	13	13	12	13	8.6	9.1	7.1	15	e15	9.9
26	12	15	13	14	12	13	8.4	8.8	7.3	24	e12	9.8
27	12	14	15	15	12	12	8.4	8.4	7.3	40	e12	9.6
28	12	13	14	14	12	12	8.6	8.5	7.2	27	e15	9.7
29	12	14	14	13	---	13	8.6	8.5	7.1	e30	46	9.5
30	12	14	14	15	---	13	8.5	8.4	7.2	e20	32	9.7
31	12	---	13	13	---	12	---	8.4	---	e15	e20	---
TOTAL	655	396	450	422	358	386	306.1	244.9	219.4	963.8	952	1437.2
MEAN	21.13	13.20	14.52	13.61	12.79	12.45	10.20	7.900	7.313	31.09	30.71	47.91
MAX	193	15	21	15	15	14	14	9.1	8.1	240	185	875
MIN	12	12	13	12	12	12	8.4	7.3	7.0	7.1	12	9.5
AC-FT	1300	785	893	837	710	766	607	486	435	1910	1890	2850
CFSM	0.07	0.04	0.05	0.05	0.04	0.04	0.03	0.03	0.02	0.11	0.10	0.16
IN.	0.08	0.05	0.06	0.05	0.05	0.05	0.04	0.03	0.03	0.12	0.12	0.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2002, BY WATER YEAR (WY)

	MEAN	33.82	28.10	52.54	61.85	81.27	102.4	55.19	24.18	14.86	25.81	37.72	31.35
MAX	277	186	368	870	703	477	274	131	39.7	78.7	106	93.1	
(WY)	1973	1979	1966	1993	1993	1978	1973	1973	1979	1959	1963	1996	
MIN	11.0	9.14	10.6	11.3	11.0	12.3	10.2	5.64	4.98	6.55	12.8	8.71	
(WY)	1978	1978	1978	1964	1964	1971	2002	1972	1961	1963	1962	1959	

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1959 - 2002
ANNUAL TOTAL	7493.4	6790.4	45.47
ANNUAL MEAN	20.53	18.60	182
HIGHEST ANNUAL MEAN			1993
LOWEST ANNUAL MEAN			16.2
HIGHEST DAILY MEAN	193	875	4930
LOWEST DAILY MEAN	9.3	7.0	4.1
ANNUAL SEVEN-DAY MINIMUM	9.4	7.1	4.6
ANNUAL RUNOFF (AC-FT)	14860	13470	32940
ANNUAL RUNOFF (CFSM)	0.070	0.063	0.15
ANNUAL RUNOFF (INCHES)	0.94	0.86	2.09
10 PERCENT EXCEEDS	36	18	83
50 PERCENT EXCEEDS	15	13	20
90 PERCENT EXCEEDS	11	7.5	10

e Estimated

GILA RIVER BASIN

09497980 CHERRY CREEK NEAR GLOBE, AZ

LOCATION.--Lat 33° 49'40", long 110° 51'20", in SW_{1/4} sec. 30, T.6 N., R.15 E. (unsurveyed), Gila County, Hydrologic Unit 15060103, in Tonto National Forest, on right bank 0.2 mi upstream from Devils Chasm, 13 mi upstream from mouth, and 30 mi north of Globe.

DRAINAGE AREA.--200 mi².

PERIOD OF RECORD.--May 1965 to current year (monthly discharge only Feb. to Sept. 1979).

GAGE.--Water-stage recorder. Elevation of gage is 3,200 ft above sea level, from topographic map. Prior to Jan. 17, 1979, at site 125 ft downstream at datum 2.95 ft lower.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft³/s Jan. 17, 1979, gage height, unknown, from slope-area measurement of peak flow; minimum daily, 2.4 ft³/s Sept. 17, 22, 25, and 29, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 18.....	0945	*24	*2.54

Minimum daily discharge, 2.0 ft³/s July 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	4.1	4.5	4.8	4.8	4.8	4.3	3.5	2.4	2.1	2.6	2.7
2	4.0	4.2	4.5	4.8	4.9	4.5	4.3	3.6	2.4	2.0	2.7	3.1
3	4.0	4.2	4.5	4.8	4.8	4.5	4.2	3.6	2.4	2.2	3.9	2.9
4	4.2	4.2	5.2	4.8	4.8	4.6	4.2	3.5	2.5	2.3	3.8	2.7
5	4.1	4.4	5.3	4.8	4.8	4.8	4.1	3.4	2.6	2.3	3.2	2.7
6	4.1	4.4	4.6	4.8	4.8	4.6	4.6	3.3	2.5	2.2	4.9	2.7
7	4.4	4.2	4.6	4.8	4.8	4.8	5.0	3.2	2.5	2.2	3.1	2.7
8	4.7	4.2	4.6	4.8	4.8	6.2	4.4	3.2	2.4	2.1	2.9	3.2
9	4.5	4.2	4.6	4.8	4.8	4.9	4.2	3.1	2.3	2.3	2.8	3.2
10	4.2	4.2	4.7	4.8	4.8	4.6	4.1	3.1	2.3	2.8	2.7	3.2
11	4.1	4.2	5.1	4.8	4.8	4.6	4.0	3.0	2.4	2.6	2.7	3.6
12	4.0	4.2	5.3	4.8	4.8	4.5	3.9	3.0	2.4	2.6	2.7	3.1
13	4.0	4.2	4.9	4.8	4.8	4.5	3.8	3.0	2.3	3.0	2.6	2.9
14	4.0	4.2	4.8	4.8	4.8	4.5	3.9	3.0	2.3	2.6	2.6	2.8
15	4.0	4.2	4.9	4.8	4.8	4.5	3.9	2.9	2.3	2.8	2.5	2.8
16	3.9	4.2	4.8	4.8	4.8	4.5	4.1	2.9	2.2	3.1	2.6	2.8
17	4.0	4.2	4.8	4.8	4.8	4.6	4.0	2.9	2.2	3.1	2.6	2.7
18	3.9	4.3	4.8	4.8	4.8	4.6	3.9	2.8	2.2	10	2.6	2.7
19	3.9	4.2	4.8	4.8	4.8	4.5	3.8	2.8	2.2	5.5	2.6	2.7
20	4.0	4.3	4.8	4.8	4.8	4.5	3.8	2.8	2.2	3.7	2.7	2.7
21	3.9	4.3	4.8	4.8	4.7	4.5	3.8	2.8	2.1	3.1	2.6	2.7
22	4.1	4.3	4.8	4.8	4.5	4.5	3.7	2.8	2.1	2.9	2.6	2.7
23	4.1	4.2	4.8	4.8	4.8	4.4	3.7	2.9	2.1	2.8	2.6	2.6
24	4.1	4.2	4.8	4.8	4.8	4.4	3.6	2.8	2.2	2.8	2.5	2.6
25	4.0	4.6	4.8	4.8	4.8	4.5	3.6	2.8	2.2	3.3	2.6	2.6
26	4.0	4.5	4.8	4.8	4.6	4.4	3.5	2.8	2.2	3.1	2.5	2.6
27	4.1	4.5	4.8	4.8	4.5	4.3	3.8	2.8	2.2	2.8	2.5	2.6
28	4.1	4.5	4.8	4.8	4.8	4.3	3.9	2.7	2.2	2.7	2.6	2.6
29	4.0	4.5	4.8	4.8	---	4.7	3.7	2.7	2.2	2.7	2.8	2.7
30	4.1	4.5	4.8	5.0	---	4.8	3.6	2.6	2.2	2.6	2.8	2.7
31	4.1	---	4.8	5.1	---	4.4	---	2.5	---	2.6	2.6	---
TOTAL	126.4	128.6	148.9	149.3	133.6	142.8	119.4	92.8	68.7	92.9	87.5	84.3
MEAN	4.077	4.287	4.803	4.816	4.771	4.606	3.980	2.994	2.290	2.997	2.823	2.810
MAX	4.7	4.6	5.3	5.1	4.9	6.2	5.0	3.6	2.6	10	4.9	3.6
MIN	3.8	4.1	4.5	4.8	4.5	4.3	3.5	2.5	2.1	2.0	2.5	2.6
AC-FT	251	255	295	296	265	283	237	184	136	184	174	167
CFSM	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01
IN.	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.02	0.01	0.02	0.02	0.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2002, BY WATER YEAR (WY)

MEAN	21.30	19.57	58.42	70.79	85.71	88.77	28.83	11.46	7.028	9.346	16.01	13.95
MAX	296	101	537	652	568	423	195	65.7	18.0	28.1	84.7	151
(WY)	1973	1973	1966	1993	1980	1978	1973	1973	1973	1999	1988	1970
MIN	4.08	4.29	4.80	4.82	4.77	4.61	3.98	2.99	2.29	2.99	2.82	2.81
(WY)	2002	2002	1978	2002	2002	2002	2002	2002	2002	2000	2002	2002

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1965 - 2002
ANNUAL TOTAL	3764.8	1375.2	
ANNUAL MEAN	10.31	3.768	33.77
HIGHEST ANNUAL MEAN			130
LOWEST ANNUAL MEAN			3.77
HIGHEST DAILY MEAN	170	Mar 11	13000
LOWEST DAILY MEAN	3.0	Jul 21	2.0
ANNUAL SEVEN-DAY MINIMUM	3.1	Jul 18	2.2
ANNUAL RUNOFF (AC-FT)	7470	2730	24460
ANNUAL RUNOFF (CFSM)	0.052	0.019	0.17
ANNUAL RUNOFF (INCHES)	0.70	0.26	2.29
10 PERCENT EXCEEDS	19	4.8	56
50 PERCENT EXCEEDS	4.9	4.0	8.1
90 PERCENT EXCEEDS	3.8	2.5	4.9

GILA RIVER BASIN

09498400 PINAL CREEK AT INSPIRATION DAM, NEAR GLOBE, AZ

LOCATION--Lat 33° 34'23", long 110° 54'02", in NE1/4NW1/4SE1/4 sec. 26, T.3 N., R.14 E., Gila County, Hydrologic Unit 15060103, in Tonto National Forest, on right bank 7 ft upstream from Inspiration Dam, 3.8 mi upstream from mouth, and 14 mi northwest of Globe.

DRAINAGE AREA--195 mi², of which about 33 mi² is partly or entirely noncontributing due to mining operations (1988).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD--July 1980 to current year.

GAGE--Water-stage recorder. Elevation of gage is 2,740 ft above sea level, from topographic map. Prior to Feb. 12, 1991, at datum 1.0 ft higher.

REMARKS--No estimated daily discharge. Records fair. Since Nov. 20, 1999, base flows may be affected by discharges from a ground-water treatment plant, located about 5 mi upstream from the gage.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 5,700 ft³/s Jan. 11, 1993, gage height, 8.50 ft, on basis of slope-area measurement of peak flow; minimum daily, 0.64 ft³/s July 1, 1999.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 200 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 6.....	2125	849	3.38
Sept. 10.....	1500	*2,520	*5.12

Minimum daily discharge, 1.4 ft³/s Aug. 15, Sept. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	7.4	6.9	6.7	6.2	5.5	4.9	4.0	2.8	1.7	1.7	1.5
2	5.1	7.1	6.7	6.7	6.1	5.5	4.9	4.1	2.7	1.7	1.7	1.4
3	5.0	7.3	6.7	6.6	6.2	5.6	4.8	4.1	2.7	1.7	2.1	1.5
4	4.9	7.4	7.2	6.6	6.1	5.6	4.9	4.0	2.5	1.9	2.2	1.7
5	4.9	7.5	6.6	6.5	6.0	5.6	4.9	4.0	2.3	1.6	2.0	1.8
6	66	7.5	6.6	6.5	5.9	5.6	4.9	3.9	2.3	1.8	2.0	1.8
7	16	7.7	6.8	6.3	6.0	5.6	5.0	3.9	2.5	1.9	2.0	2.0
8	6.8	7.6	6.9	6.0	6.5	5.8	4.9	3.5	2.5	1.8	1.9	2.3
9	6.6	7.2	6.8	6.4	6.0	5.5	5.0	4.0	2.4	1.9	1.8	2.3
10	6.7	6.5	6.7	6.6	5.6	5.4	4.8	3.7	2.3	2.1	1.7	202
11	6.2	6.3	6.8	6.9	5.6	5.4	4.7	4.1	2.3	2.3	1.6	7.8
12	6.3	6.3	6.7	6.8	5.6	5.6	4.5	3.8	2.3	1.8	1.7	4.6
13	6.3	6.7	6.9	6.8	5.3	5.2	4.5	4.0	2.5	1.7	1.9	4.3
14	6.5	6.6	6.9	6.7	5.7	5.4	4.6	4.0	2.3	1.6	1.7	3.9
15	6.4	6.4	7.2	6.7	6.0	5.4	4.7	4.0	2.3	1.9	1.4	3.6
16	6.3	6.2	7.2	6.8	6.0	5.4	4.9	3.7	2.0	1.9	1.8	3.5
17	6.9	6.3	7.0	6.9	5.6	5.4	4.5	3.7	1.8	2.0	1.9	4.0
18	6.9	6.4	7.1	7.1	5.6	5.4	4.6	3.9	1.9	1.9	1.8	3.8
19	6.9	6.6	6.8	6.8	5.5	5.3	4.3	3.7	2.1	1.7	1.7	3.8
20	6.8	6.9	6.8	6.5	5.5	5.3	4.6	3.6	2.2	1.8	1.7	3.5
21	6.9	6.8	6.7	6.5	5.5	5.3	4.8	3.5	1.9	1.7	1.8	3.0
22	7.0	6.5	6.8	6.5	5.5	5.3	4.6	3.5	2.8	1.7	1.7	3.1
23	7.1	6.4	6.5	6.4	5.7	5.3	4.9	3.6	2.0	1.7	1.7	3.0
24	7.1	6.2	7.1	5.9	5.8	5.4	4.5	3.3	1.8	1.7	1.7	3.2
25	7.0	6.6	7.2	6.3	5.5	5.2	4.4	3.2	1.8	1.8	1.7	3.1
26	7.3	6.5	7.1	6.5	5.3	5.3	4.2	3.7	1.8	1.9	2.4	2.7
27	7.2	6.5	6.9	6.5	5.2	5.0	4.2	3.8	1.7	1.8	1.5	3.1
28	6.6	6.5	7.1	6.5	5.5	4.9	4.3	3.0	1.6	1.8	1.8	3.1
29	7.1	6.6	7.3	6.4	---	5.0	4.2	3.2	1.8	1.7	2.2	3.0
30	6.4	6.7	7.3	6.6	---	5.0	4.1	3.0	1.8	1.8	1.7	3.2
31	6.3	---	7.3	6.4	---	5.0	---	3.1	---	1.7	1.6	---
TOTAL	268.5	203.2	214.6	203.4	161.0	166.2	139.1	114.6	65.7	56.0	56.1	291.6
MEAN	8.661	6.773	6.923	6.561	5.750	5.361	4.637	3.697	2.190	1.806	1.810	9.720
MAX	66	7.7	7.3	7.1	6.5	5.8	5.0	4.1	2.8	2.3	2.4	202
MIN	4.9	6.2	6.5	5.9	5.2	4.9	4.1	3.0	1.6	1.6	1.4	1.4
AC-FT	533	403	426	403	319	330	276	227	130	111	111	578
CFSM	0.04	0.03	0.04	0.03	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.05
IN.	0.05	0.04	0.04	0.04	0.03	0.03	0.03	0.02	0.01	0.01	0.01	0.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2002, BY WATER YEAR (WY)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
MEAN	9.636	7.807	10.87	30.44	28.58	15.68	9.787	8.036	6.306	7.769	8.546	7.484	3.8	13.0	58.4	440	406	67.3	30.1	19.6	16.2	17.1	28.4	16.4
MAX	38	13	58	440	406	67	30	19	16	17	28	16	3	13	58	440	406	67	30	19	16	17	28	16
(WY)	1984	2001	1985	1993	1993	1992	1993	1993	1993	1981	1990	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
MIN	2.56	3.72	3.37	3.20	3.44	3.55	3.46	2.38	1.07	1.81	1.81	2.81	0.64	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	
(WY)	2000	1999	1999	1999	1999	1999	1999	1999	1999	2002	2002	1989	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1980 - 2002
ANNUAL TOTAL	2188.7	1940.0	
ANNUAL MEAN	5.996	5.315	12.47
HIGHEST ANNUAL MEAN			84.2
HIGHEST ANNUAL MEAN			3.76
HIGHEST DAILY MEAN	66	202	3300
LOWEST DAILY MEAN	2.6	1.4	0.64
ANNUAL SEVEN-DAY MINIMUM	3.2	1.6	0.72
ANNUAL RUNOFF (AC-FT)	4340	3850	9030
ANNUAL RUNOFF (CFSM)	0.031	0.027	0.064
ANNUAL RUNOFF (INCHES)	0.42	0.37	0.87
10 PERCENT EXCEEDS	7.7	6.9	12
50 PERCENT EXCEEDS	6.3	5.0	7.2
90 PERCENT EXCEEDS	3.9	1.8	3.9

GILA RIVER BASIN
09498400 PINAL CREEK AT INSPIRATION DAM, NEAR GLOBE, AZ—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Nov. 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TUR-BIDITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATURATION) (00301)	PH WATER WHOLE FIELD (STANDARD) (00400)	SPE-CIFIC CON-DUCTANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	HARD-NESS TOTAL (MG/L CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
DEC 20...	1035	6.9	.78	691	10.4	99	7.7	2060	12.0	8.4	1100	1200	363
MAR 29...	1130	4.9	.51	686	8.5	100	7.6	2140	19.5	17.7	1100	1200	371
JUN 11...	1250	2.4	.57	686	7.1	97	7.6	2190	33.0	25.4	1200	1200	377
SEP 06...	1210	2.0	.97	687	7.3	101	7.0	2250	30.5	25.8	1200	1200	389

Date	CALCIUM TOTAL RECOVERABLE (MG/L AS CA) (00916)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, TOTAL RECOVERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORPTION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT DIS TOT IT FIELD CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD HCO3 AS (00453)	CAR-BONATE WATER DIS IT FIELD CO3 (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)
DEC 20...	368	64.0	64.0	4.50	.7	56.0	48	58	<1	56.0	1.1	1210	<1c1
MAR 29...	370	60.0	59.0	4.40	.8	61.0	46	56	<1	54.0	1.0	1200	3
JUN 11...	401	63.0	66.0	4.20	.9	69.0	45	55	<1	55.0	1.0	1250	<1
SEP 06...	387	63.0	64.0	5.30	.8	65.0	45	55	<1	59.0	1.0	1250	<1

Date	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, RESIDUE AT 180 DEG. C (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	E COLI, MTEC MF WATER (COL/100 ML) (31633)	COLI-FORM, FECAL, UM-MF (COLS./100 ML) (31625)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)
DEC 20...	2.43	E1960c1	1780	1.1	.02	.03	<.020	1.1	<.02	8	E7k	E2k	<1
MAR 29...	2.65	1950	1780	<.20	.01	.01	<.020	--	<.02	<5	E4k	E6k	<1
JUN 11...	2.38	1750	1850	<.20	.02	.03	<.020	--	<.02	<5	E8k	35	<1
SEP 06...	2.82	2070	1860	<.20	.01	.01	<.020	--	<.02	<5	100	--	<1

Date	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	BORON, TOTAL RECOVERABLE (UG/L AS B) (01022)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)
DEC 20...	<1	<2	<2	9.4	9.7	<1	<1	53	49	<.5	<.5	<1	<1
MAR 29...	<1	<1	<1	8.7	9.0	<1	<1	48	50	<.5	<.5	<1	<1
JUN 11...	<1	<1	<1	11.0	11.0	<1	<1	53	52	<.5	<.5	<1	<1
SEP 06...	<1	2	2	12.0	13.0	<1	<1	55	60	<.5	<.5	<1	<1

09498400 PINAL CREEK AT INSPIRATION DAM, NEAR GLOBE, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)
DEC 20...	<2	<2	<2	100	<2	<2	240	314	<.10	<.1	5	4	<2
MAR 29...	<2	2	2	48	<2	<2	196	243	<.10	<.1	3	4	<1
JUN 11...	<2	2	<2	25	<2	<2	225	236	<.10	<.1	4	4	<1
SEP 06...	2	<2	2	15	<2	<2	175	186	<.10	<.1	3	4	<1

Date	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	STRON- TIUM, TOTAL RECOV- ERABLE (UG/L AS SR) (01082)	THAL- LIUM, DIS- SOLVED (UG/L AS TL) (01057)	THAL- LIUM, TOTAL RECOV- ERABLE (UG/L AS TL) (01059)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)
DEC 20...	<4	<1	<1	1180	<2	<2	23	10	1.0	.02
MAR 29...	<1	<1	<1	1130	<2	<2	7	4	1.0	.01
JUN 11...	<1	<1	<1	1170	<2	<2	7	5	4.0	.03
SEP 06...	1	<1	<1	1200	<2	<2	17	2	2.0	.01

Remark codes used in this report:

- < -- Less than
- E -- Estimated value

Value qualifier codes used in this report:

- c -- See laboratory comment
- k -- Counts outside acceptable range
- l -- Sample lab preparation problem

GILA RIVER BASIN

09498400 PINAL CREEK AT INSPIRATION DAM, NEAR GLOBE, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Water-quality measurements in the following table were made as part of the ADEQ Fixed-Station Network Program. The following analyses are quality-assurance samples processed during the 2002 sampling period and are defined in the introductory text section titled "Water-Quality Control Data".

Date	Time	Sample type	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPE-CIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA NO2+NO3 TOTAL (MG/L AS N) (00610)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ALUMINUM, DIS-SOLVED (UG/L AS AL) (01106)
JUN 11...	1255	2	5.8	1	30.0	.04	<.03	<.1	.20	.02	<.020	<.02	<3
Date		BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYLLIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM, DIS-SOLVED (UG/L AS CD) (01025)	CHROMIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)		
JUN 11...	<.5	<1	<.5	<1	<2	<2	<2	<1	<1	<2			

Remark codes used in this report:

< -- Less than

**09498500 SALT RIVER NEAR ROOSEVELT, AZ
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)**

LOCATION.--Lat 33° 37' 10", long 110° 55' 15", in SE1/4NE1/4 sec. 9, T.3 N., R.14 E. (unsurveyed), Gila County, Hydrologic Unit 15060103, in Tonto National Forest on left bank 100 ft downstream from bridge on State Highway 288, 0.3 mi downstream from Pinal Creek, 1 mi upstream from diversion dam for power canal, 14 mi east of village of Roosevelt, and 17 mi upstream from Roosevelt Dam.

DRAINAGE AREA.--4,306 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jan. 1913 to current year (monthly discharge only Jan. to Sept. 1913, published in WSP 1313).

REVISED RECORDS.--WSP 1049: 1914, 1916, 1918--19, 1926. WSP 1343: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,177.14 ft above sea level. Prior to 1925, nonrecording gage at diversion dam about 1 mi downstream at different datum. Nonrecording gage at present site and datum 1925 to Jan. 17, 1935. May 20, 1955, to July 30, 1959, supplementary water-stage recorder at diversion dam.

REMARKS.--Records good, except for estimated daily discharges, which are poor. Several small diversions for irrigation of about 4,000 acres above station and two trans basin diversions above station, one into basin from Show Low Creek and one out of basin to Willow Creek. Records show inflow to Roosevelt Lake. Tonto Creek also contributes to Roosevelt Lake; see records elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 143,000 ft³/s Jan. 8, 1993, gage height, 30.09 ft, from rating curve extended above 108,000 ft³/s; minimum discharge, 59 ft³/s all or part of each day, July 1--4, 7--12, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--A discharge of about 42 ft³/s was reported Aug. 5, 1911.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 6.....	1715	6,300	12.34
Sept. 11.....	0305	*9,280	*13.30

Minimum daily discharge, 65 ft³/s June 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	127	137	163	185	190	179	178	134	93	68	321	e160
2	131	139	159	184	179	178	170	136	91	67	320	e150
3	132	139	170	183	169	180	167	134	88	71	378	e150
4	133	143	182	180	167	177	161	133	87	73	340	144
5	134	148	191	179	172	172	162	129	86	71	868	142
6	141	155	194	177	177	164	164	123	87	70	1660	135
7	166	161	189	178	174	165	172	119	84	67	873	278
8	157	164	181	172	177	184	183	119	81	66	506	203
9	353	165	176	172	170	191	190	116	78	68	427	447
10	229	167	177	181	170	193	197	111	76	73	459	774
11	196	168	181	181	172	195	204	107	74	79	357	3370
12	187	164	185	182	172	190	207	106	73	86	417	2620
13	172	164	188	184	167	188	196	105	73	100	335	1160
14	163	164	188	184	166	186	188	106	74	114	263	761
15	156	161	189	183	171	179	179	111	71	102	224	543
16	151	161	177	185	174	181	177	108	69	319	199	432
17	150	163	173	180	173	188	171	106	69	460	244	361
18	146	164	179	183	172	189	164	106	69	432	255	307
19	144	164	180	185	174	187	161	106	68	391	192	271
20	141	164	180	180	174	184	156	105	68	419	174	256
21	139	164	176	179	175	181	150	102	68	243	204	242
22	137	164	184	172	173	174	147	102	68	208	280	219
23	139	163	186	165	176	170	145	101	66	186	233	205
24	141	161	188	166	176	166	141	99	66	256	205	194
25	141	161	181	168	174	168	139	101	65	200	189	181
26	137	168	173	178	175	170	135	101	66	496	170	171
27	137	169	178	165	177	170	131	102	70	584	156	161
28	138	171	170	163	178	166	133	98	70	507	151	155
29	141	171	161	169	---	166	134	98	69	1030	149	151
30	140	164	169	185	---	177	133	98	70	577	242	146
31	137	---	179	203	---	183	---	97	---	420	195	---
TOTAL	4836	4811	5547	5531	4864	5541	4935	3419	2237	7903	10986	14489
MEAN	156.0	160.4	178.9	178.4	173.7	178.7	164.5	110.3	74.57	254.9	354.4	483.0
MAX	353	171	194	203	190	195	207	136	93	1030	1660	3370
MIN	127	137	159	163	166	164	131	97	65	66	149	135
MED	141	164	180	180	174	179	164	106	71	186	255	212
AC-FT	9590	9540	11000	10970	9650	10990	9790	6780	4440	15680	21790	28740
CFSM	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.06	0.08	0.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2002, BY WATER YEAR (WY)

	MEAN	429.8	383.5	752.4	1077	1373	1991	1979	1020	360.9	327.3	578.8	447.1
MAX	4832	2150	6327	15990	9072	10390	6281	5933	1365	3276	3607	1852	
(WY)	1984	1920	1966	1916	1980	1978	1979	1973	1941	1919	1921	1923	
MIN	85.5	122	127	161	168	179	164	110	74.6	78.3	151	77.9	
(WY)	1957	1957	1957	1964	1964	2002	2002	2002	2002	1963	1962	1956	

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1914 - 2002
ANNUAL TOTAL	178982	75099	
ANNUAL MEAN	490.4	205.8	890.9
HIGHEST ANNUAL MEAN			3252
LOWEST ANNUAL MEAN			191
HIGHEST DAILY MEAN	2480	Apr 7	3370
LOWEST DAILY MEAN	119	Jul 3	65
ANNUAL SEVEN-DAY MINIMUM	128	Sep 27	67
ANNUAL RUNOFF (AC-FT)	355000		149000
ANNUAL RUNOFF (CFSM)	0.11		0.048
10 PERCENT EXCEEDS	1470		279
50 PERCENT EXCEEDS	239		170
90 PERCENT EXCEEDS	141		86

e Estimated

GILA RIVER BASIN
09498500 SALT RIVER NEAR ROOSEVELT, AZ—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Apr. 1958 to Sept. 1965 and Jan.1976 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Dec. 1996 to Jan. 1998.

WATER TEMPERATURE: Apr. 1958 to Sept. 1965 and Dec.1996 to Jan. 1998.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TUR-BID-ITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT (STAND-SATUR-ATION) (00301)	PH WATER FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
DEC 19...	1255	9	187	8.3	707	12.2	105	8.4	3790	14.5	5.5	140	350
MAR 28...	1320	9	166	46	700	9.3	103	8.5	4130	30.0	15.3	140	330
JUN 12...	1005	9	75	19	697	6.8	88	8.3	6390	32.5	23.1	220	370
JUN 12...	1015	7	75	18	--	--	--	8.3	6380	--	--	200	350
JUL 17...	0555	9	449	360	700	6.3	86	8.1	6060	29.5	25.5	180	380

Date	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA) (00916)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT DIS TOT IT (MG/L AS CACO3) (39086)	BICAR-BONATE WATER DIS IT (MG/L AS HCO3) (00453)	CAR-BONATE WATER DIS IT (MG/L AS CO3) (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
DEC 19...	85.0	87.0	33.0	33.0	14.0	14	600	209	251	4	990	.3	140
MAR 28...	82.0	88.0	31.0	32.0	14.0	17	700	188	216	7	1080	.3	140
JUN 12...	76.0	81.0	43.0	44.0	23.0	26	1150	150	177	3	1900	.3	170
JUN 12...	72.0	82.0	41.0	41.0	23.0	27	1140	152	179	3	1910	.3	170
JUL 17...	84.0	132	41.0	47.0	23.0	24	1090	199	234	4	1780	.2	140

Date	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDEDED (MG/L) (00530)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	E COLI, MTEC MF (COL/100 ML) (31633)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)
DEC 19...	E6c1	2.71	E2110c1	1990	<.20	.02	.03	<.020	--	<.02	23	E2k	E2k
MAR 28...	40	3.11	2290	2160	<.20	.01	.01	<.020	--	<.02	18	E6k	E6k
JUN 12...	30	4.90	3600	3450	.30	.02	.03	<.020	.28	<.02	16	E4k	E7k
JUN 12...	20	4.88	3590	3450	<.20	.03	.04	<.020	--	<.02	19	<1k	E6k
JUL 17...	369	4.66	3430	3280	1.2	.03	.04	<.020	1.2	.13	18	>2700k	>2000k

Date	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)
DEC 19...	<1	<1	7	7	56.0	55.0	<1	<1	330	329	<.5	<.5	<1
MAR 28...	<1	<1	8	8	56.0	63.0	<1	<1	365	371	<.5	<.5	<1
JUN 12...	<1	<1	10	11	84.0	100	<1	<1	586	616	<.5	<.5	<1
JUN 12...	<1	<1	10	15	84.0	100	<1	<1	574	623	<.5	<.5	<1
JUL 17...	<1	<1	15	15	110	150	<1	<2	562	589	<.5	<1.0	<1

09498500 SALT RIVER NEAR ROOSEVELT, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MERCURY, DIS-SOLVED (UG/L AS HG) (71890)	MERCURY, TOTAL RECOVERABLE (UG/L AS HG) (71900)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)
DEC 19...	<1	<2	<2	3	188	<2	<2	17	23	<.10	<.1	<1	<1
MAR 28...	<1	<2	<2	<2	590	<2	<2	9	40	<.10	<.1	<1	2
JUN 12...	<1	<2	<2	<2	342	<2	<4	7	36	<.10	<.1	<1	<2
JUN 12...	<1	<2	<2	<2	342	<2	<2	7	33	<.10	<.1	<1	1
JUL 17...	6	<2	7	6	3910	<2	<4	2	282	<.10	<.1	<1	10

Date	SELENIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	STRONTIUM, TOTAL RECOVERABLE (UG/L AS SR) (01082)	THALIUM, DIS-SOLVED (UG/L AS TL) (01057)	THALIUM, TOTAL (UG/L AS TL) (01059)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DIS-SUSPENDED (T/DAY) (80155)
DEC 19...	<1	<1	<1	<1	1120	<2	<2	24	8	19	9.6
MAR 28...	1	1	<1	<1	1140	<2	<2	13	3	50	22.4
JUN 12...	<1	<1	<1	<1	1490	<2	<2	9	<4	101	20.5
JUN 12...	<1	<1	<1	<1	1510	<2	<2	8	<4	28	5.7
JUL 17...	1	2	<1	<2	1610	<2	<2	4	31	644	781

Remark codes used in this report:

- < -- Less than
- > -- Greater than
- E -- Estimated value

Value qualifier codes used in this report:

- c -- See laboratory comment
- k -- Counts outside acceptable range
- l -- Sample lab preparation problem

GILA RIVER BASIN

09498501 PINTO CREEK BELOW HAUNTED CANYON NEAR MIAMI, AZ

LOCATION--Lat 33° 25'07", long 111° 00'32", in SE1/4NE1/4, sec. 23, T.1 N., R.13 E. (unsurveyed), Gila County, Hydrologic Unit 15060103, 3/4 mi downstream from Haunted Canyon, in Tonto National Forest, in Gila County, approximately 8 mi west northwest of Miami, AZ.

DRAINAGE AREA--37.3 mi², from topographic map.

PERIOD OF RECORD--Oct. 1995 to current year.

GAGE--Water-stage recorder. Control is a 90° v-notch, since Aug. 26, 1996. Elevation of gage is 3,180 ft above sea level, from topographic map.

REMARKS--No estimated daily discharges. Records good. Some flows affected by pumpage from upstream wells.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 822 ft³/s, Feb. 28, 1997, at gage height 8.01 ft, recorded at gage. Minimum daily discharge, no flow for many days for the period July 2002 through Sept. 2002.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 100 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 12	1600	*0.61	*3.12

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.15	0.15	0.25	0.46	0.45	0.41	0.43	0.29	0.09	0.02	0.01	0.00
2	0.15	0.15	0.25	0.46	0.46	0.41	0.43	0.28	0.09	0.02	0.01	0.00
3	0.15	0.15	0.26	0.45	0.45	0.40	0.42	0.27	0.09	0.02	0.01	0.00
4	0.15	e0.15	0.31	0.44	0.46	0.40	0.41	0.26	0.09	0.03	0.02	0.00
5	0.14	e0.15	0.31	0.44	0.46	0.41	0.41	0.25	0.08	0.02	0.02	0.00
6	0.15	e0.15	0.31	0.44	0.45	0.40	0.43	0.24	0.08	0.02	0.02	0.00
7	0.16	0.15	0.32	0.44	0.45	0.41	0.41	0.23	0.07	0.02	0.01	0.00
8	0.16	0.15	0.34	0.44	0.46	0.47	0.41	0.22	0.07	0.02	0.01	0.00
9	0.15	0.15	0.36	0.45	0.45	0.49	0.40	0.22	0.07	0.02	0.01	0.02
10	0.15	0.15	0.38	0.46	0.44	0.52	0.40	0.21	0.07	0.02	0.01	0.02
11	0.14	0.16	0.43	0.45	0.44	0.51	0.39	0.20	0.07	0.02	0.01	0.02
12	0.14	0.16	0.57	0.45	0.44	0.50	0.39	0.20	0.07	0.01	0.00	0.01
13	0.14	0.17	0.60	0.46	0.44	0.48	0.38	0.19	0.06	0.01	0.00	0.01
14	0.13	0.17	e0.55	0.47	0.44	0.48	0.38	0.18	0.06	0.01	0.00	0.01
15	0.13	0.17	e0.55	0.46	0.44	0.46	0.37	0.18	0.06	0.01	0.00	0.00
16	0.13	0.17	e0.50	0.46	0.44	0.46	0.39	0.17	0.06	0.01	0.00	0.00
17	0.13	0.17	e0.50	0.46	0.44	0.45	0.37	0.17	0.05	0.01	0.00	0.00
18	0.13	0.18	e0.50	0.46	0.44	0.46	0.37	0.16	0.05	0.01	0.00	0.00
19	0.13	0.17	0.47	0.45	0.44	0.45	0.36	0.14	0.04	0.01	0.00	0.00
20	0.13	0.17	0.48	0.44	0.44	0.45	0.36	0.13	0.04	0.01	0.00	0.00
21	0.13	0.18	0.49	0.44	0.44	0.45	0.36	0.13	0.04	0.01	0.00	0.00
22	0.13	0.18	0.48	0.44	0.44	0.45	0.34	0.13	0.04	0.01	0.00	0.00
23	0.14	0.18	0.47	0.44	0.44	0.45	0.33	0.12	0.04	0.02	0.00	0.00
24	0.14	0.19	0.48	0.44	0.43	0.44	0.32	0.12	0.04	0.02	0.00	0.00
25	0.14	0.19	0.48	0.44	0.43	0.44	0.31	0.12	0.03	0.01	0.00	0.00
26	0.14	0.20	0.48	0.44	0.41	0.44	0.31	0.12	0.03	0.01	0.00	0.00
27	0.14	0.21	0.49	0.44	0.42	0.43	0.32	0.12	0.03	0.01	0.00	0.00
28	0.15	0.21	0.48	0.44	0.41	0.44	0.31	0.11	0.03	0.01	0.00	0.00
29	0.15	0.22	0.48	0.44	---	0.45	0.31	0.11	0.03	0.00	0.00	0.00
30	0.15	0.24	0.47	0.45	---	0.45	0.29	0.11	0.03	0.00	0.00	0.00
31	0.15	---	0.46	0.46	---	0.44	---	0.09	---	0.00	0.00	---
TOTAL	4.40	5.19	13.50	13.91	12.35	13.90	11.11	5.47	1.70	0.39	0.07	0.07
MEAN	0.142	0.173	0.435	0.449	0.441	0.448	0.370	0.176	0.057	0.013	0.002	0.002
MAX	0.16	0.24	0.60	0.47	0.46	0.52	0.43	0.29	0.09	0.03	0.02	0.02
MIN	0.13	0.15	0.25	0.44	0.41	0.40	0.29	0.09	0.03	0.00	0.00	0.00
AC-FT	8.7	10	27	28	24	28	22	11	3.4	0.8	0.1	0.1
CFSM	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2002, BY WATER YEAR (WY)

	1996	1997	1998	1999	2000	2001	2002
MEAN	0.873	2.589	0.967	2.647	9.362	5.791	3.295
MAX	5.44	16.9	3.66	11.3	38.3	15.4	9.73
(WY)	2001	2001	1998	1997	1998	2001	1998
MIN	0.058	0.11	0.23	0.30	0.41	0.45	0.37
(WY)	1998	1998	1997	1996	2000	2002	2002

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1996 - 2002
ANNUAL TOTAL	1334.80	82.06	
ANNUAL MEAN	3.657	0.225	2.215
HIGHEST ANNUAL MEAN			5.52
LOWEST ANNUAL MEAN			0.22
HIGHEST DAILY MEAN	85	Apr 6	355
LOWEST DAILY MEAN	0.07	Jul 19	0.00
ANNUAL SEVEN-DAY MINIMUM	0.07	Jul 18	0.00
ANNUAL RUNOFF (AC-FT)	2650	163	1600
ANNUAL RUNOFF (CFSM)	0.098	0.006	0.059
10 PERCENT EXCEEDS	10	0.46	2.7
50 PERCENT EXCEEDS	0.39	0.17	0.27
90 PERCENT EXCEEDS	0.12	0.00	0.04

e Estimated

09498502 PINTO CREEK NEAR MIAMI, AZ

LOCATION--Lat 33° 29' 16", long 110° 59' 41", in NW¹/₄SW¹/₄NW¹/₄ sec. 25, T.2 S., R.13 E. (unsurveyed), Gila County, Hydrologic Unit 15060103, 2 mi downstream from West Pinto Creek, in Tonto National Forest, 0.5 mi downstream from Forest Road No. 287 crossing of Pinto Creek, approximately 12 mi northwest of Miami, AZ, on the right bank side, at Pinto Valley weir.

DRAINAGE AREA--102 mi².

PERIOD OF RECORD--Oct. 1994 to current year.

GAGE--Water-stage recorder. Elevation of gage is 2,820 ft above sea level, from topographic map.

REMARKS--Records fair except for estimated daily discharges, which are poor. Some flows may be affected by pumpage from many upstream wells.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 5,010 ft³/s, Jan. 5, 1995, at gage height 9.10 ft.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 4.7 ft³/s, Aug. 5 at 1815, gage height, 2.81 ft, recorded at the gage. Minimum daily discharge, 0.67 ft³/s Aug. 11 and 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	2.4	1.8	1.6	1.7	2.0	2.1	2.4	1.8	1.4	0.90	0.88
2	2.3	2.4	1.9	1.6	1.7	2.0	2.0	2.3	1.8	1.3	0.83	0.89
3	2.2	2.4	1.9	1.6	1.7	2.0	2.0	2.2	1.8	1.3	0.80	0.95
4	2.2	2.3	2.0	1.6	1.7	2.0	1.9	2.2	1.9	1.5	0.71	0.96
5	2.2	2.4	1.9	1.5	1.7	2.1	1.9	2.1	1.8	1.4	0.78	0.90
6	2.3	2.4	1.9	1.5	1.8	2.2	1.9	2.1	1.7	1.4	0.70	0.88
7	2.3	2.4	1.9	1.4	1.8	2.2	2.0	2.1	1.6	1.2	0.71	0.92
8	2.3	2.4	1.7	1.5	1.8	2.4	2.0	2.2	1.6	1.1	0.71	1.0
9	2.3	2.3	1.6	1.4	1.8	2.5	2.0	2.1	1.6	1.1	0.70	1.0
10	2.3	2.3	1.5	1.5	1.8	2.4	2.1	2.1	1.7	1.1	0.70	1.0
11	2.3	2.2	1.5	1.5	1.9	2.3	2.2	2.2	1.6	1.1	0.67	0.97
12	2.3	2.2	1.5	1.5	1.9	2.2	2.2	2.1	1.6	1.1	0.67	0.93
13	2.3	2.1	1.5	1.5	1.9	2.2	2.3	2.1	1.6	1.2	0.72	0.91
14	2.3	2.1	1.5	1.5	1.9	2.3	2.3	2.0	1.6	1.2	0.73	0.88
15	2.3	2.0	1.5	1.5	1.9	2.2	2.3	2.0	1.5	1.2	0.71	0.86
16	2.3	2.0	1.5	1.5	2.0	2.3	2.4	2.0	1.6	1.3	0.72	0.88
17	2.3	2.0	1.5	1.5	2.0	2.4	2.3	1.9	1.6	1.4	0.75	0.88
18	2.3	2.0	1.5	1.5	2.0	2.3	2.3	1.9	1.6	1.3	0.73	0.91
19	2.3	2.0	1.5	1.5	2.1	2.4	2.4	1.8	1.5	1.3	0.72	0.89
20	2.3	2.0	1.6	1.5	2.1	2.4	2.4	1.8	1.6	1.2	0.72	0.88
21	2.2	1.9	1.5	1.5	2.1	2.4	2.5	1.8	1.6	1.1	0.74	0.86
22	2.3	1.8	1.5	1.6	2.1	2.5	2.5	1.8	1.6	1.1	0.73	0.87
23	2.2	1.8	1.6	1.6	2.1	2.5	2.5	1.7	1.6	1.1	0.76	0.91
24	2.2	1.8	1.7	1.6	2.1	2.6	2.4	1.7	1.6	1.2	0.73	0.92
25	2.2	1.8	1.7	1.6	2.1	2.7	2.4	1.7	1.6	1.1	0.72	0.93
26	2.3	1.8	1.7	1.6	2.1	2.7	2.5	1.7	1.6	1.1	0.72	0.93
27	2.3	e1.7	1.6	1.6	2.1	2.7	2.6	1.8	1.5	1.1	0.75	0.92
28	2.3	1.7	1.6	1.6	2.0	2.6	2.6	1.8	1.4	1.1	0.81	0.89
29	2.3	1.7	1.6	1.7	---	2.6	2.5	1.8	1.4	1.0	0.90	0.89
30	2.4	1.8	1.6	1.7	---	2.5	2.5	1.7	1.5	1.0	0.86	0.87
31	2.3	---	1.7	1.7	---	2.4	---	1.8	---	1.0	0.87	---
TOTAL	70.7	62.1	51.0	48.0	53.9	73.0	68.0	60.9	48.5	37.0	23.27	27.36
MEAN	2.281	2.070	1.645	1.548	1.925	2.355	2.267	1.965	1.617	1.194	0.751	0.912
MAX	2.4	2.4	2.0	1.7	2.1	2.7	2.6	2.4	1.9	1.5	0.90	1.0
MIN	2.2	1.7	1.5	1.4	1.7	2.0	1.9	1.7	1.4	1.0	0.67	0.86
AC-FT	140	123	101	95	107	145	135	121	96	73	46	54
CFSM	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2002, BY WATER YEAR (WY)

	1995	1996	1997	1998	1999	2000	2001	2002
MEAN	2.785	4.390	2.581	17.51	22.98	24.29	9.181	3.404
MAX	13.0	26.1	8.37	117	82.3	99.8	27.1	7.54
(WY)	2001	2001	1995	1995	1998	1995	1998	1995
MIN	0.025	0.005	0.014	0.26	0.76	0.99	0.98	0.69
(WY)	1998	1998	1997	1998	1999	1999	1996	1996

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1995 - 2002
ANNUAL TOTAL	2844.6	623.73	
ANNUAL MEAN	7.793	1.709	8.038
HIGHEST ANNUAL MEAN			27.3
LOWEST ANNUAL MEAN			1.21
HIGHEST DAILY MEAN	285	Apr 6	2040
LOWEST DAILY MEAN	1.5	Dec 10	0.00
ANNUAL SEVEN-DAY MINIMUM	1.5	Dec 10	0.00
ANNUAL RUNOFF (AC-FT)	5640	1240	5820
ANNUAL RUNOFF (CFSM)	0.076	0.017	0.079
10 PERCENT EXCEEDS	14	2.4	9.8
50 PERCENT EXCEEDS	3.1	1.7	2.0
90 PERCENT EXCEEDS	1.9	0.88	0.23

e Estimated

GILA RIVER BASIN

09498503 SOUTH FORK PARKER CREEK NEAR ROOSEVELT, AZ

LOCATION--Lat 33° 47' 50", long 110° 57' 35", in NE1/4NW1/4 sec. 7, T.5 N., R.14 E., Gila County, Hydrologic Unit 15060103, in Tonto National Forest, 1.5 mi upstream from confluence with Pocket Creek, and 12 mi northeast of Roosevelt.

DRAINAGE AREA--1.09 mi².

PERIOD OF RECORD--Nov. 1985 to Sept. 1992, June 1994 to current year. Prior to Nov. 1985, station operated by the Forest Service (records unpublished).

GAGE--Water-stage recorder and two sharp-crested weirs. Elevation of gage is 5,440 ft above sea level, from topographic map.

REMARKS--Records good, except for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 87 ft³/s, Mar. 6, 1995, gage height, 4.10 ft; no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD--Maximum discharge, since 1934, 270 ft³/s, Dec. 23, 1945, as reported by the Forest Service.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 0.19 ft³/s Aug. 5 at 1930. Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.02	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.00
6	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.00
7	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00
8	0.00	0.00	0.00	0.01	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.01	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	e0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	e0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	e0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	e0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00
17	0.00	0.00	e0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	e0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	e0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.01	0.02	0.01	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.01	0.02	0.01	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.02	0.01	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.02	0.31	0.32	0.29	0.09	0.00	0.00	0.00	0.00	0.04	0.00
MEAN	0.000	0.001	0.010	0.010	0.010	0.003	0.000	0.000	0.000	0.000	0.001	0.000
MAX	0.00	0.01	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.01	0.03	0.00
MIN	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.04	0.6	0.6	0.6	0.2	0.00	0.00	0.00	0.00	0.08	0.00
CFSM	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IN.	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2002, BY WATER YEAR (WY)

MEAN	0.043	0.128	0.344	0.769	1.166	1.538	0.633	0.089	0.014	0.006	0.073	0.039
MAX	0.37	0.92	1.52	5.33	6.61	5.11	2.77	0.22	0.076	0.034	0.29	0.19
(WY)	2001	2001	1992	1995	1995	1995	1991	1986	1992	1998	1986	1986
MIN	0.000	0.000	0.002	0.008	0.010	0.003	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1990	1990	1990	1990	2002	2002	2002	2002	1989	1986	1996	1987

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1986 - 2002

ANNUAL TOTAL	124.03	1.07		
ANNUAL MEAN	0.340	0.003	0.389	
HIGHEST ANNUAL MEAN			1.50	1995
LOWEST ANNUAL MEAN			0.003	2002
HIGHEST DAILY MEAN	4.1	Mar 8	0.03	Aug 6
LOWEST DAILY MEAN	0.00	Jun 20	0.00	Oct 1
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 23	0.00	Oct 1
ANNUAL RUNOFF (AC-FT)	246	2.1	282	
ANNUAL RUNOFF (CFSM)	0.31	0.003	0.36	
ANNUAL RUNOFF (INCHES)	4.23	0.04	4.85	
10 PERCENT EXCEEDS	1.1	0.01	0.88	
50 PERCENT EXCEEDS	0.02	0.00	0.02	
90 PERCENT EXCEEDS	0.00	0.00	0.00	

e Estimated

GILA RIVER BASIN

09499000 TONTO CREEK ABOVE GUN CREEK, NEAR ROOSEVELT, AZ

LOCATION.--Lat 33° 58' 48", long 111° 18' 10", in SW¹/₄NE¹/₄ sec. 2, T.7 N., R.10 E., Gila County, Hydrologic Unit 15060105, in Tonto National Forest, on left bank 600 ft upstream from Gun Creek, 25 mi upstream from Roosevelt Dam, and 24 mi northwest of Roosevelt.

DRAINAGE AREA.--675 mi².

PERIOD OF RECORD.--Dec. 1940 to current year.

REVISED RECORDS.--WSP 1283: Drainage area. WDR AZ--80--1: 1978(M), WDR AZ--88--1: 1979(P).

GAGE.--Water-stage recorder. Datum of gage is 2,523.14 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Small diversions above station for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 72,500 ft³/s Jan. 8, 1993, gage height, 17.95 ft; maximum gage height, 18.2 ft Sept. 5, 1970; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 11	0100	*423	*4.34

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	3.0	6.8	9.7	11	8.8	8.2	3.0	0.00	0.00	0.42	8.9
2	0.00	3.9	7.0	10	11	8.0	8.2	2.9	0.00	0.00	0.00	0.45
3	0.00	4.3	7.0	10	10	7.6	8.1	3.0	0.00	0.00	0.00	0.00
4	0.00	3.7	9.5	11	9.9	7.6	7.3	2.7	0.00	0.00	0.00	0.00
5	0.00	4.0	9.3	11	10	7.6	6.9	2.3	0.00	0.00	0.00	0.00
6	0.00	4.2	10	11	10	7.9	7.0	0.99	0.00	0.00	0.00	0.00
7	0.00	3.7	11	11	10	8.0	7.3	1.9	0.00	0.00	0.00	0.00
8	0.00	4.1	9.5	9.5	10	8.8	7.0	1.5	0.00	0.00	0.00	0.00
9	0.00	4.4	8.9	8.5	9.9	8.6	6.7	1.6	0.00	0.00	0.00	0.00
10	0.00	4.8	8.7	8.2	9.6	8.6	6.2	1.6	0.00	0.00	0.00	0.13
11	0.00	5.1	8.8	8.2	8.8	8.8	7.0	1.5	0.00	0.00	0.00	59
12	0.00	5.4	9.4	6.4	8.2	8.8	6.3	0.97	0.00	0.00	0.00	3.3
13	0.27	5.6	8.8	8.1	7.7	7.2	5.6	0.75	0.00	0.00	0.00	0.04
14	0.70	5.6	9.2	6.0	7.6	7.6	6.5	0.76	0.00	0.00	0.00	0.00
15	0.93	6.2	9.5	8.2	7.5	7.1	5.7	0.61	0.00	0.00	0.00	0.00
16	0.93	6.5	9.5	8.1	7.6	7.7	6.1	0.47	0.00	27	0.00	0.00
17	1.2	6.4	9.4	8.8	8.6	7.6	6.0	0.47	0.00	4.3	0.00	0.00
18	1.6	5.9	9.7	9.7	9.5	7.5	5.8	0.47	0.00	0.00	0.00	0.00
19	2.3	5.9	9.6	9.8	8.6	7.6	5.8	0.47	0.00	0.00	0.00	0.00
20	2.3	6.1	9.3	10	8.2	7.2	5.3	0.47	0.00	0.00	0.00	0.00
21	2.2	6.1	9.3	10	8.7	7.0	5.3	0.30	0.00	0.00	0.00	0.00
22	1.4	6.3	10	9.8	9.6	7.2	5.1	0.31	0.00	0.00	0.00	0.00
23	1.2	6.3	10	9.9	9.1	7.1	4.9	0.47	0.00	1.1	0.00	0.00
24	1.4	6.3	10	9.6	9.3	7.1	4.2	0.07	0.00	0.00	0.00	0.00
25	1.5	6.9	10	9.5	9.7	7.0	4.3	0.00	0.00	0.00	0.00	0.00
26	1.5	6.7	10	8.4	9.6	7.0	4.1	0.00	0.00	43	0.00	0.00
27	1.3	6.5	10	8.2	9.3	7.0	4.1	0.00	0.00	38	0.00	0.00
28	1.2	6.7	10	9.1	9.8	7.3	4.2	0.00	0.00	15	0.00	0.00
29	1.4	6.8	9.8	9.5	---	7.6	3.6	0.00	0.00	7.8	0.00	0.00
30	1.6	7.0	9.5	10	---	7.6	3.3	0.00	0.00	4.7	0.00	0.00
31	2.2	---	9.5	11	---	8.0	---	0.00	---	2.0	0.00	---
TOTAL	27.13	164.4	289.0	288.2	258.8	238.5	176.1	29.58	0.00	142.90	0.42	71.82
MEAN	0.875	5.480	9.323	9.297	9.243	7.694	5.870	0.954	0.000	4.610	0.014	2.394
MAX	2.3	7.0	11	11	11	8.8	8.2	3.0	0.00	43	0.42	59
MIN	0.00	3.0	6.8	6.0	7.5	7.0	3.3	0.00	0.00	0.00	0.00	0.00
AC-FT	54	326	573	572	513	473	349	59	0.00	283	0.8	142
CFSM	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.00
IN.	0.00	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2002, BY WATER YEAR (WY)

MEAN	58.79	70.57	226.8	330.0	352.1	473.2	163.8	46.16	13.76	22.33	89.83	41.63
MAX	1053	438	2326	4272	4191	4159	1040	488	94.9	207	1091	626
(WY)	1973	1973	1966	1993	1980	1978	1941	1941	1955	1955	1951	1970
MIN	0.88	5.48	9.32	9.30	9.24	7.69	5.87	0.95	0.000	0.000	0.014	0.78
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	1996	2000	2002	1956

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1941 - 2002
ANNUAL TOTAL	17546.75	1686.85	
ANNUAL MEAN	48.07	4.622	152.6
HIGHEST ANNUAL MEAN			652
LOWEST ANNUAL MEAN			4.62
HIGHEST DAILY MEAN	831	59	36700
LOWEST DAILY MEAN	0.00	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	0.00	0.00
ANNUAL RUNOFF (AC-FT)	34800	3350	110600
ANNUAL RUNOFF (CFSM)	0.071	0.007	0.23
ANNUAL RUNOFF (INCHES)	0.97	0.09	3.07
10 PERCENT EXCEEDS	139	9.8	244
50 PERCENT EXCEEDS	9.8	4.1	22
90 PERCENT EXCEEDS	0.00	0.00	4.0

09501000 RESERVOIR SYSTEM ON SALT RIVER AT AND BELOW ROOSEVELT DAM, AZ

LOCATION.--This system comprises four storage reservoirs created by four separate dams on Salt River, Hydrologic Unit 15060106: Roosevelt Lake, formed by Roosevelt Dam in sec. 20, T.4 N., R.12 E. (unsurveyed), on State Highway 88; Apache Lake, formed by Horse Mesa Dam, 17 mi downstream from Roosevelt Dam; Canyon Lake, formed by Mormon Flat Dam, 27 mi downstream from Roosevelt Dam; Saguaro Lake, formed by Stewart Mountain Dam, 37 mi downstream from Roosevelt Dam. Contents given herein are combined usable contents of the four reservoirs.

DRAINAGE AREA.--6,211 mi², at Stewart Mountain Dam.

PERIOD OF RECORD.--Apr. 1910 to current year. Prior to Oct. 1934, monthend contents only, published in WSP 1313. Evaporation: Apr. 1958 to June 1963.

REVISED RECORDS.--WSP 1283: Drainage area. WRD Ariz. 1975: 1974.

GAGES.--Roosevelt Lake, water-stage indicator in powerplant connected to long distance transmitter on lake (water-stage recorder prior to Jan. 1, 1967); Apache Lake, water-stage indicator in powerplant connected to long distance transmitter on lake since Apr. 1949 (prior to that date, nonrecording gage or reference mark); Canyon and Saguaro Lakes, mercury column gages.

REMARKS.--Total capacity of the four reservoirs as of 1997 was 2,025,800 acre-ft, divided as follows: Roosevelt Lake, 1,653,000 acre-ft; Apache Lake, 245,000 acre-ft; Canyon Lake, 58,000 acre-ft; Saguaro Lake, 70,000 acre-ft. Dead storage negligible. Dams forming these reservoirs were built as follows: Roosevelt 1905--11; Horse Mesa 1924--27; Mormon Flat 1923--26; Stewart Mountain 1928--30. The four dams forming these reservoirs completely develop the fall in the Salt River from Roosevelt Lake to Stewart Mountain Dam. Elevation of water surface varies from 1,422.0 ft (sill of lowest outlet in Stewart Mountain Dam) to 2,151 ft (top of spillway). Records given herein represent usable contents. Prior to Oct. 1, 1972, contents were given at 2400 hours. Water from this system is used for irrigation of Salt River Valley, power generation, municipal purposes, and recreation.

COOPERATION.--Records of daily contents furnished by Salt River Valley Water Users' Association.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents of system, 1,764,000 acre-ft May 22, 1941; minimum, 20,680 acre-ft Sept. 16, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum contents of system at 0800 hours, 741,600 acre-ft Oct. 1; minimum, 515,500 acre-ft Sept. 4.

RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	741600	725100	728100	733100	725200	722200	722200	701500	658600	590000	550700	527500
2	739800	724900	728200	733300	725400	721900	721700	700200	656500	587200	549200	526900
3	738100	724900	728100	733800	725900	721900	721200	698500	655000	584600	548500	526300
4	735300	725300	728300	732400	725900	721300	720900	695200	653100	582100	547900	515500
5	733300	726200	728700	732000	725800	720800	720000	692700	651400	580300	547300	523200
6	731900	725900	730500	731800	724800	721400	719900	691500	649100	578100	547800	523000
7	730900	725800	731400	732000	724400	721500	718600	688700	647300	576200	549800	522900
8	731000	e725400	732700	731900	723700	721400	718400	694300	645600	574400	549800	522900
9	729800	724900	733400	731800	723300	721700	718400	694000	643100	572600	549600	522700
10	728800	725300	734100	731200	723400	722200	717800	690800	641100	570000	548700	522800
11	726900	725700	732600	731100	722900	721500	717600	687500	638400	569800	548400	524200
12	725700	727100	732600	730000	722500	721800	716900	684700	636000	565800	547700	530200
13	724100	726600	732400	728900	721900	722500	715800	682700	633600	564200	547000	532800
14	723100	726400	732400	729200	722100	722600	715000	685700	632300	562700	545500	533600
15	721100	726900	732500	729300	722000	722400	715400	686200	627500	561100	544200	534300
16	721300	726800	732500	729100	722400	722900	714200	682200	615800	559700	542600	535000
17	720600	727200	732400	728300	721500	722600	713900	683100	624000	559900	540300	535500
18	721200	727100	733400	718900	721200	722700	712400	681100	621000	560100	539100	535300
19	721400	726900	733500	725800	720600	722900	712100	680100	618700	559800	537700	535900
20	721400	727200	736700	724400	720700	723400	710500	677800	616400	559000	536400	536000
21	721300	727400	734500	725900	720400	724000	709000	673500	613700	558200	539000	536000
22	722700	726900	735200	725400	721200	723200	708400	674900	611600	557600	534100	535800
23	724100	726800	735200	725600	721200	721300	709300	673000	610200	556900	533100	536100
24	724200	726900	736100	725300	721000	719700	707500	671100	607500	555200	532100	536100
25	724700	727500	736000	724500	720600	722300	706500	663000	605100	553500	531200	535600
26	724900	727100	735400	724800	721300	723400	706000	668200	602300	552400	530900	535200
27	725700	728200	736200	725000	722100	722900	702300	666400	600100	552000	530200	534900
28	724300	728500	737000	725300	722100	722500	701900	665400	597900	552300	529100	535400
29	725000	728700	739000	725600	---	722300	699300	664200	595200	552300	528800	535000
30	725000	728000	738800	725200	---	722000	701400	662000	592800	552400	527700	535200
31	724800	---	737700	725600	---	721500	---	660700	---	551700	527700	---
MAX	741600	728700	739000	733800	725900	724000	722200	701500	658600	590000	550700	536100
MIN	720600	724900	728100	718900	720400	719700	699300	660700	592800	551700	527700	515500
(*)	-16500	+3000	+5000	-7900	-3000	0	-20700	-42900	-68600	-39300	-23200	+7200

CAL YR 2001 MAX 1009000 MIN 720600
WTR YR 2002 MAX 741600 MIN 515500

(*) Change in contents, in acre-feet (from 0800 first of month)
Note--contents at 0800 Oct. 1, 2001, 534700

e Estimated

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ

LOCATION--Lat 33° 33' 10", long 111° 34' 33", in NW_{1/4}/NW_{1/4} sec. 6, T.2 N., R.8 E. (unsurveyed), Maricopa County, Hydrologic Unit 15060106, on left bank 3.5 mi downstream from Stewart Mountain Dam and 6 mi upstream from Verde River.

DRAINAGE AREA--6,232 mi², of which 21 mi² is below Stewart Mountain Dam.

PERIOD OF RECORD--Mar. 1930 to current year. Monthly discharge only for some periods, published in WSP 1313. Published as "at Stewart Mountain Dam" 1934--41.

REVISED RECORDS--WSP 1343: Drainage area.

GAGE--Water-stage recorder. Elevation of gage is 1,370 ft above sea level, from topographic map. Prior to Sept. 27, 1934, at site 3.2 mi upstream at different datum. Sept. 27, 1934, to Jan. 20, 1950, at site 2.8 mi upstream at datum 1,396.33 ft above sea level.

REMARKS--Records good, except for estimated daily discharges, which are poor. Flow regulated by four reservoirs above station. (See elsewhere in this report.) Entire flow (except during infrequent periods of extreme flooding) is diverted at Granite Reef Dam, 10 mi downstream, for irrigation in Salt River Valley and for municipal use by the city of Phoenix.

AVERAGE DISCHARGE--72 years, 1,001 ft³/s, 725,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 75,200 ft³/s Feb. 15, 1980, gage height, 25.0 ft, from highwater mark inside gage well, from rating curve then in use, extended above 10,000 ft³/s defined by known release rates from Stewart Mountain Dam and recorded gage heights; maximum daily discharge, 64,000 ft³/s Feb. 16, 1980; no flow at times in recent years.

EXTREMES FOR CURRENT YEAR--Maximum daily discharge, 1,640 ft³/s June 18. Minimum daily discharge, 4.8 ft³/s Dec. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1070	7.9	7.8	374	60	93	109	425	948	1180	1060	257
2	970	7.9	7.4	504	87	59	255	396	915	1220	920	403
3	1010	7.7	7.4	312	217	59	423	638	935	1150	763	600
4	981	7.8	14	368	309	58	528	535	894	1100	589	761
5	960	8.1	9.7	449	485	102	615	399	957	1180	645	489
6	932	7.7	7.5	355	340	140	539	472	1060	1040	629	458
7	842	7.8	7.2	307	327	119	415	533	1200	912	684	340
8	776	8.1	7.1	308	374	102	234	578	1150	829	690	150
9	805	8.2	7.2	375	349	88	264	630	1010	1000	755	255
10	754	7.5	6.4	355	350	77	336	774	1100	1050	702	687
11	806	7.9	7.2	301	331	76	355	675	1170	957	579	342
12	843	8.3	8.2	318	297	75	426	537	1330	1020	589	189
13	740	8.0	8.2	352	325	75	400	572	1390	916	990	282
14	362	8.3	8.0	317	282	73	320	713	1470	770	1020	229
15	192	8.3	7.7	338	280	77	401	760	1280	745	1070	245
16	90	8.3	7.7	442	280	79	472	806	1300	639	1180	285
17	58	8.5	7.2	491	279	83	602	976	1550	377	838	132
18	16	8.6	7.2	442	268	87	516	841	1640	273	798	69
19	12	8.5	7.0	384	188	81	482	758	1360	741	814	157
20	11	8.4	6.5	357	60	66	450	694	1350	731	790	179
21	9.9	8.3	5.8	355	96	115	310	708	1300	478	678	186
22	9.6	8.8	5.5	382	113	139	382	819	1050	689	542	185
23	9.4	8.5	5.4	298	114	124	652	816	869	1020	658	185
24	9.2	8.4	5.2	210	82	79	605	932	919	927	678	182
25	9.3	8.0	5.0	158	82	63	513	760	1300	638	363	157
26	8.9	8.5	5.1	150	80	74	509	670	1280	785	300	157
27	8.3	8.2	4.8	131	81	312	457	736	1280	585	416	157
28	7.8	7.9	163	131	102	489	331	730	1420	357	504	150
29	7.9	8.1	474	131	---	243	424	859	1240	607	642	103
30	8.0	7.7	462	127	---	72	438	849	1050	841	466	94
31	7.9	---	402	104	---	58	---	998	---	940	333	---
TOTAL	12326.2	244.2	1694.4	9626	6238	3437	12763	21589	35717	25697	21685	8065
MEAN	397.6	8.140	54.66	310.5	222.8	110.9	425.4	696.4	1191	828.9	699.5	268.8
MAX	1070	8.8	474	504	485	489	652	998	1640	1220	1180	761
MIN	7.8	7.5	4.8	104	60	58	109	396	869	273	300	69
AC-FT	24450	484	3360	19090	12370	6820	25320	42820	70840	50970	43010	16000
CAL YR 2001	TOTAL 194866.1	MEAN 533.9	MAX 1660	MIN 3.0	AC-FT 386500							
WTR YR 2002	TOTAL 159081.8	MEAN 435.8	MAX 1640	MIN 4.8	AC-FT 315500							

GILA RIVER BASIN

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Dec. 1950 to Aug. 1992, Aug. 1999 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct. 1964 to Sept. 1982, Mar. 1983 to Sept. 1990.

WATER TEMPERATURES: Dec. 1950 to Sept. 1982, Mar. 1983 to Sept. 1990.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TUR-BID-ITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-AIRE (DEG C) (00020)	TEMPER-AIRE WATER (DEG C) (00010)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	HARD-NESS TOTAL AS CACO3 (MG/L) (00900)	CALCIUM DIS-SOLVED AS CA (MG/L) (00915)
OCT 03...	0950	1000	2.3	725	6.0	74	8.0	1820	26.5	23.0	71	200	50.0
APR 04...	1100	617	3.5	725	12.0	122	8.1	1820	29.0	13.6	67	200	52.0
MAY 10...	1110	777	.90	720	6.5	71	8.0	1820	29.0	16.6	63	210	53.0
AUG 29...	0945	725	1.9	722	6.5	79	7.7	1820	32.0	21.8	66	210	52.0

Date	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA) (00916)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	BICAR-BONATE WATER DIS IT (MG/L AS HCO3) (00453)	CAR-BONATE WATER DIS IT (MG/L AS CO3) (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDE (MG/L) (00530)
OCT 03...	51.0	19.0	19.0	6.40	8	260	132	161	<1	440	.3	69.0	5
APR 04...	52.0	18.0	19.0	6.50	8	260	137	167	<1	440	.4	70.0	6
MAY 10...	54.0	18.0	18.0	6.30	8	260	143	175	<1	440	.4	66.0	5
AUG 29...	54.0	19.0	19.0	7.00	8	280	142	173	<1	450	.3	67.0	6

Date	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	E COLI, MTEC MF WATER (COL/100 ML) (31633)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)
OCT 03...	1.35	995	924	.30	.01	.01	<.020	.29	.02	14	E3k	E5k	<1
APR 04...	1.35	992	929	.40	.02	.03	<.020	.38	.02	<5	E5k	E6k	<1
MAY 10...	1.32	974	930	.50	<.01	--	<.020	--	<.02	12	E2k	E5k	<1
AUG 29...	1.39	1020	961	.40	.02	.03	<.020	.38	.04	9	97	--	<1

Date	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
OCT 03...	<1	5	6	76.0	79.0	<1	<1	153	159	<.5	<.5	<1	<1
APR 04...	<1	4	4	87.0	97.0	<1	<1	160	162	<.5	<.5	<1	<1
MAY 10...	<1	7	4	66.0	71.0	<1	<1	158	163	<.5	<.5	<1	<1
AUG 29...	<1	10	12	85.0	90.0	<1	<1	173	172	<.5	<.5	<1	<1

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)
OCT 03...	<2	<2	<2	65	<2	<2	10	99	<.10	<.1	<1	<1	<1
APR 04...	<2	<2	<2	98	<2	<2	8	68	<.10	<.1	<1	<1	<1
MAY 10...	<2	<2	10	56	<2	<2	52	141	<.10	<.1	<1	<1	<1
AUG 29...	<2	<2	<2	51	<2	<2	11	161	<.10	<.1	<1	<1	<1

Date	SELE- NIUM, TOTAL SOLVED (UG/L AS SE) (01147)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	STRON- TIUM, TOTAL RECOV- ERABLE (UG/L AS SR) (01082)	THAL- LIUM, DIS- SOLVED (UG/L AS TL) (01057)	THAL- LIUM, TOTAL SOLVED (UG/L AS TL) (01059)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L (T/DAY) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L (T/DAY) (80155)
OCT 03...	<1	<1	<1	550	<2	<2	6	<2	5.0	13.5
APR 04...	<1	<1	<1	660	<2	<2	6	<2	6.0	10.0
MAY 10...	<1	<1	<1	590	<2	<2	15	<2	3.0	6.3
AUG 29...	<1	<1	<1	590	<2	<2	11	5	3.0	5.9

Remark codes used in this report:

- < -- Less than
- E -- Estimated value

Value qualifier codes used in this report:

- k -- Counts outside acceptable range

GILA RIVER BASIN

09502800 WILLIAMSON VALLEY WASH NEAR PAULDEN, AZ

LOCATION--Lat 34° 52'00", long 112° 36'45", in SE1/4SE1/4 sec. 7, T.17 N., R.3 W., Yavapai County, Hydrologic Unit 15060201, on left bank 3.6 mi north of Simmons and 8.5 mi west of Paulden.

DRAINAGE AREA--255 mi².

PERIOD OF RECORD--Mar. 1965 to Sept. 1985; Aug. 2001 to current year.

REVISED RECORDS--WSP 1119: 1939(M), WSP 1213: 1914, 1916(M), 1918(M), 1919, 1920(M), 1922--23(M), WDR AZ--90--1: Drainage area.

GAGE--Water-stage recorder. Datum of gage is 4,455 ft. above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1970, at datum 1.00 ft. higher. Datum of 4,447 ft. published in WRD Ariz. 1971--76 was in error.

REMARKS--Records fair, except for estimated daily discharges and those above 15 ft³/s, which are poor.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 14,800 ft³/s Sept. 23, 1983, gage height, 9.96 ft from rating curve extended above 2,200 ft³/s on basis of slope-area measurements at gage heights 6.38 ft, 8.22 ft, 8.93 ft, and 9.96 ft; no flow at times in most years.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 300 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 6.....	2200	*1710	*5.01

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.26	0.74	1.6	2.1	e1.8	1.9	1.7	0.89	0.23	0.00	0.00	0.00
2	0.27	0.80	1.6	1.9	1.8	1.8	1.6	0.92	0.19	0.00	0.00	0.00
3	0.29	0.81	1.8	1.9	e2.1	e1.8	1.5	0.94	0.15	0.00	0.00	0.00
4	0.29	0.82	2.3	2.0	2.4	e1.8	1.4	0.93	0.13	0.00	0.00	0.00
5	0.28	0.99	2.1	1.9	e2.3	1.9	1.4	0.92	0.10	0.00	0.00	0.00
6	0.29	0.96	1.9	2.2	e2.2	1.9	2.5	0.89	0.08	0.00	0.00	153
7	0.56	0.94	1.9	2.2	2.1	1.9	3.0	0.86	0.03	0.00	0.00	255
8	0.50	0.94	1.8	2.4	1.8	1.9	2.1	0.84	0.00	0.00	0.00	7.5
9	0.51	0.96	1.9	2.6	1.7	1.8	1.8	0.75	0.00	0.00	0.00	3.5
10	0.47	0.98	2.1	2.5	1.6	1.8	1.9	0.72	0.00	0.00	0.00	2.1
11	0.47	0.99	1.9	2.2	1.7	1.8	1.8	0.67	0.00	0.00	0.00	1.5
12	0.48	1.1	1.9	2.2	1.9	1.8	1.8	0.64	0.00	0.00	0.00	1.2
13	0.47	1.2	1.8	2.4	1.8	1.9	e1.7	0.62	0.00	0.00	0.00	0.89
14	0.44	1.2	2.0	2.6	1.7	1.8	e1.6	0.59	0.00	0.00	0.00	0.75
15	0.44	1.2	2.2	2.4	1.6	1.8	e1.5	0.55	0.00	0.00	0.00	0.65
16	0.45	1.3	e1.9	2.0	1.6	1.8	e1.4	0.51	0.00	0.00	0.00	0.59
17	0.47	1.4	1.6	1.8	1.6	2.2	e1.2	0.49	0.00	0.00	0.00	0.55
18	0.48	1.4	1.6	2.0	1.7	2.2	1.2	0.46	0.00	0.00	0.00	0.50
19	0.50	1.4	1.6	e2.0	1.6	2.1	1.2	0.43	0.00	0.00	0.00	0.47
20	0.49	1.4	1.6	e2.0	1.6	2.1	1.2	0.40	0.00	0.00	0.00	0.45
21	0.52	1.4	1.6	2.1	1.5	2.2	1.1	0.40	0.00	0.00	0.00	0.42
22	0.54	1.5	1.5	2.2	1.5	2.0	1.1	0.43	0.00	0.00	0.00	0.39
23	0.54	1.5	1.6	2.2	1.6	1.9	1.1	0.44	0.00	0.00	0.00	0.38
24	0.57	1.5	1.7	e2.0	1.8	2.2	1.1	0.40	0.00	0.00	0.00	0.37
25	0.58	1.7	1.9	1.9	1.8	2.0	0.95	0.40	0.00	0.00	0.00	0.37
26	0.61	1.5	e1.8	2.0	1.9	2.1	0.94	0.42	0.00	0.00	0.00	0.35
27	0.64	1.6	1.8	2.1	1.9	1.9	0.95	0.44	0.00	0.00	0.00	0.36
28	0.65	1.4	1.9	2.0	1.9	1.9	0.92	0.45	0.00	0.00	0.00	0.38
29	0.67	1.7	2.0	1.9	---	2.3	0.90	0.43	0.00	0.00	0.00	0.40
30	0.70	1.7	2.1	1.9	---	2.0	0.90	0.36	0.00	0.00	0.00	0.40
31	0.72	---	2.1	e1.8	---	1.8	---	0.27	---	0.00	0.00	---
TOTAL	15.15	37.03	57.1	65.4	50.5	60.3	43.46	18.46	0.91	0.00	0.00	432.47
MEAN	0.489	1.234	1.842	2.110	1.804	1.945	1.449	0.595	0.030	0.000	0.000	14.42
MAX	0.72	1.7	2.3	2.6	2.4	2.3	3.0	0.94	0.23	0.00	0.00	255
MIN	0.26	0.74	1.5	1.8	1.5	1.8	0.90	0.27	0.00	0.00	0.00	0.00
MED	0.49	1.3	1.9	2.0	1.8	1.9	1.4	0.51	0.00	0.00	0.00	0.43
AC-FT	30	73	113	130	100	120	86	37	1.8	0.00	0.00	858
CFSM	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2002, BY WATER YEAR (WY)

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
MEAN	6.375	4.836	25.01	19.72	55.65	45.69	10.06	1.459	0.641	0.848	3.100	13.03							
MAX	76.8	27.8	185	175	513	381	107	3.67	2.05	3.66	15.0	233							
(WY)	1973	1966	1966	1980	1980	1978	1965	1980	1973	1971	1971	1983							
MIN	0.000	0.48	0.93	1.81	1.62	1.34	0.99	0.000	0.000	0.000	0.000	0.030							
(WY)	1979	1980	1980	1967	1967	1977	1966	1966	1966	2002	2002	1966							

SUMMARY STATISTICS

FOR 2002 WATER YEAR

WATER YEARS 1965 - 2002

ANNUAL TOTAL	780.78	
ANNUAL MEAN	2.139	15.01
HIGHEST ANNUAL MEAN		62.5
LOWEST ANNUAL MEAN		1.58
HIGHEST DAILY MEAN	255	Sep 7 1983
LOWEST DAILY MEAN	0.00	Jun 8 1966
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 8 1966
ANNUAL RUNOFF (AC-FT)	1550	10870
ANNUAL RUNOFF (CFSM)	0.008	0.059
10 PERCENT EXCEEDS	2.1	6.8
50 PERCENT EXCEEDS	0.93	1.8
90 PERCENT EXCEEDS	0.00	0.10

e Estimated

GILA RIVER BASIN

09502960 GRANITE CREEK AT PRESCOTT, AZ

LOCATION--Lat 34° 33'07", long 112° 27'42", in NE¹/₄SW¹/₄NW¹/₄, sec. 34, T.14 N., R.2 W., Yavapai County, Hydrologic Unit 15060202, at southwestern boundary of Yavapai-Prescott Indian Reservation, within the City of Prescott, AZ.

DRAINAGE AREA--30.0 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD--Nov. 1994 to current year.

REVISED RECORDS--WDR AZ-98-1: 1997.

GAGE--Water-stage recorder. Elevation of gage is 5,285 ft above sea level, from topographic map.

REMARKS--Records fair except for estimated daily discharges, which are poor. Flow is partly regulated by Goldwater Reservoirs on Bannon Creek.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 3,200 ft³/s Mar. 6, 1995, gage height, 8.58 ft from slope-conveyance survey; maximum gage height, 8.91 ft, Aug. 26, 2000 (backwater from tributary). No flow for many days each year.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 400 ft³/s (revised) and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 13.....	1645	*1,140	*8.25	Sept. 6	2030	1,050	8.43
July 23.....	1930	463	7.65	Sept. 10	2245	922	8.60

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.06	0.32	0.09	0.10	0.18	0.18	0.07	0.00	0.00	e0.01	0.00
2	0.00	0.07	0.39	0.06	0.09	0.18	0.18	0.09	0.00	0.00	e0.01	0.00
3	0.00	0.07	0.39	0.06	0.09	0.17	0.18	0.10	0.00	0.00	2.0	0.00
4	0.00	0.06	3.7	0.06	0.09	0.17	0.18	0.10	0.00	0.00	5.7	0.00
5	0.00	3.6	0.42	0.06	0.08	0.15	0.18	0.09	0.00	0.00	e0.03	0.00
6	0.79	0.05	0.14	0.06	0.08	0.13	3.3	0.08	0.00	0.00	e0.02	36
7	3.6	0.03	0.11	0.06	0.07	0.14	0.52	0.06	0.00	0.00	e0.01	53
8	14	0.03	0.11	0.06	0.07	0.12	0.18	0.05	0.00	0.00	e0.01	e4.7
9	0.22	0.03	0.11	0.08	0.06	0.11	0.16	0.04	0.00	0.00	0.00	3.2
10	0.03	0.03	0.15	0.09	0.06	0.10	0.10	0.04	0.00	0.00	0.00	49
11	0.02	0.03	0.11	0.09	0.06	0.11	0.09	0.03	0.00	0.00	0.00	14
12	0.02	0.03	0.11	0.09	0.07	0.12	0.09	0.03	0.00	0.00	0.00	0.64
13	0.02	0.03	0.11	0.09	0.08	0.12	0.08	0.03	0.00	42	0.00	0.16
14	0.02	0.03	0.11	0.09	0.09	0.10	0.07	0.03	0.00	0.04	0.00	0.08
15	0.03	0.03	0.49	0.09	0.06	0.09	0.09	0.03	0.00	0.02	0.00	0.06
16	0.02	0.03	0.20	0.09	0.06	0.09	0.10	0.03	0.00	0.90	0.00	0.05
17	0.02	0.03	0.14	0.10	0.07	0.09	0.11	0.02	0.00	0.02	0.00	0.04
18	0.02	0.03	0.11	0.09	0.06	0.14	0.11	0.02	0.00	0.05	0.00	0.04
19	0.02	0.04	0.11	0.10	0.07	0.14	0.11	0.01	0.00	0.02	0.00	0.04
20	0.02	0.04	0.11	0.10	0.08	0.15	0.12	0.01	0.00	0.02	0.00	0.03
21	0.02	0.04	0.11	0.11	0.09	0.15	0.11	0.02	0.00	0.02	0.00	0.03
22	0.03	0.04	0.11	0.11	0.10	0.17	0.09	0.03	0.00	0.02	0.00	0.03
23	0.02	0.05	0.11	0.10	0.12	0.17	0.09	0.03	0.00	20	0.00	0.03
24	0.03	0.06	0.11	0.09	0.12	0.18	0.10	0.02	0.00	0.02	0.00	0.03
25	0.03	0.31	0.11	0.09	0.13	0.18	0.11	0.02	0.00	e0.02	0.00	0.03
26	0.03	0.30	0.11	0.09	0.17	0.19	0.18	0.01	0.00	e0.02	0.00	0.03
27	0.03	0.30	0.11	0.10	0.18	0.18	0.11	0.01	0.00	e0.02	0.00	0.02
28	0.03	0.31	0.11	0.14	0.19	0.22	0.11	0.00	0.00	e0.02	0.00	0.02
29	0.04	0.35	1.5	0.13	---	1.7	0.10	0.00	0.00	e0.02	0.00	0.01
30	0.04	0.34	0.18	0.10	---	0.18	0.07	0.00	0.00	e0.01	0.00	e0.01
31	0.04	---	0.11	0.09	---	0.17	---	0.00	---	e0.01	0.00	---
TOTAL	19.19	6.45	10.11	2.76	2.59	6.09	7.20	1.10	0.00	63.25	7.79	161.28
MEAN	0.619	0.215	0.326	0.089	0.092	0.196	0.240	0.035	0.000	2.040	0.251	5.376
MAX	14	3.6	3.7	0.14	0.19	1.7	3.3	0.10	0.00	42	5.7	53
MIN	0.00	0.03	0.11	0.06	0.06	0.09	0.07	0.00	0.00	0.00	0.00	0.00
MED	0.02	0.04	0.11	0.09	0.08	0.15	0.11	0.03	0.00	0.02	0.00	0.03
AC-FT	38	13	20	5.5	5.1	12	14	2.2	0.00	125	15	320
CFSM	0.02	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.07	0.01	0.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2002, BY WATER YEAR (WY)

	1995	1996	1997	1998	1999	2000	2001	2002
MEAN	2.224	0.846	0.733	6.208	15.26	17.77	5.599	0.812
MAX	13.1	3.14	2.39	27.5	85.5	74.1	31.6	3.92
(WY)	2001	2001	1998	1995	1995	1998	1998	1999
MIN	0.085	0.14	0.20	0.089	0.093	0.20	0.24	0.027
(WY)	1997	1996	2000	2002	2002	2002	2002	1996

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1995 - 2002

ANNUAL TOTAL	1095.18	287.81	
ANNUAL MEAN	3.000	0.789	3.845
HIGHEST ANNUAL MEAN			10.1
LOWEST ANNUAL MEAN			0.79
HIGHEST DAILY MEAN	129	Mar 10	940
LOWEST DAILY MEAN	0.00	Jun 17	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 25	0.00
ANNUAL RUNOFF (AC-FT)	2170		2790
ANNUAL RUNOFF (CFSM)	0.10		0.13
10 PERCENT EXCEEDS	7.8		7.7
50 PERCENT EXCEEDS	0.11		0.20
90 PERCENT EXCEEDS	0.00		0.00

e Estimated

GILA RIVER BASIN

09503300 GRANITE CREEK BELOW WATSON LAKE NEAR PRESCOTT, AZ

LOCATION.--Lat 34° 36' 49" long 112° 25' 02", in NW¹/₄NE¹/₄NE¹/₄ sec. 12, T.14 N., R.2 W., Yavapai County, Hydrologic Unit 15060202, 150 ft downstream of bridge on the U.S. Highway ALT 89, 6 mi north of Prescott, and 10 mi south of Chino Valley.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--Sept. 1999 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,020 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records poor. Flow is partially regulated by Goldwater Reservoirs (2) on Bannon Creek and by Willow Creek and Watson Reservoirs. No diversion above station 09503000 (telecom with City Engineer 2/96). There is a diversion gate and canal at the gage, which conveys up to several ft³/s during the growing season.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 247 ft³/s Sept. 23, 1999, gage height 4.87 ft, from an extension of the rating curve based on an equation for free weir flow. No flow for many days during the period of record.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 120 ft³/s Sept. 7 at 1845, gage height, 4.50 ft. Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.04	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04	0.00	0.00	0.00	0.01
6	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.04	0.00	0.00	0.01	5.0
7	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.04	0.00	0.00	0.01	22
8	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.04	0.00	0.00	0.01	3.9
9	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.04	0.00	0.00	0.01	0.05
10	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.04	0.00	0.00	0.01	0.05
11	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.00	1.4
12	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.00	0.03
13	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.00	0.01
14	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.03	0.00	0.00	0.00	0.01
15	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.01	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.06	0.04	0.01	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.06	0.05	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.08	0.04	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.08	0.05	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.06	0.04	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.04	0.03	0.00	0.00	0.01	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.05	0.03	0.00	0.00	0.01	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.05	0.03	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.05	0.03	0.00	0.00	0.00	0.00	0.13
29	0.00	0.00	0.00	0.00	---	0.05	0.02	0.00	0.00	0.00	0.00	1.5
30	0.00	0.00	0.00	0.00	---	0.05	0.02	0.00	0.00	0.00	0.00	1.6
31	0.00	---	0.00	0.00	---	0.06	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.86	1.38	0.57	0.00	0.01	0.02	35.67
MEAN	0.000	0.000	0.000	0.000	0.000	0.028	0.046	0.018	0.000	0.000	0.001	1.189
MAX	0.00	0.00	0.00	0.00	0.00	0.08	0.09	0.04	0.00	0.01	0.01	22
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
MED	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.01	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2002, BY WATER YEAR (WY)

	1999	2000	2001	2002	1999	2000	2001	2002	1999	2000	2001	2002
MEAN	0.369	0.054	0.046	0.251	0.419	2.547	0.142	0.045	0.042	0.011	0.593	2.052
MAX	1.07	0.083	0.14	0.64	1.08	7.15	0.25	0.12	0.13	0.027	1.03	11.0
(WY)	2001	2001	2000	2001	2001	2001	2001	2001	2001	2001	2001	1999
MIN	0.000	0.000	0.000	0.000	0.000	0.028	0.046	0.000	0.000	0.000	0.001	0.000
(WY)	2002	2002	2002	2002	2002	2002	2002	2000	2000	2002	2002	2001

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1999 - 2002

ANNUAL TOTAL	319.73	38.51		
ANNUAL MEAN	0.876	0.106	0.569	
HIGHEST ANNUAL MEAN			11.0	1999
LOWEST ANNUAL MEAN			0.11	2002
HIGHEST DAILY MEAN	62	Mar 10	22	Sep 7
LOWEST DAILY MEAN	0.00	May 22	0.00	Oct 1
ANNUAL SEVEN-DAY MINIMUM	0.00	May 22	0.00	Oct 1
10 PERCENT EXCEEDS	0.96		0.41	
50 PERCENT EXCEEDS	0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00	

GILA RIVER BASIN

09503700 VERDE RIVER NEAR PAULDEN, AZ

LOCATION.--Lat 34° 53'40", long 112° 20'32", in SW_{1/4}SE_{1/4} sec. 39, T.18 N., R.1 W., Yavapai County, Hydrologic Unit 15060202, in Prescott National Forest, on right bank 0.3 mi upstream from Verde Valley Ranch, 7 mi east of Paulden, 8 mi upstream from Hell Canyon, 8 mi downstream from Granite Creek, and 10 mi downstream from Sullivan Lake.

DRAINAGE AREA.--2,507 mi² (includes 357 mi² in Aubrey Valley Playa, a closed basin).

PERIOD OF RECORD.--July 1963 to current year.

REVISED RECORDS.--WDR AZ-83-1: 1981. WDR AZ-89-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,117 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Diversions and storage above station for irrigation and municipal use.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,200 ft³/s Feb. 20, 1993, gage height, 14.25 ft, from rating curve extended above 7,600 ft³/s on basis of slope-area measurement of peak flow; minimum daily discharge, 15 ft³/s May 13-23, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 10.....	1915	*1610	*5.31

Minimum daily discharge, 20 ft³/s on many days.

DISCHARGE, CUBIC FEET PER SECOND, 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	23	24	25	24	24	23	22	21	20	20	20
2	23	23	24	25	24	24	23	22	21	21	20	20
3	23	23	24	25	24	24	23	22	21	21	20	20
4	23	23	25	24	24	24	23	22	21	21	20	20
5	23	25	24	24	25	24	23	22	20	20	20	21
6	24	24	24	24	24	24	23	22	20	20	20	22
7	30	24	24	24	24	24	23	22	20	20	21	30
8	23	24	24	24	24	24	22	22	20	20	20	67
9	22	23	24	25	24	24	23	22	20	20	20	32
10	22	23	24	25	24	24	23	22	20	20	20	247
11	22	23	24	24	24	23	23	22	20	20	20	80
12	22	23	24	24	24	23	22	22	20	20	20	33
13	22	23	24	24	24	23	23	22	20	20	20	25
14	22	23	24	24	24	23	23	21	20	20	20	23
15	22	23	24	24	24	23	22	21	20	21	20	22
16	22	23	24	24	24	23	22	21	20	21	20	21
17	22	23	24	24	24	22	22	21	20	20	20	21
18	22	23	24	24	24	23	23	21	20	20	20	21
19	22	23	24	24	24	23	22	21	20	20	20	21
20	22	23	24	24	24	22	22	21	20	20	20	21
21	22	23	24	24	24	22	22	21	20	20	20	21
22	22	23	24	24	24	23	23	21	20	20	20	21
23	22	23	24	24	24	23	22	21	20	20	20	21
24	22	23	24	24	24	22	22	21	20	21	20	21
25	22	23	24	24	24	22	22	21	20	21	20	21
26	23	23	24	24	24	23	22	21	20	21	20	21
27	23	23	24	24	24	23	22	21	20	20	20	21
28	23	23	24	24	24	23	22	21	20	20	20	21
29	23	23	24	24	---	23	22	21	20	20	20	21
30	23	24	25	24	---	22	22	21	20	20	20	21
31	23	---	25	24	---	23	---	21	---	20	20	---
TOTAL	703	696	747	749	673	717	674	664	604	628	621	997
MEAN	22.68	23.20	24.10	24.16	24.04	23.13	22.47	21.42	20.13	20.26	20.03	33.23
MAX	30	25	25	25	25	24	23	22	21	21	21	247
MIN	22	23	24	24	24	22	22	21	20	20	20	20
AC-FT	1390	1380	1480	1490	1330	1420	1340	1320	1200	1250	1230	1980
CFSM	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
IN.	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2002, BY WATER YEAR (WY)

	30.90	26.84	40.77	57.09	112.2	71.81	32.30	24.83	23.88	25.52	30.36	37.27
MEAN	30.90	26.84	40.77	57.09	112.2	71.81	32.30	24.83	23.88	25.52	30.36	37.27
MAX	200	43.7	295	861	1443	669	155	30.7	27.5	36.4	80.9	440
(WY)	1973	1986	1966	1993	1993	1978	1965	1967	1995	1996	1964	1983
MIN	18.7	20.4	21.9	21.7	19.6	19.3	21.3	16.2	20.1	18.4	20.0	20.4
(WY)	1964	1965	1978	1972	1964	1972	1972	1964	1964	1963	2002	1978

SUMMARY STATISTICS

FOR 2002 WATER YEAR

WATER YEARS 1963 - 2002

ANNUAL TOTAL	8473	
ANNUAL MEAN	23.21	42.38
HIGHEST ANNUAL MEAN		215
LOWEST ANNUAL MEAN		22.5
HIGHEST DAILY MEAN	247	Sep 10
LOWEST DAILY MEAN	20	Jun 5
ANNUAL SEVEN-DAY MINIMUM	20	Jun 5
ANNUAL RUNOFF (AC-FT)	16810	30700
ANNUAL RUNOFF (CFSM)	0.011	0.020
ANNUAL RUNOFF (INCHES)	0.15	0.27
10 PERCENT EXCEEDS	24	29
50 PERCENT EXCEEDS	22	25
90 PERCENT EXCEEDS	20	22

GILA RIVER BASIN

09504000 VERDE RIVER NEAR CLARKDALE, AZ

LOCATION.--Lat 34° 51'08", long 112° 03'55", in SE1/4NW1/4SE1/4 sec. 17, T.17 N., R.3 E., Yavapai County, Hydrologic Unit 15060202, in Prescott National Forest, on left bank 1.7 mi downstream from Sycamore Creek and 5.6 mi north of Clarkdale.

DRAINAGE AREA.--3,503 mi², of which 364 mi² is noncontributing including 357 mi² in Aubrey Valley Playa, a closed basin.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1915 to Oct. 1916, May 1917 to July 1921, Apr. 1965 to current year.

REVISED RECORDS.--WSP 1213: 1917, 1920. WDR AZ--89--1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,500 ft above sea level, from topographic map. June 1915 to June 1921, at site 2.5 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,200 ft³/s Feb. 20, 1993, gage height, 26.39 ft, from rating curve extended above 20,000 ft³/s on basis of slope-area measurement at 53,200 ft³/s; minimum daily, 55 ft³/s Aug. 31 and Sept. 1, 1920.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 6	2215	*1,360	*3.17

Minimum daily discharge, 65 ft³/s on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	76	76	75	80	79	77	71	68	65	66	67
2	70	76	76	75	80	79	76	72	68	65	68	67
3	70	76	75	76	81	79	76	72	68	66	69	67
4	70	77	77	75	80	80	75	71	69	67	69	67
5	70	79	76	75	81	80	73	71	68	67	68	68
6	241	79	75	75	80	80	75	71	68	66	68	70
7	277	78	74	75	80	80	75	71	67	66	68	175
8	99	77	73	76	80	80	73	71	67	66	67	135
9	81	77	73	77	80	79	72	70	66	65	66	125
10	77	77	74	76	80	80	72	70	66	67	66	102
11	75	78	73	76	80	80	71	70	66	67	66	466
12	77	78	73	76	80	79	72	70	67	67	66	198
13	76	78	72	76	80	79	71	70	66	67	66	102
14	76	78	72	77	80	79	71	70	66	67	66	79
15	75	78	73	77	80	79	72	70	66	68	67	74
16	75	78	72	78	80	80	72	70	66	74	67	72
17	75	78	72	77	80	80	71	69	66	70	67	71
18	75	78	72	77	80	80	71	69	66	69	66	70
19	75	78	72	77	80	79	71	69	66	68	66	69
20	75	78	72	78	80	79	71	69	66	68	76	69
21	75	78	73	78	79	79	71	69	66	67	71	69
22	76	78	73	78	79	79	72	70	66	66	67	68
23	75	78	73	79	80	79	72	70	66	66	67	69
24	75	77	73	78	80	79	72	70	66	67	67	68
25	75	78	73	78	79	79	72	70	65	70	67	68
26	75	77	73	79	79	79	71	70	65	67	67	68
27	75	77	74	79	79	79	72	70	65	66	66	69
28	75	76	74	80	79	79	72	70	65	66	67	69
29	76	77	75	80	---	81	71	69	65	65	67	69
30	76	77	76	80	---	80	71	69	65	65	67	69
31	76	---	76	79	---	78	---	68	---	66	67	---
TOTAL	2708	2325	2285	2392	2236	2461	2173	2171	1990	2076	2088	2899
MEAN	87.35	77.50	73.71	77.16	79.86	79.39	72.43	70.03	66.33	66.97	67.35	96.63
MAX	277	79	77	80	81	81	77	72	69	74	76	466
MIN	70	76	72	75	79	78	71	68	65	65	66	67
AC-FT	5370	4610	4530	4740	4440	4880	4310	4310	3950	4120	4140	5750

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2002, BY WATER YEAR (WY)

MEAN	115.8	122.8	184.9	199.1	443.2	458.8	196.1	87.24	76.57	101.2	100.7	104.7
MAX	1080	736	1032	2800	3485	2763	1520	355	90.5	670	201	670
(WY)	1973	1920	1966	1993	1980	1978	1973	1973	1987	1919	1919	1983
MIN	67.9	69.6	73.7	73.4	73.8	73.2	68.6	68.5	61.6	64.1	67.4	66.3
(WY)	1979	1967	2002	1967	1972	1972	1968	1966	1974	1978	2002	1920

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1915 - 2002
ANNUAL TOTAL	32804	27804	
ANNUAL MEAN	89.87	76.18	179.4
HIGHEST ANNUAL MEAN			645
LOWEST ANNUAL MEAN			76.2
HIGHEST DAILY MEAN	1040	Mar 14	30000
LOWEST DAILY MEAN	67	May 31	55
ANNUAL SEVEN-DAY MINIMUM	67	Jun 6	59
MAXIMUM PEAK FLOW			50600
MAXIMUM PEAK STAGE			19.10
ANNUAL RUNOFF (AC-FT)	65070	55150	129900
10 PERCENT EXCEEDS	87	80	187
50 PERCENT EXCEEDS	75	73	82
90 PERCENT EXCEEDS	69	66	72

09504000 VERDE RIVER NEAR CLARKDALE, AZ—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Mar. 1976 to Oct. 1979, Jan. 1980 to Aug. 1983 and Oct. 1986 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TUR-BID-ITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
DEC 17...	1245	9	72	1.9	680	11.6	113	8.0	508p	18.0	9.0	240	53.0
FEB 26...	1140	9	79	2.1	682	10.8	113	8.3	502	21.3	12.1	210	48.0
APR 22...	1100	9	72	2.3	675	9.5	108	8.2	497	27.5	15.8	230	51.0
JUN 04...	1025	9	70	2.8	670	9.1	113	8.2	503	27.0	19.2	220	52.0
JUN 04...	1035	7	70	5.9	670	9.1	113	8.2	502	27.0	19.2	220	52.0
AUG 26...	1455	9	66	3.6	672	10.9	146	8.3	494	35.4	23.3	210	48.0

Date	CALCIUM TOTAL RECOVERABLE (MG/L AS CA) (00916)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, TOTAL RECOVERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)
DEC 17...	55.0	25.0	24.0	2.00	.7	25.0	266p	321	2	13.0	.2	8.50	3
FEB 26...	50.0	23.0	24.0	1.80	.7	25.0	261	311	3	13.0	.2	8.10	7
APR 22...	52.0	24.0	24.0	1.90	.7	24.0	258	310	3	13.0	.2	7.70	6
JUN 04...	52.0	23.0	24.0	2.00	.7	23.0	266	318	3	12.0	.2	7.50	6
JUN 04...	52.0	23.0	24.0	1.90	.7	23.0	255	305	3	12.0	.2	7.50	6
AUG 26...	49.0	23.0	24.0	2.00	.7	22.0	239	284	4	12.0	.2	6.80	2

Date	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	E COLI, MTEC MF WATER (COL/100 ML) (31633)	COLI-FECAL, UM-MF (COLS./100 ML) (31625)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)
DEC 17...	.33	239	287	<.20	.02	.03	.150	<.02	<5	E3k	E2k	<1	<1
FEB 26...	.38	279	276	<.20	.02	.03	.060	.04	6	E4k	E5k	<1	<1
APR 22...	.39	290	277	<.20	<.01	--	.040	.12	<5	E9k	E9k	<1	<1
JUN 04...	.39	285	279	<.20	E.02	--	E.040	<.02	<5	E14k	E6k	<1	<1
JUN 04...	.39	288	273	<.20	E.02	--	E.040	<.02	<5	--	--	<1	<1
AUG 26...	.35	259	257	<.20	<.01	--	.020	<.02	<5	E5k	--	<1	<1

GILA RIVER BASIN

09504000 VERDE RIVER NEAR CLARKDALE, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BORON, DIS- SOLVED (UG/L AS B) (01020)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)
DEC 17...	17	17	180	190	<1	<1	157	157	<.5	<.5	<1	1	<2
FEB 26...	18	21	170	180	<1	<1	160	164	<.5	<.5	<1	<1	<2
APR 22...	16	16	180	190	<1	<1	163	167	<.5	<.5	<1	<1	<2
JUN 04...	16	15	200	200	<1	<1	163	161	<.5	<.5	<1	<1	<2
JUN 04...	17	17	200	200	<1	<1	163	161	<.5	<.5	<1	1	<2
AUG 26...	18	19	190	200	<1	<1	156	158	<.5	<.5	<1	<1	<2

Date	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)
DEC 17...	<2	4	130	<2	<2	5	7	<.10	<.1	<1	<1	<1	<1
FEB 26...	<2	5	93	<2	<2	6	9	<.10	<.1	<1	<1	<1	<1
APR 22...	<2	4	128	<2	<2	7	11	<.10	<.1	<1	<1	<1	<1
JUN 04...	<2	4	141	<2	<2	6	10	<.10	<.1	<1	<1	<1	<1
JUN 04...	<2	3	143	<2	<2	6	10	<.10	<.1	<1	<1	<1	<1
AUG 26...	<2	4	89	<2	<2	6	8	<.10	<.1	<1	<1	<1	<1

Date	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	STRON- TIUM, TOTAL RECOV- ERABLE (UG/L AS SR) (01082)	THAL- LIUM, DIS- SOLVED (UG/L AS TL) (01057)	THAL- LIUM, TOTAL (UG/L AS TL) (01059)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- SUS- PENDE (T/DAY) (80155)
DEC 17...	<1	<1	210	<2	<2	3	<2	30	5.8
FEB 26...	<1	<1	190	<2	<2	<2	3	8.0	1.7
APR 22...	<1	<1	190	<2	<2	4	<2	33	6.4
JUN 04...	<1	<1	190	<2	<2	3	3	18	3.4
JUN 04...	<1	<1	190	<2	<2	3	3	--	--
AUG 26...	<1	<1	180	<2	<2	<2	<2	18	3.2

Remark codes used in this report:

< -- Less than
E -- Estimated value

Value qualifier codes used in this report:

k -- Counts outside acceptable range
p -- Value reported is preferred

09504000 VERDE RIVER NEAR CLARKDALE, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Water-quality measurements in the following table were made as part of the ADEQ Fixed-Station Network Program. The following analyses are quality-assurance samples processed during the 2002 sampling period and are defined in the introductory text section titled "Water-Quality Control Data".

Date	Time	Sample type	CALCIUM	MAGNE-	SODIUM,	NITRO-	NITRO-	NITRO-	PHOS-	ALUM-	BARIUM,	BERYL-	CADMIUM
			DIS-	SIUM,	DIS-	GEN,AM-	GEN,	GEN,	DIS-	DIS-	DIS-	DIS-	LIUM,
			SOLVED	SOLVED	SOLVED	ORGANIC	AMMONIA	NO2+NO3	PHORUS	DIS-	DIS-	DIS-	DIS-
			(MG/L	(MG/L	(MG/L	TOTAL	TOTAL	TOTAL	TOTAL	SOLVED	SOLVED	SOLVED	SOLVED
			AS CA	AS MG	AS NA	AS N)	AS N)	AS N)	AS P)	AS AL)	AS BA)	AS BE)	AS CD)
			(00915)	(00925)	(00930)	(00625)	(00610)	(00630)	(00665)	(01106)	(01005)	(01010)	(01025)
APR													
22...	1110	2	<.02	<.03	<.1	<.20	<.01	<.020	<.02	<3	<.5	<1	<.5

Date	CHRO-	COPPER,	IRON,	LEAD,	MANGA-	NICHEL,	ZINC,
	MIUM,	DIS-	DIS-	DIS-	NESE,	DIS-	DIS-
	SOLVED	SOLVED	SOLVED	SOLVED	SOLVED	SOLVED	SOLVED
	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L
	AS CR	AS CU)	AS FE)	AS PB)	AS MN)	AS NI)	AS ZN)
	(01030)	(01040)	(01046)	(01049)	(01056)	(01065)	(01090)
APR							
22...	<1	<2	<2	<2	<1	<1	<2

Remark codes used in this report:
 < -- Less than

GILA RIVER BASIN

09504420 OAK CREEK NEAR SEDONA, AZ

LOCATION.--Lat 34° 51' 42", long 111° 45' 40", in NE1/4NE1/4NE1/4 sec. 18, T.17 N., R.6 E., Coconino County, Hydrologic Unit 15060202, on left bank 290 ft downstream from State Highway 179 bridge in Sedona, 28 mi southwest of Flagstaff, and 35.1 mi upstream from mouth.

DRAINAGE AREA.--233 mi².

PERIOD OF RECORD.--Oct. 1981 to current year. Prior to Oct. 1995 published under station 09504430.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 4,169.20 ft above sea level (ADOT benchmark).

REMARKS.--No estimated daily discharges. Records good. Many diversions above and below station for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,200 ft³/s Feb. 19, 1993, gage height, 20.33 ft, from outside floodmark, from rating curve extended above 8,000 ft³/s on the basis of contracted-opening of peak flow; minimum daily, 19 ft³/s June 12, 1986.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 6	2030	*259	*3.52

Minimum daily discharge, 25 ft³/s on June 28 and Sept. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	32	34	33	34	34	31	28	27	26	27	26
2	29	32	34	32	34	34	31	28	27	26	32	26
3	29	32	34	32	34	34	31	29	27	27	29	26
4	29	32	39	33	34	34	30	28	27	28	34	26
5	29	34	36	32	34	34	30	28	27	27	29	25
6	52	34	34	32	34	34	31	28	27	27	29	26
7	38	33	34	32	34	34	32	27	27	27	29	48
8	33	33	35	32	34	34	31	27	27	27	28	57
9	32	33	35	33	34	34	30	27	27	27	28	34
10	32	33	36	32	34	34	30	27	27	28	28	37
11	31	33	35	32	34	34	30	27	27	28	28	45
12	31	33	35	32	34	33	29	27	27	27	28	36
13	31	33	34	33	34	33	29	27	27	27	28	30
14	31	33	34	33	34	33	29	27	27	27	27	30
15	31	34	36	33	34	33	29	27	27	27	27	29
16	31	34	34	33	34	33	29	27	27	28	28	29
17	31	34	34	33	34	33	29	27	26	28	28	29
18	31	34	34	33	34	34	29	27	27	28	28	29
19	31	34	33	33	34	34	29	27	27	28	27	29
20	31	34	33	33	34	33	29	27	27	29	28	29
21	31	34	33	33	34	33	29	27	27	30	27	29
22	31	34	33	33	33	33	28	27	27	29	27	29
23	31	34	34	33	33	32	28	27	27	29	27	28
24	31	33	34	33	33	32	28	27	27	29	27	29
25	31	34	34	34	33	32	28	27	26	29	27	28
26	31	34	33	34	33	32	28	27	26	29	26	29
27	32	34	33	34	34	32	29	27	26	29	26	29
28	32	34	32	34	34	32	29	27	25	28	26	29
29	31	35	33	34	---	33	29	27	26	28	27	29
30	32	35	34	34	---	32	29	27	26	27	27	29
31	32	---	34	34	---	31	---	27	---	27	26	---
TOTAL	986	1005	1060	1021	947	1027	883	844	802	861	863	934
MEAN	31.81	33.50	34.19	32.94	33.82	33.13	29.43	27.23	26.73	27.77	27.84	31.13
MAX	52	35	39	34	34	34	32	29	27	30	34	57
MIN	28	32	32	32	33	31	28	27	25	26	26	25
AC-FT	1960	1990	2100	2030	1880	2040	1750	1670	1590	1710	1710	1850

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2002, BY WATER YEAR (WY)

MEAN	36.31	52.11	84.19	102.3	179.3	252.5	119.8	34.31	28.36	30.49	32.38	37.67
MAX	96.4	191	362	1084	980	703	376	67.1	34.0	44.5	49.1	103
(WY)	1987	1983	1983	1993	1993	1982	1998	1983	1995	1986	1992	1983
MIN	26.5	29.1	30.1	31.1	29.9	30.7	29.4	25.7	23.0	24.7	24.4	24.3
(WY)	1995	1996	1996	1986	1996	1996	2002	1989	1985	1985	1985	1989

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1982 - 2002

ANNUAL TOTAL	19322	11233	
ANNUAL MEAN	52.94	30.78	81.98
HIGHEST ANNUAL MEAN			249
LOWEST ANNUAL MEAN			30.7
HIGHEST DAILY MEAN	520	Mar 14	57
LOWEST DAILY MEAN	27	Jul 6	25
ANNUAL SEVEN-DAY MINIMUM	27	Jul 28	26
ANNUAL RUNOFF (AC-FT)	38330		22280
10 PERCENT EXCEEDS	114		34
50 PERCENT EXCEEDS	33		31
90 PERCENT EXCEEDS	28		27

09504500 OAK CREEK NEAR CORNVILLE, AZ

LOCATION.--Lat 34° 45'52", long 111° 53'25", in NW_{1/4}SW_{1/4} sec. 23, T.16 N., R.4 E., Yavapai County, Hydrologic Unit 15060202, on right bank 250 ft downstream from county highway bridge, 0.2 mi upstream from Page Springs, 4 mi northeast of Cornville, and 15 mi upstream from mouth.

DRAINAGE AREA.--355 mi².

PERIOD OF RECORD.--July 1940 to Sept. 1945, Apr. 1948 to current year.

REVISED RECORDS.--WSP 1149: 1948(M). WRD Ariz. 1974: 1973. WDR AZ--89--1: Drainage area. WDR AZ--98--1: 1997.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,470 ft above sea level, from topographic map. Prior to Mar. 10, 1981, at site 250 ft upstream at same datum.

REMARKS.--Records fair. Numerous diversions above and below station for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,400 ft³/s Feb. 19, 1980, gage height, 16.30 ft; maximum gage height, 19.15 ft, Feb. 20, 1993; minimum discharge, 6 ft³/s July 27, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1885, 23 ft in Mar. 1938, from floodmarks (upstream side of bridge).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 11.....	0030	*700	*3.84

Minimum daily discharge, 16 ft³/s on June 17, 19, 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	32	38	40	32	29	35	27	22	21	20	19
2	27	32	38	38	32	30	32	29	21	20	20	21
3	26	31	36	37	32	30	31	29	21	20	24	20
4	26	31	41	38	32	31	30	31	20	20	28	20
5	25	31	53	39	32	31	30	34	21	e20	23	20
6	26	32	38	38	32	30	30	33	22	21	21	22
7	96	30	34	36	33	30	33	27	23	20	21	59
8	31	30	35	36	32	29	32	26	22	20	19	139
9	29	30	35	36	31	29	31	27	25	20	19	114
10	28	30	35	36	32	29	33	25	24	20	18	35
11	27	30	35	35	33	29	33	25	21	21	18	178
12	27	31	35	35	33	31	34	25	17	22	18	55
13	26	32	34	35	33	32	36	28	17	22	18	27
14	25	32	33	38	32	31	37	24	17	22	17	26
15	26	32	35	38	32	31	35	25	17	23	17	25
16	25	32	36	40	31	33	33	25	17	22	17	24
17	25	32	35	38	32	35	32	25	16	22	18	24
18	25	32	37	36	31	35	31	24	17	23	18	24
19	25	31	36	37	30	35	29	23	16	22	18	24
20	26	32	34	37	30	33	30	22	16	23	18	23
21	27	32	34	37	30	33	28	22	17	22	17	23
22	27	32	34	37	30	34	28	22	17	22	18	23
23	28	32	35	36	30	35	30	e23	17	21	17	24
24	29	33	35	33	29	35	34	25	17	21	18	22
25	29	32	34	32	29	35	44	27	19	21	18	22
26	31	34	34	33	29	34	33	27	21	21	18	22
27	31	33	34	33	30	34	38	25	23	23	18	23
28	31	35	35	34	30	37	37	20	23	21	18	23
29	31	36	36	34	---	38	39	21	23	20	20	24
30	31	38	41	33	---	40	31	22	22	20	22	26
31	31	---	39	35	---	36	---	23	---	19	20	---
TOTAL	924	962	1124	1120	874	1014	989	791	591	655	594	1131
MEAN	29.81	32.07	36.26	36.13	31.21	32.71	32.97	25.52	19.70	21.13	19.16	37.70
MAX	96	38	53	40	33	40	44	34	25	23	28	178
MIN	25	30	33	32	29	29	28	20	16	19	17	19
MED	27	32	35	36	32	33	32	25	20	21	18	24
AC-FT	1830	1910	2230	2220	1730	2010	1960	1570	1170	1300	1180	2240
CFSM	0.08	0.09	0.10	0.10	0.09	0.09	0.09	0.07	0.06	0.06	0.05	0.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2002, BY WATER YEAR (WY)

MEAN	46.06	61.35	108.4	98.01	177.6	241.1	162.7	31.83	20.48	23.89	33.18	39.65
MAX	571	450	881	1304	1391	1323	1097	216	58.0	40.8	90.9	373
(WY)	1973	1966	1967	1993	1980	1978	1973	1973	1957	1951	1951	1970
MIN	20.1	22.7	29.6	32.2	31.2	28.8	25.0	17.1	13.7	14.1	12.9	14.7
(WY)	1990	1993	1996	1996	2002	1972	1996	1943	1943	1940	1944	1980

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1940 - 2002	
ANNUAL TOTAL	18898	10769		
ANNUAL MEAN	51.78	29.50	85.51	
HIGHEST ANNUAL MEAN			256	1993
LOWEST ANNUAL MEAN			19.6	1946
HIGHEST DAILY MEAN	539	Mar 14	14000	Dec 6 1966
LOWEST DAILY MEAN	18	Jun 20	8.0	Jul 10 1940
ANNUAL SEVEN-DAY MINIMUM	19	Jun 16	9.4	Aug 2 1944
ANNUAL RUNOFF (AC-FT)	37480	21360	61950	
ANNUAL RUNOFF (CFSM)	0.15	0.083	0.24	
10 PERCENT EXCEEDS	111	37	135	
50 PERCENT EXCEEDS	31	30	32	
90 PERCENT EXCEEDS	22	19	18	

e Estimated

GILA RIVER BASIN

09505200 WET BEAVER CREEK NEAR RIMROCK, AZ

LOCATION.--Lat 34° 40'29", long 111° 40'17", in NW_{1/4}SW_{1/4} sec. 24, T.15 N., R.6 E., Yavapai County, Hydrologic Unit 15060202, in Coconino National Forest, on right bank 4.5 mi northeast of Rimrock and 5.7 mi upstream from Red Tank Draw.

DRAINAGE AREA.--111 mi².

PERIOD OF RECORD.--Oct. 1961 to Sept. 1982 (continuous-record), Oct. 1982 to Sept. 1991 (annual maximums only), Oct. 1991 to current year.

REVISED RECORDS.--WRD Ariz. 1969: Drainage area. WRD AZ-93-1, 1993.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,020 ft above sea level.

REMARKS.--No estimated daily discharges. Records fair. No known diversion or regulation above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s Jan. 8, 1993, gage height, 17.21 ft from rating curve extended above 5,400 ft³/s on basis of slope-area measurement of peak flow; minimum, 5.4 ft³/s Aug. 14, 1962; July 1, 2, 5, 8, 9, 12, and 21, 1967; June 2-5, 10-12, and 28, 1993; and July 5 and 6, 1993.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept 10.....	2038	*3,590	*9.77a

Minimum daily discharge, 6.3 ft³/s, Dec. 7 and June 9.

a--from highwater mark, peak occurred between 15 minute recorded gage height values

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	6.6	7.8	7.9	7.4	7.8	7.5	6.7	6.5	6.8	7.7	6.9
2	7.0	6.6	7.8	7.6	7.4	7.8	7.5	6.8	6.5	6.8	9.3	6.8
3	7.1	6.6	7.8	7.8	7.4	7.8	7.4	6.8	6.6	7.0	8.5	6.8
4	7.1	6.6	9.1	7.8	7.4	7.8	7.4	6.7	6.6	7.1	9.1	6.7
5	7.0	7.0	7.7	7.8	7.2	7.8	7.4	6.7	6.6	7.1	8.2	6.7
6	7.0	7.1	6.4	7.7	7.2	7.7	7.7	6.7	6.5	6.9	8.0	7.0
7	7.4	6.8	6.3	7.6	7.2	7.6	7.7	6.7	6.5	6.9	7.6	12
8	7.4	6.7	6.5	7.6	7.4	7.8	7.5	6.7	6.4	6.8	7.5	11
9	7.3	6.7	6.6	7.7	7.2	7.8	7.4	6.7	6.3	6.9	7.4	8.4
10	7.2	6.8	6.9	7.8	7.3	7.8	7.4	6.6	6.4	7.5	7.3	226
11	6.9	6.8	7.1	7.7	7.4	7.8	7.3	6.6	6.5	7.2	7.3	66
12	6.9	6.7	7.2	7.6	7.5	7.9	7.3	6.6	6.5	7.2	7.3	11
13	7.0	6.6	7.2	7.5	7.5	7.9	7.2	6.6	6.5	7.4	7.2	8.2
14	7.0	6.6	7.2	7.5	7.6	7.9	7.1	6.7	6.4	7.6	7.2	7.7
15	6.7	6.6	7.3	7.6	7.4	7.9	7.1	6.7	6.4	7.6	7.2	7.4
16	6.7	6.6	7.3	7.6	7.4	7.9	7.2	6.7	6.4	7.5	7.2	7.2
17	6.7	6.6	7.3	7.6	7.7	7.8	7.3	6.7	6.5	7.8	7.2	7.1
18	6.8	6.5	7.3	7.6	7.6	8.2	7.2	6.7	6.5	7.4	7.2	7.1
19	6.8	6.5	7.3	7.6	7.7	8.1	7.2	6.7	6.6	7.4	7.1	7.1
20	6.8	6.5	7.7	7.6	7.7	7.9	7.2	6.7	6.6	7.4	7.4	7.1
21	6.7	6.5	7.8	7.6	7.6	7.8	7.1	6.7	6.5	7.3	7.3	7.1
22	6.8	6.5	7.8	7.6	7.6	7.8	6.9	6.8	6.5	7.3	7.1	7.1
23	6.8	6.5	7.8	7.6	7.7	7.8	6.9	6.8	6.5	7.4	7.2	7.0
24	6.8	6.5	7.6	7.5	7.6	7.8	6.8	6.7	6.6	7.7	7.0	7.0
25	6.8	6.7	7.6	7.6	7.6	7.8	6.6	6.7	6.6	7.5	7.0	7.0
26	6.6	7.3	7.5	7.6	7.7	7.7	6.6	6.7	6.6	7.5	7.0	7.1
27	6.6	7.6	7.4	7.5	7.6	7.7	6.6	6.7	6.6	7.4	6.9	7.1
28	6.6	7.6	7.6	7.2	7.7	7.6	6.6	6.7	6.6	7.4	6.9	7.1
29	6.6	7.6	7.7	7.3	---	8.3	6.6	6.7	6.7	7.3	7.0	7.0
30	6.6	7.8	7.7	7.4	---	7.8	6.6	6.6	6.7	7.2	7.0	6.9
31	6.6	---	7.9	7.4	---	7.6	---	6.5	---	7.3	6.9	---
TOTAL	212.9	204.1	230.2	235.5	209.7	242.7	214.3	207.4	195.7	225.6	230.2	504.6
MEAN	6.868	6.803	7.426	7.597	7.489	7.829	7.143	6.690	6.523	7.277	7.426	16.82
MAX	7.4	7.8	9.1	7.9	7.7	8.3	7.7	6.8	6.7	7.8	9.3	226
MIN	6.6	6.5	6.3	7.2	7.2	7.6	6.6	6.5	6.3	6.8	6.9	6.7
AC-FT	422	405	457	467	416	481	425	411	388	447	457	1000
CFSM	0.06	0.06	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.07	0.07	0.15
IN.	0.07	0.07	0.08	0.08	0.07	0.08	0.07	0.07	0.07	0.08	0.08	0.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2002, BY WATER YEAR (WY)

MEAN	13.78	14.10	29.14	41.22	66.69	104.7	66.29	10.74	6.691	8.691	10.65	11.39
MAX	231	128	253	601	438	500	433	109	9.88	28.0	75.0	81.9
(WY)	1973	1966	1979	1993	1980	1978	1973	1973	1972	1999	1992	1970
MIN	5.72	6.23	6.00	6.01	7.08	7.27	6.76	5.84	4.53	5.25	6.06	5.81
(WY)	1995	1996	1994	1994	1994	1967	1996	1993	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1962 - 2002
ANNUAL TOTAL	6184.5	2912.9	
ANNUAL MEAN	16.94	7.981	31.78
HIGHEST ANNUAL MEAN			103
LOWEST ANNUAL MEAN			7.70
HIGHEST DAILY MEAN	184	Mar 8	5230
LOWEST DAILY MEAN	5.6	Jun 30	4.2
ANNUAL SEVEN-DAY MINIMUM	5.7	Jun 28	4.3
ANNUAL RUNOFF (AC-FT)	12270	5780	23020
ANNUAL RUNOFF (CFSM)	0.15	0.072	0.29
ANNUAL RUNOFF (INCHES)	2.07	0.98	3.89
10 PERCENT EXCEEDS	44	7.8	54
50 PERCENT EXCEEDS	6.9	7.2	7.3
90 PERCENT EXCEEDS	6.1	6.6	6.2

GILA RIVER BASIN

09505350 DRY BEAVER CREEK NEAR RIMROCK, AZ

LOCATION--Lat 34° 43'43", long 111° 46'30", in NE1/4NW1/4 sec. 1, T.15 N., R.5 E., Yavapai County, Hydrologic Unit 15060202, in Coconino National Forest, on left upstream abutment of abandoned highway bridge, 1,000 ft upstream from present State Highway 179, and 5.5 mi north of Rimrock.

DRAINAGE AREA--142 mi².

PERIOD OF RECORD--Oct. 1960 to current year.

REVISED RECORDS--WRD Ariz. 1969: Drainage area.

GAGE--Water-stage recorder and concrete control. Datum of gage is 3,694.38 ft above sea level (AZ Highway Department benchmark).

REMARKS--Records good, except for estimated daily discharges, which are poor. No known diversions above station.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 26,600 ft³/s Sept. 5, 1970, gage height, 14.35 ft, from rating curve extended above 6,000 ft³/s on basis of computation of peak flow over weir at gage height 9.07 ft and 9.69 ft and slope-area measurement at gage height 14.35 ft; no flow for many days each year.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 600 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 7.....	2000	*1,210	*4.73

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	91
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e1.1
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.84
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.6
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e1.0
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.50
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	118.04
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.935
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	91
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MED	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	234
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
IN.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2002, BY WATER YEAR (WY)

MEAN	8.135	16.56	56.26	56.10	106.3	154.3	103.3	7.799	0.005	0.415	1.736	11.44
MAX	246	251	602	814	850	678	598	208	0.17	10.6	34.9	224
(WY)	1973	1966	1979	1993	1980	1978	1973	1973	1979	1999	1992	1970
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1961	1961	1961	1961	1961	1967	1972	1961	1961	1965	1962	1962

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1961 - 2002
ANNUAL TOTAL	6947.33	118.04	
ANNUAL MEAN	19.03	0.323	43.17
HIGHEST ANNUAL MEAN			144
LOWEST ANNUAL MEAN			0.32
HIGHEST DAILY MEAN	407	Mar 13	91
LOWEST DAILY MEAN	0.00	Jan 1	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00
ANNUAL RUNOFF (AC-FT)	13780	234	31270
ANNUAL RUNOFF (CFSM)	0.13	0.002	0.30
ANNUAL RUNOFF (INCHES)	1.82	0.03	4.13
10 PERCENT EXCEEDS	69	0.00	91
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

GILA RIVER BASIN

09505800 WEST CLEAR CREEK NEAR CAMP VERDE, AZ

LOCATION--Lat 34° 32'19", long 111° 41'36", in NW_{1/4}NW_{1/4} sec. 11, T.13 N., R.6 E., Yavapai County, Hydrologic Unit 15060203, in Coconino National Forest, on left bank at Bull Pen Ranch, 9 mi east of Camp Verde, and 11 mi upstream from mouth.

DRAINAGE AREA--241 mi².

PERIOD OF RECORD--Dec. 1964 to current year.

GAGE--Water-stage recorder. Elevation of gage is 3,630 ft above sea level, from topographic map.

REMARKS--Records fair.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 24,800 ft³/s Jan. 8, 1993, gage height, 13.22 ft, from floodmarks and rating curve extended above 2,700 ft³/s on basis of slope-area measurements at gage heights 8.3 ft, 10.15 ft, and 13.22 ft; minimum daily, 11 ft³/s Aug. 1 and 22, 1986.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 1,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 7.....	0145	*25	*0.65

Minimum daily discharge, 12 ft³/s June 23--25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	15	16	17	17	17	17	16	13	13	13	13
2	14	15	16	17	17	17	17	16	13	13	14	13
3	14	15	16	17	17	17	17	16	13	13	14	13
4	14	15	19	17	17	17	17	15	13	13	15	13
5	14	16	19	17	17	17	17	15	13	13	15	13
6	14	16	17	17	17	17	17	15	13	13	14	14
7	15	16	17	17	17	17	18	15	13	13	14	20
8	16	16	16	17	17	17	18	15	13	13	13	19
9	16	16	16	17	17	17	17	15	13	13	13	18
10	16	16	17	17	17	17	17	15	13	14	13	17
11	15	16	17	17	17	17	16	15	13	14	13	18
12	15	16	17	17	17	17	16	15	13	14	13	15
13	14	16	17	17	17	17	16	15	13	13	13	14
14	14	16	17	17	17	17	16	15	13	14	13	13
15	14	16	17	17	17	17	16	15	13	14	13	13
16	14	16	17	17	17	17	16	15	13	14	13	13
17	14	16	17	17	17	17	16	15	13	14	13	13
18	14	16	17	17	17	17	16	14	13	14	13	13
19	14	16	17	17	17	17	16	14	13	14	13	13
20	15	16	17	16	17	17	16	14	13	13	13	13
21	15	16	17	17	17	17	16	14	13	13	13	13
22	15	16	17	17	17	17	16	14	13	13	13	13
23	15	16	17	17	17	17	16	14	12	13	13	13
24	15	16	17	17	17	17	16	14	12	13	13	13
25	15	16	17	16	17	17	16	14	12	14	13	13
26	15	16	17	17	17	17	16	14	13	13	13	13
27	15	16	17	17	17	17	16	14	13	13	13	13
28	15	16	17	17	17	17	16	14	13	13	13	13
29	15	16	17	17	---	18	16	14	13	13	13	14
30	15	16	17	17	---	18	16	13	13	13	13	14
31	15	---	18	17	---	18	---	13	---	13	14	---
TOTAL	455	476	527	525	476	530	492	452	387	413	412	423
MEAN	14.68	15.87	17.00	16.94	17.00	17.10	16.40	14.58	12.90	13.32	13.29	14.10
MAX	16	16	19	17	17	18	18	16	13	14	15	20
MIN	14	15	16	16	17	17	16	13	12	13	13	13
AC-FT	902	944	1050	1040	944	1050	976	897	768	819	817	839

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2002, BY WATER YEAR (WY)

MEAN	31.42	27.31	78.14	76.60	136.7	198.4	113.7	24.88	16.25	17.68	21.96	21.94
MAX	458	110	758	1136	956	886	923	157	24.8	34.9	102	113
(WY)	1973	1973	1979	1993	1980	1978	1973	1973	1984	1999	1992	1983
MIN	13.8	15.2	15.7	16.3	14.8	15.3	15.4	14.3	12.9	13.3	13.3	14.0
(WY)	1977	1969	1970	1981	1974	1967	1967	2000	2002	2002	2002	2001

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1965 - 2002

ANNUAL TOTAL	12371	5568										
ANNUAL MEAN	33.89	15.25								63.55		
HIGHEST ANNUAL MEAN										199		1973
LOWEST ANNUAL MEAN										15.3		2002
HIGHEST DAILY MEAN	340	Mar 8				20	Sep 7		13100	Jan 8	1993	
LOWEST DAILY MEAN	14	Jun 7				12	Jun 23		11	Aug 1	1986	
ANNUAL SEVEN-DAY MINIMUM	14	Jun 7				13	Jun 19		12	Jun 25	1968	
ANNUAL RUNOFF (AC-FT)	24540					11040			46040			
10 PERCENT EXCEEDS	70					17			96			
50 PERCENT EXCEEDS	16					16			18			
90 PERCENT EXCEEDS	14					13			14			

09506000 VERDE RIVER NEAR CAMP VERDE, AZ

LOCATION.--Lat 34° 26' 54", long 111° 47' 21", in NW¹/₄ sec. 11, T.12 N., R.5 E. (unsurveyed), Yavapai County, Hydrologic Unit 15060203, in Prescott National Forest, on right bank 600 ft upstream from Chasm Creek, 9 mi southeast of Camp Verde, and 9.7 mi downstream from West Clear Creek.

DRAINAGE AREA.--5,009 mi², of which 365 mi² is noncontributing, including 357 mi² in Aubrey Valley Playa, a closed basin.

PERIOD OF RECORD.--Apr. 1934 to Sept. 1945 and Oct. 1988 to current year.

REVISED RECORDS.--WDR AZ-89-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,874.11 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Several diversions above station for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 119,000 ft³/s Feb. 20, 1993, gage height, 28.36 ft from floodmarks from rating curve extended above 17,000 ft³/s; minimum daily, 35 ft³/s July 15, 1997.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 8.....	0445	*3160	*8.02

Minimum daily discharge, 47 ft³/s July 7-8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	160	184	195	188	152	156	108	63	55	56	53
2	94	159	192	195	189	149	141	102	60	49	57	52
3	100	156	188	192	191	156	127	107	57	52	58	50
4	106	149	197	190	190	159	124	105	57	53	63	51
5	112	152	206	190	186	158	121	105	61	52	80	51
6	111	164	206	188	185	161	124	103	62	51	91	58
7	119	166	200	188	180	167	147	96	60	47	96	246
8	234	169	192	187	169	162	167	90	58	47	88	1060
9	256	171	190	188	163	157	163	86	59	51	80	558
10	207	163	191	187	171	163	159	81	59	59	74	590
11	188	165	193	185	171	158	151	81	58	59	69	1280
12	175	167	193	186	171	149	142	92	59	61	61	640
13	172	164	191	186	167	148	128	93	59	61	51	437
14	167	172	190	187	158	155	120	91	54	63	49	303
15	150	171	192	189	156	150	115	86	55	73	50	245
16	143	172	191	190	155	150	108	77	60	71	51	211
17	150	171	190	189	155	158	114	76	59	83	51	190
18	145	167	188	188	157	169	117	71	53	84	51	169
19	140	163	188	187	159	171	112	70	56	81	53	139
20	134	169	191	186	158	169	109	69	54	81	53	124
21	136	172	190	186	153	158	107	67	51	75	51	120
22	137	167	185	189	152	152	109	74	48	72	51	109
23	135	169	185	188	151	142	101	72	52	71	49	107
24	134	169	184	186	147	138	105	74	53	74	51	102
25	133	173	185	187	143	138	105	79	55	67	52	96
26	137	175	185	188	140	136	101	78	58	73	52	92
27	146	174	186	187	146	136	103	76	57	70	51	95
28	146	174	186	187	154	139	112	73	55	74	56	97
29	142	181	190	187	---	143	119	74	53	69	55	104
30	138	180	192	186	---	152	114	73	52	59	52	113
31	151	---	194	185	---	156	---	69	---	58	52	---
TOTAL	4538	5024	5915	5829	4605	4751	3721	2598	1697	1995	1854	7542
MEAN	146.4	167.5	190.8	188.0	164.5	153.3	124.0	83.81	56.57	64.35	59.81	251.4
MAX	256	181	206	195	191	171	167	108	63	84	96	1280
MIN	94	149	184	185	140	136	101	67	48	47	49	50
AC-FT	9000	9970	11730	11560	9130	9420	7380	5150	3370	3960	3680	14960
CFSM	0.03	0.04	0.04	0.04	0.04	0.03	0.03	0.02	0.01	0.01	0.01	0.05
IN.	0.04	0.04	0.05	0.05	0.04	0.04	0.03	0.02	0.01	0.02	0.01	0.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2002, BY WATER YEAR (WY)

	MEAN	185.9	206.3	288.4	579.7	1035	1305	646.0	129.9	81.84	109.1	192.9	241.6
MAX	551	338	1350	7156	6160	4028	3050	337	123	232	616	1152	
(WY)	1941	1941	1941	1993	1993	1938	1941	1941	1992	1999	1992	1939	
MIN	106	167	189	188	164	153	118	74.6	56.6	48.4	59.8	83.0	
(WY)	1992	2002	2001	2002	2002	2002	1996	2000	2002	1997	2002	1989	

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1935 - 2002
ANNUAL TOTAL	78908	50069	
ANNUAL MEAN	216.2	137.2	413.5
HIGHEST ANNUAL MEAN			1403
LOWEST ANNUAL MEAN			137
HIGHEST DAILY MEAN	2000	Mar 14	1280
LOWEST DAILY MEAN	46	Jun 13	47
ANNUAL SEVEN-DAY MINIMUM	49	Jun 13	50
ANNUAL RUNOFF (AC-FT)	156500	99310	299500
ANNUAL RUNOFF (CFSM)	0.047	0.030	0.089
ANNUAL RUNOFF (INCHES)	0.63	0.40	1.21
10 PERCENT EXCEEDS	432	190	663
50 PERCENT EXCEEDS	166	139	183
90 PERCENT EXCEEDS	65	53	78

GILA RIVER BASIN

09507500 FOSSIL CREEK DIVERSIONS TO CHILDS POWERPLANT, NEAR CAMP VERDE, AZ

LOCATION--Lat 34° 22'06", long 111° 39'56", in NE1/4SW1/4 sec. 20, T.11 N., R.7 E. (unsurveyed), Yavapai County, Hydrologic Unit 15060203, at head of Stehr Lake, 2.3 mi northeast of Childs powerplant, 4.4 mi by flume downstream from Irving powerplant, and 17 mi southeast of Camp Verde.

PERIOD OF RECORD--Jan. 1952 to current year.

GAGE--Water-stage recorder and weir in concrete flume. Datum of gage is 3,716.2 ft above sea level.

REMARKS--Records good. Record is obtained at the head of Stehr Lake, a regulatory basin, and shows the water used by Childs powerplant. Most of the flow originates at Fossil Springs, which are fairly constant. Diversion is made from Fossil Creek 8 mi upstream from this station and is first used by Irving powerplant. A second diversion from Fossil Creek enters the flume below Irving powerplant. Based on estimates and records for previous years, the flow through the Irving powerplant is estimated to be about 99 percent of the record published herewith.

EXTREMES FOR PERIOD OF RECORD--Maximum daily discharge, 58 ft³/s Aug. 1 and 2, 1982; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	41	41	41	40	41	40	36	39	39	37	36
2	41	41	41	41	40	41	39	37	39	40	37	36
3	41	41	41	41	40	41	39	38	39	40	36	36
4	41	41	41	41	41	41	39	38	39	40	36	36
5	41	41	41	41	41	41	39	38	39	40	36	35
6	41	41	41	41	41	41	39	38	39	39	36	36
7	41	41	41	41	41	41	39	38	39	40	36	36
8	41	41	40	41	41	41	38	39	38	40	36	35
9	40	41	41	41	40	41	38	40	39	32	36	36
10	41	41	41	41	40	41	39	40	39	38	36	36
11	41	41	41	41	40	36	39	40	39	38	36	36
12	41	41	41	40	41	40	39	39	39	39	36	36
13	42	41	40	41	41	41	39	19	39	39	36	36
14	42	41	41	41	41	37	39	21	39	39	36	36
15	41	41	41	41	41	40	38	40	39	37	36	36
16	38	41	41	41	41	41	38	40	39	39	36	36
17	42	41	41	41	41	41	38	40	39	39	36	36
18	42	41	41	41	41	40	37	39	39	39	36	36
19	41	41	41	41	41	36	37	39	39	39	36	36
20	41	41	41	41	41	41	37	39	39	39	36	36
21	41	41	41	41	40	41	37	39	39	39	36	36
22	41	41	41	41	41	41	36	39	39	39	36	36
23	41	41	41	41	41	41	36	39	39	39	36	36
24	41	41	41	40	41	41	37	39	39	37	36	36
25	42	40	41	40	40	41	37	39	31	38	36	36
26	42	40	41	41	41	41	36	39	35	38	36	36
27	43	40	41	41	41	41	36	39	39	37	36	36
28	43	40	41	41	41	41	36	39	39	37	36	36
29	42	41	41	41	---	41	36	39	39	37	36	36
30	41	41	41	41	---	41	36	39	39	37	36	36
31	41	---	41	40	---	40	---	39	---	37	36	---
TOTAL	1278	1226	1269	1267	1140	1253	1133	1167	1157	1190	1118	1078
MEAN	41.23	40.87	40.94	40.87	40.71	40.42	37.77	37.65	38.57	38.39	36.06	35.93
MAX	43	41	41	41	41	41	40	40	39	40	37	36
MIN	38	40	40	40	40	36	36	19	31	32	36	35
MED	41	41	41	41	41	41	38	39	39	39	36	36
AC-FT	2530	2430	2520	2510	2260	2490	2250	2310	2290	2360	2220	2140
CAL YR 2001	TOTAL 14952	MEAN 40.96	MAX 43	MIN 36	MED 41	AC-FT 29660						
WTR YR 2002	TOTAL 14276	MEAN 39.11	MAX 43	MIN 19	MED 40	AC-FT 28320						

GILA RIVER BASIN

09507580 EAST VERDE RIVER DIVERSION FROM EAST CLEAR CREEK, NEAR PINE, AZ

LOCATION--Lat 34° 25'04", long 111° 15'47", in NW¹/₄NE¹/₄ sec. 23, T.12 N., R.10 E. (unsurveyed), Gila County, Hydrologic Unit 15060203, on East Verde River at mouth of Mail Creek, 0.4 mi southeast of Washington Park, and 11 mi east of Pine.

PERIOD OF RECORD--Oct. 1965 to current year.

GAGE--Water-stage recorder and weir in concrete flume. Datum of gage is 5,774 ft above sea level (Phelps Dodge Corporation reference mark).

REMARKS--No estimated daily discharges. Records good. Diversion is 9.5 mi northeast from Blue Ridge Reservoir on East Clear Creek, in the Little Colorado River basin, to the East Verde River in the Gila River basin.

EXTREMES FOR PERIOD OF RECORD--Maximum daily discharge, 34 ft³/s Apr. 19 and 29, May 5-7, 10, 12, 15, 18, and June 2, 1969; no flow for long periods most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	14	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.7	0.00	0.00	0.00
6	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12	0.00	0.00	0.00
7	14	7.3	0.00	0.00	0.00	0.00	0.00	0.00	4.3	0.00	0.00	0.00
8	14	7.3	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00
9	14	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	13	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
26	13	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.7	6.8
27	13	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.3	12
28	4.3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.8	7.3
29	0.03	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	13	0.08
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	9.7	0.05
31	0.04	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	370.37	15.74	0.00	0.00	0.00	0.00	0.00	0.00	24.03	0.00	47.50	26.64
MEAN	11.95	0.525	0.000	0.000	0.000	0.000	0.000	0.000	0.801	0.000	1.532	0.888
MAX	14	7.3	0.00	0.00	0.00	0.00	0.00	0.00	12	0.00	13	12
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	735	31	0.00	0.00	0.00	0.00	0.00	0.00	48	0.00	94	53

CAL YR 2001	TOTAL	2236.33	MEAN	6.127	MAX	14	MIN	0.00	AC-FT	4440
WTR YR 2002	TOTAL	484.28	MEAN	1.327	MAX	14	MIN	0.00	AC-FT	961

GILA RIVER BASIN

09507980 EAST VERDE RIVER NEAR CHILDS, AZ

LOCATION.--Lat 34° 16'35", long 111° 38'17", in sec. 21, T.11 N., R.7 E. (unsurveyed), Gila County Hydrologic Unit 15060203, in Tonto National Forest, on left bank 1.6 mi upstream from mouth and 6 mi southeast of Childs.

DRAINAGE AREA.--331 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Sept. 1961 to Dec. 1965 and May 1967 to current year.

REVISED RECORDS.--WDR AZ--89--1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,500 ft above sea level, from topographic map. Sept. 1, 1961, to Dec. 15, 1965, at site 1 mi upstream at elevation of 2,600 ft above sea level, datum raised 0.38 ft Oct. 4, 1963. May 25, 1967, to July 20, 1972, at present site at datum 3.29 ft higher, datum lowered 2.00 ft Jan. 7, 1993.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Since Sept. 30, 1965, records include transbasin diversions from East Clear Creek to headwaters of East Verde River. (See sta 09507580 and 09398300.)

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,500 ft³/s Sept. 5, 1970, gage height, 22.5 ft, present datum, from profile past gage, from rating curve extended above 960 ft³/s on basis of slope-area measurements at gage heights 12.11 and 22.5 ft, present datum; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 11	1345	*131	*2.59

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	7.8	5.4	5.3	7.8	3.9	3.0	1.1	0.09	0.00	0.00	0.00
2	9.2	6.4	5.3	5.5	7.5	3.8	2.7	1.1	0.00	0.00	0.00	0.00
3	9.7	5.7	5.2	5.5	7.2	3.8	2.6	1.1	0.00	0.00	0.00	0.00
4	20	5.1	12	5.6	6.6	4.1	2.4	0.92	0.00	0.00	0.00	0.00
5	14	5.3	14	6.1	5.6	4.2	2.3	0.85	0.00	0.00	0.00	0.00
6	13	5.1	11	6.3	5.0	4.2	2.8	0.79	0.00	0.00	0.00	0.00
7	14	5.1	9.5	6.4	6.0	4.3	5.1	0.72	0.00	0.00	0.00	0.00
8	18	5.1	7.7	6.4	6.0	4.6	5.9	0.68	0.00	0.00	0.00	0.56
9	25	4.5	7.5	5.9	6.0	4.7	4.3	0.66	0.00	0.00	0.00	0.35
10	19	4.3	6.8	5.1	5.7	4.3	4.0	0.60	0.00	0.00	0.00	0.12
11	15	4.2	6.5	4.6	4.9	4.9	3.5	0.54	0.00	0.00	0.00	42
12	15	4.3	7.1	4.5	4.8	4.6	3.4	0.51	0.00	0.00	0.00	47
13	13	4.4	7.8	6.0	5.2	3.7	3.0	0.43	0.00	0.00	0.00	9.3
14	13	4.8	7.4	6.1	5.1	3.5	2.6	0.39	0.00	0.00	0.00	2.2
15	13	4.8	8.0	6.3	6.2	3.7	2.2	0.35	0.00	0.00	0.00	0.83
16	13	4.9	7.9	6.5	6.5	4.6	2.1	0.32	0.00	0.00	0.00	0.44
17	13	4.8	7.3	6.4	5.4	5.2	2.2	0.29	0.00	0.00	0.00	0.21
18	13	4.8	7.2	6.3	4.8	5.3	2.0	0.26	0.00	0.00	0.00	0.05
19	13	4.7	7.0	5.8	4.7	5.6	1.8	0.24	0.00	0.00	0.00	0.03
20	13	4.7	6.7	5.8	4.6	5.3	1.9	0.26	0.00	0.00	0.00	0.00
21	13	4.7	6.6	5.1	4.7	4.5	1.9	0.25	0.00	0.00	0.00	0.00
22	13	4.7	6.4	4.6	4.6	4.1	1.9	0.27	0.00	0.00	0.00	0.00
23	13	4.3	5.8	4.7	4.5	3.7	1.8	0.29	0.00	0.00	0.00	0.00
24	13	4.3	5.7	5.9	4.5	3.7	1.7	0.29	0.00	0.00	0.00	0.00
25	14	5.1	5.5	6.0	4.4	3.9	1.6	0.29	0.00	0.00	0.00	0.00
26	14	5.3	5.5	6.0	4.2	3.7	1.4	0.28	0.00	0.00	0.00	0.00
27	14	5.5	5.4	6.0	4.1	3.3	1.3	0.33	0.00	0.00	0.00	0.00
28	14	5.5	5.3	5.4	4.2	3.1	1.3	0.33	0.00	0.00	0.00	0.00
29	13	5.1	5.1	4.9	---	3.5	1.3	0.34	0.00	0.00	0.00	0.00
30	14	5.3	5.1	5.4	---	3.6	1.2	0.27	0.00	0.00	0.00	0.00
31	11	---	4.9	8.1	---	3.2	---	0.19	---	0.00	0.00	---
TOTAL	430.3	150.6	218.6	178.5	150.8	128.6	75.2	15.24	0.09	0.00	0.00	103.09
MEAN	13.88	5.020	7.052	5.758	5.386	4.148	2.507	0.492	0.003	0.000	0.000	3.436
MAX	25	7.8	14	8.1	7.8	5.6	5.9	1.1	0.09	0.00	0.00	47
MIN	8.4	4.2	4.9	4.5	4.1	3.1	1.2	0.19	0.00	0.00	0.00	0.00
AC-FT	854	299	434	354	299	255	149	30	0.2	0.00	0.00	204
CFSM	0.04	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.01
IN.	0.05	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2002, BY WATER YEAR (WY)

MEAN	29.57	32.91	56.00	124.4	156.3	171.7	84.50	27.45	16.99	20.23	33.26	29.40
MAX	308	157	443	1819	1147	968	421	115	48.8	60.9	203	282
(WY)	1973	1979	1979	1993	1980	1978	1998	1973	1980	1999	1992	1970
MIN	0.73	0.83	1.42	2.25	3.69	4.15	2.51	0.37	0.003	0.000	0.000	0.73
(WY)	1992	1963	1963	1963	1964	2002	2002	2000	2002	2002	2002	1972

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1961 - 2002

ANNUAL TOTAL	11261.0	1451.02										
ANNUAL MEAN	30.85	3.975								64.89		
HIGHEST ANNUAL MEAN										290		1993
LOWEST ANNUAL MEAN										3.98		2002
HIGHEST DAILY MEAN	856	Mar 10				47	Sep 12		11000	Jan 8	1993	
LOWEST DAILY MEAN	1.3	Jun 30				0.00	Jun 2		0.00	Jun 11	1996	
ANNUAL SEVEN-DAY MINIMUM	2.2	Jun 27				0.00	Jun 2		0.00	Jun 18	1996	
ANNUAL RUNOFF (AC-FT)	22340					2880			47010			
ANNUAL RUNOFF (CFSM)	0.093					0.012			0.20			
ANNUAL RUNOFF (INCHES)	1.27					0.16			2.66			
10 PERCENT EXCEEDS	52					9.2			100			
50 PERCENT EXCEEDS	9.9					3.7			22			
90 PERCENT EXCEEDS	5.1					0.00			2.0			

09507980 EAST VERDE RIVER NEAR CHILDS, AZ—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD --Dec. 1990 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TUR-BID-ITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, CENT-SATUR-ATION (00301)	PH WATER FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-AIRE (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CAC03) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA) (00916)
NOV 28...	1515	5.2	1.6	694	10.9	102	8.3	463	12.5	8.3	210	45.0	45.0
MAR 26...	1410	3.7	1.8	692	9.8	113	8.3	483	28.0	17.4	190	39.0	40.0
JUN 26...	1230	.0	1.4	693	8.6	123	8.0	1110	--	29.1	210	49.0	48.0
AUG 28...	1210	.0	10	692	8.2	121	7.9	1040	40.0	29.5	200	44.0	46.0

Date	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT DIS TOT IT (MG/L AS CAC03) (39086)	BICAR-BONATE WATER DIS IT (MG/L AS HCO3) (00453)	CAR-BONATE WATER DIS IT (MG/L AS CO3) (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
NOV 28...	23.0	23.0	2.00	.6	21.0	233	247	6	10.0	.3	6.40	<1	.35
MAR 26...	22.0	23.0	2.10	.9	28.0	226	264	6	16.0	.4	9.30	1	.38
JUN 26...	22.0	22.0	8.20	5	160	448	509	18	86.0	2.4	28.0	2	.84
AUG 28...	21.0	21.0	7.90	5	170	431	497	14	82.0	2.3	25.0	17	.84

Date	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS DIS-SOLVED (MG/L) (70301)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	E COLI, MTEC MF (COL/ 100 ML) (31633)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)
NOV 28...	258	235	<.20c1	<.01	<.020	--	--	<.02c1	<5	<1k	E2k	<1	<1
MAR 26...	276	253	<.20	<.01	<.020	--	--	<.02	<5	E1k	E3k	<1	<1
JUN 26...	619	626	<.20	<.01	<.020	--	--	<.02	<5	E14k	27	<1	<1
AUG 28...	621	613	.30	<.01	.050	.35	1.5	.04	12	--	--	<1	<1

Date	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
NOV 28...	34	36	65.0	65.0	<1	<1	153	154	<.5	<.5	<1	<1	<2
MAR 26...	51	51	57.0	62.0	<1	<1	219	239	<.5	<.5	<1	<1	4
JUN 26...	388	394	78.0	81.0	<1	<1	1690	1730	<.5	<.5	<1	<1	<2
AUG 28...	317	326	72.0	77.0	<1	<1	1630	1630	<.5	<.5	<1	<1	<2

GILA RIVER BASIN

09507980 EAST VERDE RIVER NEAR CHILDS, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	COPPER,	IRON,	IRON,	LEAD,	LEAD,	MANGA-	MANGA-	MERCURY	MERCURY	NICKEL,	NICKEL,	SELE-	SELE-
	TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	DIS- SOLVED (UG/L AS FE) (01046)	TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	DIS- SOLVED (UG/L AS PB) (01049)	TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	NESE, DIS- SOLVED (UG/L AS MN) (01056)	TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	DIS- SOLVED (UG/L AS HG) (71890)	TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	DIS- SOLVED (UG/L AS NI) (01065)	TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NIUM, DIS- SOLVED (UG/L AS SE) (01145)	NIUM, DIS- SOLVED (UG/L AS SE) (01147)
NOV 28...	<2	3	115	<2	<2	15	19	<.10	<.1	<1	<1	<1	<1
MAR 26...	<2	6	129	<2	<2	8	18	<.10	<.1	<1	<1	<1	<1
JUN 26...	<2	5	100	<2	<2	6	13	<.10	<.1	<1	<1	<1	<1
AUG 28...	<2	8	426	<2	<2	6	41	<.10	<.1	<1	1	<1	<1

Date	SILVER,	SILVER,	STRON-	THAL-	THAL-	ZINC,	ZINC,	SEDI-	SEDI-
	DIS- SOLVED (UG/L AS AG) (01075)	TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	TOTAL RECOV- ERABLE (UG/L AS SR) (01082)	LIUM, DIS- SOLVED (UG/L AS TL) (01057)	LIUM, DIS- SOLVED (UG/L AS TL) (01059)	DIS- SOLVED (UG/L AS ZN) (01090)	TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	MENT, DIS- SUS- PENDED (MG/L) (80154)	MENT, DIS- SUS- PENDED (T/DAY) (80155)
NOV 28...	<1	<1	230	<2	<2	2	<2	3.0	.04
MAR 26...	<1	<1	250	<2	<2	7	<2	3.0	.03
JUN 26...	<1	<1	560	<2	<2	8	<2	53	--
AUG 28...	<1	<1	510	<2	<2	4	3	23	--

Remark codes used in this report:

< -- Less than
E -- Estimated value

Value qualifier codes used in this report:

c -- See laboratory comment
k -- Counts outside acceptable range
l -- Sample lab preparation problem

09507980 EAST VERDE RIVER NEAR CHILDS, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Water-quality measurements in the following table were made as part of the ADEQ Fixed-Station Network Program. The following analyses are quality-assurance samples processed during the 2002 sampling period and are defined in the introductory text section titled "Water-Quality Control Data".

Date	Time	Sample type	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPE-CIFIC CONDUCTANCE (US/CM) (00095)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNESIUM DIS-SOLVED (MG/L AS MG) (00925)	SODIUM DIS-SOLVED (MG/L AS NA) (00930)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ALUMINUM DIS-SOLVED (UG/L AS AL) (01106)	BARIUM DIS-SOLVED (UG/L AS BA) (01005)
JUN 25...	1550	2	6.2	1	.04	<.03	<.1	<.20	<.01	<.020	<.02	<3	<.5
Date			BERYLLIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHROMIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)		
JUN 25...	<1	<.5	<1	<2	<2	<2	<1	<1	2				
0Remark codes used in this report:													
< -- Less than													

GILA RIVER BASIN

09508300 WET BOTTOM CREEK NEAR CHILDS, AZ
(HYDROLOGIC BENCHMARK STATION)

LOCATION.--Lat 34° 09'39", long 111° 41'32", in sec. 36, T.9 N., R.6 E. (unsurveyed), Gila County, Hydrologic Unit 15060203, in Tonto National Forest, on right bank 1.4 mi upstream from mouth and 13 mi south of Childs.

DRAINAGE AREA.--36.4 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1967 to current year.

REVISED RECORDS.--WRD Ariz. 1970: 1968(M).

GAGE.--Water-stage recorder. Elevation of gage is 2,320 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,380 ft³/s Jan. 8, 1993, gage height, 18.36 ft, from slope-area measurement of peak flow; no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 4	1600	*1.1	*3.94

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.16	0.34	0.28	0.28	0.19	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.16	0.34	0.28	0.26	0.18	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.15	0.34	0.28	0.27	0.18	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.61	0.34	0.28	0.28	0.15	0.00	0.00	0.00	0.00	0.00
5	0.00	0.02	0.48	0.34	0.28	0.28	0.14	0.00	0.00	0.00	0.00	0.00
6	0.00	0.03	0.24	0.34	0.28	0.28	0.27	0.00	0.00	0.00	0.00	0.00
7	0.00	0.03	0.22	0.34	0.28	0.28	0.32	0.00	0.00	0.00	0.00	0.00
8	0.03	0.04	0.20	0.34	0.28	0.28	0.21	0.00	0.00	0.00	0.00	0.00
9	0.11	0.02	0.22	0.34	0.28	0.28	0.18	0.00	0.00	0.00	0.00	0.00
10	0.04	0.01	0.26	0.34	0.28	0.28	0.15	0.00	0.00	0.00	0.00	0.00
11	0.00	0.04	0.28	0.30	0.28	0.27	0.12	0.00	0.00	0.00	0.00	0.00
12	0.00	0.05	0.28	0.29	0.28	0.28	0.10	0.00	0.00	0.00	0.00	0.00
13	0.00	0.05	0.28	0.30	0.28	0.27	0.06	0.00	0.00	0.00	0.00	0.00
14	0.00	0.06	0.28	0.31	0.28	0.25	0.02	0.00	0.00	0.00	0.00	0.00
15	0.00	0.06	0.28	0.30	0.28	0.25	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.06	0.28	0.31	0.28	0.27	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.07	0.28	0.34	0.28	0.28	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.07	0.28	0.30	0.28	0.28	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.07	0.28	0.28	0.28	0.26	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.06	0.28	0.29	0.28	0.26	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.07	0.28	0.30	0.28	0.25	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.07	0.28	0.29	0.28	0.25	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.09	0.28	0.28	0.28	0.24	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.09	0.28	0.28	0.28	0.25	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.12	0.28	0.28	0.28	0.25	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.12	0.28	0.28	0.26	0.24	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.13	0.28	0.29	0.28	0.23	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.14	0.28	0.28	0.28	0.23	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.14	0.28	0.28	---	0.26	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.15	0.28	0.34	---	0.24	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.29	0.38	---	0.22	---	0.00	---	0.00	0.00	---
TOTAL	0.18	1.86	8.59	9.70	7.82	8.10	2.27	0.00	0.00	0.00	0.00	0.00
MEAN	0.006	0.062	0.277	0.313	0.279	0.261	0.076	0.000	0.000	0.000	0.000	0.000
MAX	0.11	0.15	0.61	0.38	0.28	0.28	0.32	0.00	0.00	0.00	0.00	0.00
MIN	0.00	0.00	0.15	0.28	0.26	0.22	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.4	3.7	17	19	16	16	4.5	0.00	0.00	0.00	0.00	0.00
CFSM	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
IN.	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2002, BY WATER YEAR (WY)

MEAN	5.305	7.440	18.81	36.98	41.14	44.66	10.17	0.571	0.081	0.993	3.978	2.945
MAX	103	52.0	111	373	345	321	56.6	2.07	0.55	12.0	48.3	27.1
(WY)	1973	1979	1968	1993	1980	1978	1998	1983	1979	1985	1992	1970
MIN	0.006	0.062	0.28	0.26	0.28	0.26	0.076	0.000	0.000	0.000	0.000	0.000
(WY)	2002	2002	2002	1970	2002	2002	2002	1972	1970	1970	1972	1972

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1967 - 2002

ANNUAL TOTAL	3106.01	38.52										
ANNUAL MEAN	8.510	0.106								14.33		
HIGHEST ANNUAL MEAN										47.2		1993
LOWEST ANNUAL MEAN										0.11		2002
HIGHEST DAILY MEAN	237	Mar 10				0.61	Dec 4		3410	Jan 8		1993
LOWEST DAILY MEAN	0.00	May 24				0.00	Oct 1		0.00	Jul 6		1968
ANNUAL SEVEN-DAY MINIMUM	0.00	May 24				0.00	Oct 1		0.00	Jul 6		1968
ANNUAL RUNOFF (AC-FT)	6160					76			10380			
ANNUAL RUNOFF (CFSM)	0.23					0.003			0.39			
ANNUAL RUNOFF (INCHES)	3.17					0.04			5.35			
10 PERCENT EXCEEDS	24					0.28			21			
50 PERCENT EXCEEDS	0.15					0.00			0.48			
90 PERCENT EXCEEDS	0.00					0.00			0.00			

09508500 VERDE RIVER BELOW TANGLE CREEK, ABOVE HORSESHOE DAM, AZ

LOCATION--Lat 34° 04'23", long 111° 42'56", in sec. 35, T.9 N., R.6 E. (unsurveyed), Yavapai County, Hydrologic Unit 15060203, in Tonto National Forest, on right bank 1.3 mi downstream from Tangle Creek and 9 mi upstream from Horseshoe Dam.

DRAINAGE AREA--5,858 mi², of which 365 mi² is noncontributing, including 357 mi² in Aubrey Valley Playa, a closed basin.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD--Aug. 1945 to current year.

REVISED RECORDS--WDR AZ-89-1: Drainage area.

GAGE--Water-stage recorder. Datum of gage is 2,029.0 ft above sea level.

REMARKS--No estimated daily discharges. Records good. About 12,500 acres above station are irrigated by surface water and ground water. Low flow slightly regulated by powerplant 32 mi above station, using water from Fossil Creek. This station is above all major reservoirs on Verde River.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 145,000 ft³/s Jan. 8, 1993, gage height 23.4 ft, from slope-area measurement of peak flow; minimum, 48 ft³/s June 17, 1956, July 18 and 19, 1958, caused by power regulation on Fossil Creek; minimum daily, 58 ft³/s Aug. 15 and 18, 2002.

EXTREMES OUTSIDE PERIOD OF RECORD--Maximum discharge since at least 1888, 150,000 ft³/s Feb. 24, 1891, based on comparison with peak discharge at other stations on Verde River.

EXTREMES FOR CURRENT YEAR--:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 11	2245	2,850	9.35

Minimum daily discharge, 58 ft³/s Aug. 15 and 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	110	178	221	259	235	197	187	154	92	67	69	71
2	124	189	222	256	235	196	190	151	85	66	65	73
3	124	191	224	254	238	192	179	144	82	70	67	72
4	128	190	241	253	240	198	166	140	80	66	72	71
5	139	187	263	252	247	204	160	143	79	67	74	66
6	142	187	254	250	257	204	163	142	80	67	83	65
7	146	196	251	249	254	206	180	144	82	66	99	90
8	177	198	246	250	255	213	191	136	82	65	107	578
9	264	198	242	250	252	208	208	131	79	63	104	920
10	280	201	242	248	249	202	208	124	79	65	96	724
11	242	199	247	247	249	204	204	118	81	63	87	1210
12	211	199	251	246	250	205	195	109	81	77	81	1380
13	201	202	252	248	249	187	183	118	81	77	76	765
14	198	202	252	249	252	184	170	135	82	80	70	507
15	200	205	252	249	243	188	156	124	80	102	58	368
16	194	206	255	247	237	193	151	112	76	177	61	305
17	186	209	256	245	231	192	144	107	76	103	63	275
18	187	210	257	243	227	198	143	103	78	91	58	247
19	185	205	254	242	224	211	147	98	76	97	64	224
20	184	203	255	240	225	215	142	95	70	94	65	202
21	175	208	256	238	220	208	140	92	71	93	65	182
22	175	212	256	240	212	198	140	88	68	91	64	171
23	173	209	254	239	208	188	138	95	67	80	63	161
24	172	211	253	238	204	178	132	98	65	83	63	153
25	169	216	252	234	199	174	134	96	65	89	60	146
26	166	217	251	230	190	174	134	99	65	92	64	140
27	166	214	252	227	183	169	132	103	66	82	66	131
28	176	212	252	225	187	167	133	100	70	85	69	129
29	176	216	252	225	---	172	143	97	69	80	69	132
30	177	218	253	228	---	176	152	96	69	84	71	137
31	171	---	256	231	---	183	---	94	---	79	73	---
TOTAL	5518	6088	7724	7532	6452	5984	4845	3586	2276	2561	2246	9695
MEAN	178.0	202.9	249.2	243.0	230.4	193.0	161.5	115.7	75.87	82.61	72.45	323.2
MAX	280	218	263	259	257	215	208	154	92	177	107	1380
MIN	110	178	221	225	183	167	132	88	65	63	58	65
MED	176	204	252	246	236	196	154	109	79	80	69	166
AC-FT	10940	12080	15320	14940	12800	11870	9610	7110	4510	5080	4450	19230
CFSM	0.03	0.04	0.05	0.04	0.04	0.04	0.03	0.02	0.01	0.02	0.01	0.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2002, BY WATER YEAR (WY)

MEAN	323.2	359.9	703.7	822.4	1164	1497	840.2	211.3	132.0	175.9	318.3	277.9
MAX	4194	1384	4644	12420	11020	10420	5638	1322	316	430	1184	1463
(WY)	1973	1966	1979	1993	1980	1978	1973	1973	1955	1953	1951	1970
MIN	155	192	227	224	220	193	155	113	75.9	75.5	72.5	98.5
(WY)	1951	1963	1951	1961	1964	2002	1963	2000	2002	1958	2002	1956

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1946 - 2002	
ANNUAL TOTAL	115680		64507			
ANNUAL MEAN	316.9		176.7		566.2	
HIGHEST ANNUAL MEAN					2229	
LOWEST ANNUAL MEAN					177	
HIGHEST DAILY MEAN	2950	Mar 15	1380	Sep 12	110000	Jan 8 1993
LOWEST DAILY MEAN	74	Jun 15	58	Aug 15	58	Aug 15 2002
ANNUAL SEVEN-DAY MINIMUM	77	Jun 15	62	Aug 15	62	Aug 15 2002
ANNUAL RUNOFF (AC-FT)	229500		127900		410200	
ANNUAL RUNOFF (CFSM)	0.058		0.032		0.10	
10 PERCENT EXCEEDS	628		252		870	
50 PERCENT EXCEEDS	211		177		238	
90 PERCENT EXCEEDS	97		69		120	

GILA RIVER BASIN

09508500 VERDE RIVER BELOW TANGLE CREEK ABOVE HORSESHOE DAM, AZ—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD--Oct. 1980 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TUR-BID-ITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (MG/L) (00301)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS DISSOLV FLD. AS CAC03 (MG/L) (00904)	HARD-NESS TOTAL AS CAC03 (MG/L) (00900)	CALCIUM DIS-SOLVED AS CA (MG/L) (00915)
DEC 18...	1415	247	1.2	709	11.4	104	8.5	642	20.5	8.0	5	260	48.0
APR 03...	1220	179	20	705	8.9	103	8.4	675	30.5	18.4	10	260	45.0
JUN 13...	1340	80	19	704	8.0	106	8.4	772	36.5	25.4	15	270	43.0
AUG 09...	1110	108	25	707	7.1	96	8.4	796	40.0	26.7	15	290	46.0

Date	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA) (00916)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT IT FIELD (MG/L AS CAC03) (39086)	BICAR-BONATE WATER FIELD (MG/L AS HCO3) (00453)	CAR-BONATE WATER FIELD (MG/L AS CO3) (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)
DEC 18...	51.0	34.0	34.0	2.40	.9	35.0	255	287	12	24.0	.3	58.0	<1c1
APR 03...	49.0	36.0	37.0	2.70	1	43.0	250	295	5	27.0	.3	76.0	30
JUN 13...	47.0	39.0	40.0	3.40	1	56.0	252	284	12	38.0	.4	100	25
AUG 09...	51.0	42.0	41.0	3.80	2	63.0	258	308	12	40.0	.4	110	37

Date	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AM-MONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AM-MONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	E COLI, MTEC MF (COL/100 ML) (31633)	COLI-FORM, FECAL, UM-MF (COLS./100 ML) (31625)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)
DEC 18...	.48	E316c1	355	<.20	.01	.01	<.020	--	<.02	7	<1k	<1k	<1
APR 03...	.54	398	380	<.20	.02	.03	<.020	--	<.02	<5	E10k	E6k	<1
JUN 13...	.61	450	432	<.20	.02	.03	<.020	--	.02	<5	E3k	E6k	<1
AUG 09...	.66	488	469	.70	.02	.03	<.020	.68	.06	<5	E8k	--	<1

Date	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
DEC 18...	<1	18	18	90.0	93.0	<1	<1	159	160	<.5	<.5	<1	<1
APR 03...	<1	20	22	80.0	95.0	<1	<1	190	197	<.5	<.5	<1	1
JUN 13...	<1	22	26	72.0	83.0	<1	<1	251	255	<.5	<.5	<1	1
AUG 09...	<1	23	25	77.0	90.0	<1	<1	254	261	<.5	<.5	<1	1

09508500 VERDE RIVER BELOW TANGLE CREEK ABOVE HORSESHOE DAM, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)
DEC 18...	<2	<2	<2	80	<2	<2	3	6	<.10	<.1	<1	<1	<1
APR 03...	<2	<2	<2	801	<2	<2	7	33	<.10	<.1	<1	3	1
JUN 13...	<2	<2	<2	534	<2	<2	7	26	<.10	<.1	<1	2	<1
AUG 09...	<2	<2	<2	842	<2	<2	6	36	<.10	<.1	<1	3	<1

Date	SELE- NIUM, TOTAL SOLVED (UG/L AS SE) (01147)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	STRON- TIUM, TOTAL RECOV- ERABLE (UG/L AS SR) (01082)	THAL- LIUM, DIS- SOLVED (UG/L AS TL) (01057)	THAL- LIUM, TOTAL SOLVED (UG/L AS TL) (01059)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	SEDI- MENT, CHARGE, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- SUS- PENDED (T/DAY) (80155)
DEC 18...	<1	<1	<1	720	<2	<2	5	<2	3.0	2.0
APR 03...	1	<1	<1	900	<2	<2	7	4	44	21.3
JUN 13...	<1	<1	<1	940	<2	<2	4	2	62	13.4
AUG 09...	<1	<1	<1	1020	<2	<2	6	6	37	10.8

Remark codes used in this report:

- < -- Less than
- E -- Estimated value

Value qualifier codes used in this report:

- c -- See laboratory comment
- k -- Counts outside acceptable range
- l -- Sample lab preparation problem

GILA RIVER BASIN

09508500 VERDE RIVER BELOW TANGLE CREEK ABOVE HORSESHOE DAM, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Water-quality measurements in the following table were made as part of the ADEQ Fixed-Station Network Program. The following analyses are quality-assurance samples processed during the 2002 sampling period and are defined in the introductory text section titled "Water-Quality Control Data".

Date	Time	Sample type	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPE-CIFIC CONDUCTANCE (US/CM) (00095)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ALUMINUM, DIS-SOLVED (UG/L AS AL) (01106)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
JUN 13...	1345	2	6.2	1	.04	<.03	<.1	<.20	<.01	<.020	<.02	<3	<.5
Date			BERYLLIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM, DIS-SOLVED (UG/L AS CD) (01025)	CHROMIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)		
JUN 13...	<1	<.5	<1	<2	<2	<2	<1	<1	4				

0Remark codes used in this report:
 < -- Less than

09509500 RESERVOIR SYSTEM ON VERDE RIVER AT AND BELOW HORSESHOE DAM, AZ

LOCATION.--This system comprises two storage reservoirs created by Horseshoe and Bartlett Dams on Verde River, Maricopa and Yavapai Counties, Hydrologic Unit 15060203. Gages on Horseshoe Reservoir, formed by Horseshoe Dam, lat 33° 59'05", long 111° 42'35", in sec. 2, T.7 N., R.6 E. (unsurveyed); and Bartlett Reservoir, formed by Bartlett Dam, lat 33° 49'05", long 111° 37'52", in sec. 34, T.6 N., R.7 E. (unsurveyed).

DRAINAGE AREA.--6,157 mi² (at Bartlett Dam), of which 365 mi² is noncontributing, including 357 mi² in Aubrey Valley Playa, a closed basin.

PERIOD OF RECORD.--July 1939 to current year. Prior to 1946 published as "Bartlett Reservoir at Bartlett Dam."

REVISED RECORDS.--WDR AZ-89-1: Drainage area.

GAGE.--Water-stage recorders on dam structures. Datum of gage on Horseshoe Reservoir is 1,900.00 ft and on Bartlett Reservoir 1,599.46 ft above sea level. Prior to Oct. 14, 1964, Bartlett Reservoir gage datum was 10.00 ft higher.

REMARKS.--Horseshoe Reservoir is formed by earthfill and rockfill dam; dam completed and storage began Nov. 15, 1945. Bartlett Reservoir is formed by concrete multiple-arch dam; dam completed May 1939 and storage began Feb. 5, 1939. Total capacity of the two reservoirs (capacity tables dated 1978, based on survey in 1977-78) is 309,600 acre-ft divided as follows: Horseshoe Reservoir, 131,400 acre-ft between elevations 1,915.0 ft (sill of outlet gate) and 2,026.0 ft (top of spillway gates) Bartlett Reservoir, 178,200 acre-ft between elevations 1,619.46 ft (10 ft above sill of outlet gates) and 1,797.46 ft (top of spillway gates). No dead storage. Records given herein represent usable contents. Water is used for irrigation of Salt River Valley and for municipal supply.

COOPERATION.--Capacity tables furnished by Salt River Valley Water Users' Association.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents of system, 318,000 acre-ft May 9, 1973; no storage at times when natural flow of river was passed through reservoir system.

EXTREMES FOR CURRENT YEAR.--Maximum contents of system, 158,800 acre-ft Oct. 12; minimum, 60,690 acre-ft Dec. 30.

RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	158600	126500	81490	61210	71330	78340	83660	86320	84940	75320	72130	68490
2	158500	124300	80580	61560	71680	78470	83790	86290	84860	75190	72080	68380
3	158400	122400	79610	61900	72040	78630	83940	86310	84740	75000	71950	68210
4	158300	120600	78950	62240	72390	78800	84090	86340	84640	74800	71830	68060
5	158300	118800	78340	62580	72730	79010	84240	86410	84570	74650	71650	67930
6	158300	116900	77730	62920	73070	79220	84390	86460	84480	74490	71540	67790
7	158300	115000	77100	63260	73360	79430	84470	86490	84350	74370	71430	67640
8	158300	113400	76500	63630	73660	79670	84610	86530	84210	74230	71360	67560
9	158300	111700	75870	63960	73960	79920	84810	86560	84050	74090	71300	67750
10	158500	110000	75210	64230	74250	80080	84940	86600	83860	73950	71250	68610
11	158700	108400	74630	64530	74560	80300	85140	86560	83690	73750	71200	69640
12	158800	107000	74060	64780	74850	80530	85360	86560	83520	73620	71120	71300
13	158500	105600	73340	65020	75170	80720	85560	86550	83360	73490	71030	72510
14	157700	104100	72650	65320	75430	80860	85730	86530	83190	73340	70950	73510
15	156600	102500	72050	65630	75710	80960	85800	86510	83070	73180	70840	74360
16	155400	101100	71440	65990	75990	81090	85850	86490	82960	73180	70710	75000
17	154000	99870	70800	66320	76200	81270	85910	86460	82840	73210	70600	75380
18	152500	98610	70140	66620	76380	81450	85940	86410	82430	73180	70470	75640
19	150800	96860	69400	66960	76500	81610	85940	86360	81280	73150	70310	75880
20	149100	94980	68610	67300	76670	81820	85960	86250	80170	73080	70120	76060
21	147300	93220	67850	67640	76830	82030	86000	86100	79070	73050	70010	76200
22	145300	91780	67100	67970	76990	82240	86080	85980	78000	73000	69870	76320
23	143200	90450	66400	68300	77190	82400	86120	85860	76920	72990	69680	76420
24	141200	89180	65610	68630	77380	82560	86190	85760	76270	72920	69510	76500
25	139200	88170	64800	68930	77580	82690	86250	85660	76160	72840	69370	76550
26	137400	87100	63580	69220	77790	82830	86270	85490	76040	72780	69190	76570
27	135600	85940	62070	69590	77960	82950	86290	85330	75900	72700	69020	76550
28	134000	84740	61170	69930	78150	83040	86290	85250	75740	72620	68880	76530
29	132000	83560	60780	70270	---	83140	86290	85180	75600	72520	68790	76500
30	130200	82490	60690	70640	---	83290	86310	85130	75490	72410	68680	76480
31	128300	---	60850	70980	---	83460	---	85040	---	72260	68580	---
MAX	158800	126500	81490	70980	78150	83460	86310	86600	84940	75320	72130	76570
MIN	128300	82490	60690	61210	71330	78340	83660	85040	75490	72260	68580	67560
(*)	-30500	-45810	-21640	+10130	+7170	+5310	+2850	-1270	-9550	-3230	-3680	+7900
CAL YR 2001	MAX 174200	MIN 60690	(*) -39750									
WTR YR 2002	MAX 158800	MIN 60690	(*) -82120									

(*) Change in contents, in acre-feet.

09510000 VERDE RIVER BELOW BARTLETT DAM, AZ

LOCATION.--Lat 33° 48'30", long 111° 39'46", in NW_{1/4} sec. 5, T.5 N., R.7 E. (unsurveyed), Maricopa County, Hydrologic Unit 15060203, in Tonto National Forest, on right bank 2.1 mi downstream from Bartlett Dam, 4.0 mi upstream from Camp Creek, and 16 mi east of town of Cave Creek.

DRAINAGE AREA.--6,161 mi², of which 365 mi² is noncontributing, including 357 mi² in Aubrey Valley Playa, a closed basin.

PERIOD OF RECORD.--Aug. 1888 to current year. (Monthly discharge only Aug. 1888 to Dec. 1903, and Jan. 1910 to Sept. 1913. For some periods prior to Dec. 1903 gage heights, discharge measurements, and daily discharge hydrographs are published in reports of the Geological Survey.) Prior to Oct. 1941, published under different names as follows: "near Fort McDowell," "at mouth," "above Salt River," "at McDowell," "at McDowell near Lehi," "near McDowell," and "above Camp Creek, near McDowell."

REVISED RECORDS.--WSP 1049: 1893, 1913-14, 1917-18, 1926-27, 1929. WSP 1213: 1915-16. WDR AZ-89-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,570.34 ft above sea level. Gage at present site and datum 2.00 ft higher Jan. 1, 1942, to Sept. 30, 1961, Dec. 30, 1965, to Mar. 10, 1971, and Oct. 1, 1978, to Jan. 4, 1993; Mar. 2 to Sept. 30, 1978, used as supplementary gage, and Feb. 18, 1975, to Feb. 28, 1978, supplementary water-stage recorder at site 30 ft upstream at same datum. Oct. 1, 1961, to Dec. 29, 1965, and Mar. 11, 1971, to Sept. 30, 1973, water-stage recorder at site 1.9 mi upstream at datum 1,600 ft, from topographic map; at same site at datum 4.00 ft higher, Oct. 1, 1973, to Mar. 3, 1975, and 5.00 ft higher, Oct. 1, 1961, to Dec. 29, 1965, and Mar. 11, 1971, to Sept. 30, 1973. Feb. 17, 1925, to Dec. 31, 1941, water-stage recorder at two sites within 0.5 mi upstream from Camp Creek, at various datums. Prior to Feb. 17, 1925, nonrecording gages at several sites about 20 mi downstream from present location at various datums.

REMARKS.--Records good, except those for estimated daily discharge, which are poor. About 12,500 acres above station are irrigated by surface water and ground water. Flow completely regulated by Bartlett Reservoir since Feb. 5, 1939, and Horseshoe Reservoir since Nov. 15, 1945, except during periods of spill. Water diverted downstream for municipal supply for the city of Phoenix, and for irrigation in Fort McDowell Indian Reservation. Remainder (except during infrequent periods of extreme flooding) is diverted at Granite Reef Dam on Salt River 27 mi downstream for irrigation in Salt River Valley, and for municipal use by the city of Phoenix.

AVERAGE DISCHARGE (adjusted for storage in Bartlett and Horseshoe Reservoirs)--114 years, 663 ft³/s, 480,300 acre-ft/yr; median of yearly mean discharge, 530 ft³/s, 384,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--1888-1939: Maximum discharge not determined, probably over 150,000 ft³/s Feb. 24, 1891; minimum daily, 29 ft³/s July 11 and 13, 1901. Floods of Nov. 27, 1905 and Mar. 4, 1938, reached maximum discharges of 96,000 ft³/s and 95,000 ft³/s, respectively.
1939-2000: Maximum discharge, 110,000 ft³/s Jan. 8, 1993; no flow at Bartlett Dam at times when gates in dam were closed.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1,530 ft³/s Nov. 2. Minimum daily discharge, 85 ft³/s Sept. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115	1420	866	106	88	99	101	114	104	114	107	91
2	114	1530	823	103	88	100	111	119	91	120	96	97
3	115	1430	838	101	88	102	102	112	97	118	94	117
4	118	1330	768	102	88	101	107	112	98	116	118	118
5	119	1390	636	103	88	101	93	e95	99	118	121	97
6	118	1410	681	104	88	102	94	e99	109	116	120	93
7	120	1360	691	105	102	102	94	e99	114	95	102	94
8	121	1320	640	106	100	102	95	e99	114	113	106	92
9	122	1300	654	107	89	102	96	98	114	117	115	104
10	128	1300	651	131	90	101	95	107	114	100	109	108
11	128	1260	583	131	91	101	95	98	114	124	104	92
12	164	1140	619	132	91	101	95	99	113	108	109	96
13	376	1100	672	130	91	101	95	113	113	107	106	99
14	722	1110	667	106	91	100	93	102	110	115	99	99
15	950	1210	628	91	91	102	111	107	91	124	107	103
16	1050	1140	617	92	91	102	110	108	92	113	95	103
17	1090	1060	645	92	91	102	109	97	100	99	94	109
18	1150	1060	659	92	125	101	119	96	289	98	94	115
19	1250	1350	723	91	131	114	121	95	650	96	119	101
20	1320	1430	713	92	130	119	113	98	660	92	116	98
21	1320	1340	709	92	129	119	97	103	657	91	92	98
22	1480	1130	707	93	128	112	97	96	655	92	101	97
23	1490	1040	705	92	111	107	113	101	654	93	108	95
24	1460	982	754	92	98	103	98	102	373	101	101	95
25	1440	854	766	91	98	104	98	134	118	100	95	101
26	1420	865	1030	101	98	109	98	144	124	98	108	101
27	1300	913	1190	86	98	120	108	127	123	100	115	99
28	1220	953	824	87	99	120	122	115	123	102	107	91
29	1480	942	489	87	---	119	122	115	114	108	94	85
30	1380	918	320	87	---	104	115	115	103	112	93	102
31	1320	---	156	88	---	104	---	118	---	123	91	---
TOTAL	24700	35587	21424	3113	2791	3276	3117	3337	6430	3323	3236	2990
MEAN	796.8	1186	691.1	100.4	99.68	105.7	103.9	107.6	214.3	107.2	104.4	99.67
MAX	1490	1530	1190	132	131	120	122	144	660	124	121	118
MIN	114	854	156	86	88	99	93	95	91	91	91	85
AC-FT	48990	70590	42490	6170	5540	6500	6180	6620	12750	6590	6420	5930

CAL YR 2001 TOTAL 149068 MEAN 408.4 MAX 1530 MIN 94 AC-FT 295700
WTR YR 2002 TOTAL 113324 MEAN 310.5 MAX 1530 MIN 85 AC-FT 224800

e Estimated

09510000 VERDE RIVER BELOW BARTLETT DAM, AZ—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD --Dec. 1950 to Aug. 1992, June 1999 to current year.

PERIOD OF DAILY RECORD--

SPECIFIC CONDUCTANCE: Oct. 1964 to Dec. 1981, Mar. 1982 to Sept. 1982, Apr. 1983 to Sept. 1990.

WATER TEMPERATURES: Dec. 1950 to Dec. 1981, Mar. 1982 to Sept. 1982, Apr. 1983 to Sept. 1990.

REMARKS--Unpublished daily specific conductance measurements for period Dec. 1950 to Sept. 1964 available from district office in Tucson, AZ.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TUR-BIDITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	HARD-NESS TOTAL (MG/L CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT 02...	1140	114	2.6	718	9.4	102	8.2	448	27.0	16.2	0	180	37.0
MAR 15...	1200	103	5.2	717	11.1	107	8.4	591	17.5	10.6	4	230	43.0
APR 23...	1205	123	10	719	11.6	115	8.4	602	31.0	12.4	1	230	43.0
JUL 10...	1135	92	6.1	718	--e	--	8.3	634	33.0	15.2	11	250	46.0
Date	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA) (00916)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT TOT IT FIELD (MG/L AS CACO3 HCO3) (39086)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)
OCT 02...	38.0	21.0	22.0	2.20	.7	23.0	178	217	<1	14.0	.3	32.0	4
MAR 15...	44.0	30.0	33.0	2.70	1	35.0	228	267	5	23.0	.3	60.0	8
APR 23...	45.0	30.0	32.0	2.80	1	37.0	230	268	6	24.0	.4	60.0	10
JUL 10...	46.0	33.0	33.0	2.80	1	38.0	239	282	5	25.0	.3	60.0	5
Date	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, RESIDUE AT 180 DEG. C SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, AM-ONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	E COLI, MTEC MF WATER (COL/100 ML) (31633)
OCT 02...	.36	263	236	.50	.07	.09	.030	.43	.53	2.3	.03	12	<1
MAR 15...	.49	359	331	<.20	<.01	--	.050	--	--	--	.02	<5	<1
APR 23...	.49	360	335	<.20	<.01	--	.060	--	--	--	<.02	<5	E20k
JUL 10...	.50	367	349	<.20	<.01	--	<.020	--	--	--	.04	<5	E12k
Date	COLI-FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)
OCT 02...	E7k	<1	<1	11	14	50.0	50.0	<1	<1	103	103	<.5	<.5
MAR 15...	E1k	<1	<1	13	19	53.0	58.0	<1	<1	165	172	<.5	<.5
APR 23...	E5k	<1	<1	13	13	54.0	61.0	<1	<1	160	167	<.5	<.5
JUL 10...	E6k	<1	<1	16	26	60.0	61.0	<1	<1	171	169	<.5	<.5

GILA RIVER BASIN
09510000 VERDE RIVER BELOW BARTLETT DAM, AZ—CONTINUED
WATER-QUALITY RECORDS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)
	OCT 02...	<1	<1	<2	<2	14	104	<2	<2	25	57	<.10	<.1
MAR 15...	<1	<1	<2	<2	<2	301	<2	<2	5	25	<.10	<.1	1
APR 23...	<1	<1	<2	<2	<2	358	<2	<2	14	46	<.10	<.1	<1
JUL 10...	<1	<1	<2	<2	<2	221	<2	<2	36	66	<.10	<.1	<1

Date	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL SOLVED (UG/L AS SE) (01147)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	STRON- TIUM, TOTAL RECOV- ERABLE (UG/L AS SR) (01082)	THAL- LIUM, DIS- SOLVED (UG/L AS TL) (01057)	THAL- LIUM, TOTAL SOLVED (UG/L AS TL) (01059)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	SEDI- MENT, DIS- CHARGE, SUS- SUS- (MG/L) (T/DAY) (80154)	SEDI- MENT, DIS- CHARGE, SUS- SUS- (MG/L) (T/DAY) (80155)
	OCT 02...	1	<1	<1	<1	<1	520	<2	<2	11	6	5.0
MAR 15...	1	1	<1	<1	<1	720	<2	<2	8	<2	5.0	1.4
APR 23...	1	<1	<1	<1	<1	720	<2	<2	5	2	13	4.3
JUL 10...	2	<1	<1	<1	<1	760	<2	<2	9	<2	8.0	.02

Remark codes used in this report:
 < -- Less than
 E -- Estimated value
 Value qualifier codes used in this report:
 k -- Counts outside acceptable range
 Null value qualifier codes used in this report:
 e -- Required equipment not functional/avail

09510000 VERDE RIVER BELOW BARTLETT DAM, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Water-quality measurements in the following table were made as part of the ADEQ Fixed-Station Network Program. The following analyses are quality-assurance samples processed during the 2002 sampling period and are defined in the introductory text section titled "Water-Quality Control Data".

Date	Time	Sample type	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPE-CIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNESIUM DIS-SOLVED (MG/L AS MG) (00925)	SODIUM DIS-SOLVED (MG/L AS NA) (00930)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ALUMINUM DIS-SOLVED (UG/L AS AL) (01106)
MAR 15...	1205	2	6.1	2	16.2	.04	<.03	<.1	<.20	<.01	<.020	<.02	4
Date			BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYLLIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHROMIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	
MAR 15...	<.5	<1	<.5	<1	<2	<2	<2	<2	<1	<1	<2		

Remark codes used in this report:
 < -- Less than

GILA RIVER BASIN

09510200 SYCAMORE CREEK NEAR FORT MCDOWELL, AZ

LOCATION--Lat 33° 41'39", long 111° 32'28", in sec. 16, T.4 N., R.8 E. (unsurveyed), Maricopa County, Hydrologic Unit 15060203, in Tonto National Forest, on right bank 0.7 mi southwest of Sugarloaf Mountain, 9 mi northeast of Fort McDowell, 10 mi upstream from mouth, and 25 mi northeast of Scottsdale.

DRAINAGE AREA--164 mi².

PERIOD OF RECORD--Dec. 1960 to current year. Prior to Oct. 1, 1963, published as "near McDowell."

REVISED RECORDS--WRD Ariz. 1970: Drainage area.

GAGE--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 1,759.33 ft above sea level. Prior to Oct. 1, 1970, at datum 0.16 ft lower.

REMARKS--Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 24,200 ft³/s Sept. 5, 1970, gage height, 19.7 ft, from profile past gage, from rating curve extended above 3,600 ft³/s on basis of slope-area measurements at gage heights 15.0, 16.0, and 19.7 ft; no flow at times in most years.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 400 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 28.....	1900	*317	*1.91

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.02	0.14	0.12	0.00	0.02	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.02	0.14	0.13	0.00	0.02	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.02	0.14	0.14	0.00	0.02	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.04	0.14	0.14	0.00	0.01	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.04	0.13	0.13	0.00	0.01	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.04	0.13	0.12	0.00	0.04	0.00	0.00	0.00	0.00	0.00
7	0.00	0.01	0.04	0.14	0.12	0.01	0.03	0.00	0.00	0.00	0.00	3.8
8	0.00	0.01	0.03	0.14	0.12	0.02	0.04	0.00	0.00	0.00	0.00	0.15
9	0.00	0.00	0.03	0.14	0.11	0.02	0.03	0.00	0.00	0.00	0.00	0.00
10	0.01	0.00	0.03	0.14	0.11	0.02	0.02	0.00	0.00	0.00	0.00	0.00
11	0.02	0.00	0.03	0.14	0.12	0.02	0.01	0.00	0.00	0.00	0.00	0.00
12	0.04	0.01	0.04	0.13	0.12	0.02	0.01	0.00	0.00	0.00	0.00	0.00
13	0.03	0.00	0.03	0.10	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00
14	0.05	0.00	0.04	0.10	0.13	0.02	0.00	0.00	0.00	0.00	0.00	0.00
15	0.06	0.00	0.06	0.10	0.13	0.02	0.00	0.00	0.00	0.00	0.00	0.00
16	0.04	0.00	0.06	0.11	0.13	0.03	0.00	0.00	0.00	0.00	0.00	0.00
17	0.01	0.01	0.05	0.11	e0.10	0.04	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.01	0.06	0.11	0.10	0.04	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.01	0.06	0.11	0.11	0.04	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.01	0.06	0.11	0.11	0.03	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.01	0.06	0.11	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.02	0.07	0.09	0.09	0.02	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.01	0.07	0.09	0.08	0.02	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.02	0.07	0.09	0.07	0.03	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.02	0.07	0.09	0.07	0.03	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.02	0.06	0.09	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.02	0.06	0.09	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.02	0.07	0.09	0.00	0.03	0.00	0.00	0.00	0.00	9.0	0.00
29	0.00	0.01	0.08	0.11	---	0.05	0.00	0.00	0.00	0.00	0.47	0.00
30	0.00	0.02	0.10	0.13	---	0.04	0.00	0.00	0.00	0.00	0.01	0.00
31	0.00	---	0.12	0.12	---	0.03	---	0.00	---	0.00	0.00	---
TOTAL	0.24	0.20	1.63	3.60	2.85	0.68	0.25	0.00	0.00	0.00	9.47	3.95
MEAN	0.008	0.007	0.053	0.116	0.102	0.022	0.008	0.000	0.000	0.000	0.305	0.132
MAX	0.06	0.02	0.12	0.14	0.14	0.05	0.04	0.00	0.00	0.00	9.0	3.8
MIN	0.00	0.00	0.02	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.5	0.4	3.2	7.1	5.7	1.3	0.5	0.00	0.00	0.00	19	7.8
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IN.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2002, BY WATER YEAR (WY)

MEAN	6.769	6.799	41.62	60.33	78.67	88.29	25.46	6.853	2.274	1.911	4.167	4.026
MAX	194	72.3	426	1065	852	881	120	51.7	20.8	15.4	52.3	92.6
(WY)	1973	1973	1966	1993	1980	1978	1973	1973	1979	1994	1992	1970
MIN	0.000	0.000	0.000	0.000	0.004	0.022	0.008	0.000	0.000	0.000	0.000	0.000
(WY)	1961	1961	1963	1963	1990	2002	2002	1961	1961	1962	1961	1962

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1961 - 2002
ANNUAL TOTAL	2667.87	22.87	
ANNUAL MEAN	7.309	0.063	27.72
HIGHEST ANNUAL MEAN			155
LOWEST ANNUAL MEAN			0.16
HIGHEST DAILY MEAN	202 Mar 8	9.0 Aug 28	8300 Mar 2 1978
LOWEST DAILY MEAN	0.00 Aug 2	0.00 Oct 1	0.00 Oct 1 1960
ANNUAL SEVEN-DAY MINIMUM	0.00 Aug 2	0.00 Oct 1	0.00 Oct 1 1960
ANNUAL RUNOFF (AC-FT)	5290	45	20080
ANNUAL RUNOFF (CFSM)	0.045	0.000	0.17
ANNUAL RUNOFF (INCHES)	0.61	0.01	2.30
10 PERCENT EXCEEDS	18	0.11	42
50 PERCENT EXCEEDS	0.25	0.00	0.60
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

09511300 VERDE RIVER NEAR SCOTTSDALE, AZ

LOCATION.--Lat 33° 33' 31", long 111° 40' 07", in NW_{1/4}NE_{1/4}SE_{1/4} sec. 31, T.3 N., R.7 E., Maricopa County, Hydrologic Unit 15060203, in Salt River Indian Reservation, on right bank, 0.75 mi north of City of Phoenix water-treatment plant, 1 mi upstream from mouth, 1.7 mi downstream from State Highway 87, and 16 mi northeast of Scottsdale.

DRAINAGE AREA.--6,615 mi², of which 365 mi² is noncontributing, including 357 mi² in Aubrey Valley Playa, a closed basin.

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

REVISED RECORDS.--WDR AZ--89--1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,320.31 ft above sea level. Prior to Oct. 1, 1980, and Jan. 4 to Oct. 3, 1988, at site 1.7 mi upstream on State Highway 87 bridge at datum 31.04 ft higher. Oct. 1, 1980, to Jan. 3, 1988, at Verde Plant intake structure 0.1 mi upstream at same datum.

REMARKS.--Records good, except estimated daily discharges, which are poor. Flow regulated by Bartlett and Horseshoe Reservoirs (see sta 09509500) except during periods of spill or floodflow below Bartlett Dam. About 12,500 acres above reservoirs are irrigated by surface water and ground water. Below reservoirs water is diverted for municipal supply for the city of Phoenix, and for irrigation of an undetermined acreage in Fort McDowell Indian Reservation. Remainder (except during infrequent period of extreme flooding) is diverted at Granite Reef Dam on Salt River, 6 mi downstream, for irrigation in Salt River Valley and for municipal use by the city of Phoenix.

AVERAGE DISCHARGE.--41 years, 621 ft³/s, 449,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 127,000 ft³/s Jan. 8, 1993, from slope-area measurement of peak flow, gage height, 25.37 ft recorded; no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,390 ft³/s, Oct.23 at 1030, gage height 4.99 ft. Minimum daily discharge, 45 ft³/s, Oct. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	1180	811	182	80	99	101	88	69	84	87	72
2	45	1300	775	143	80	99	93	84	80	84	80	64
3	58	1290	764	127	79	102	94	78	73	89	61	54
4	71	1170	803	117	79	103	93	80	61	83	67	61
5	66	1200	645	113	79	104	99	94	67	76	73	66
6	67	1200	619	116	78	104	97	90	72	85	80	62
7	85	1130	675	112	79	106	101	90	72	94	88	72
8	81	1050	616	109	85	104	99	89	83	81	79	101
9	60	1040	606	106	89	105	100	81	98	77	63	80
10	59	1050	636	103	83	105	95	77	91	77	68	83
11	76	1060	584	94	85	106	95	83	67	75	77	123
12	68	953	552	93	85	104	98	90	71	85	67	84
13	99	887	623	93	84	104	96	85	67	79	70	81
14	343	859	638	97	80	104	98	89	66	80	64	83
15	688	954	623	102	85	104	92	80	82	87	61	81
16	802	920	581	98	87	105	94	85	78	80	62	83
17	939	885	606	96	90	107	92	73	70	83	60	79
18	977	809	616	94	90	107	92	62	52	73	70	67
19	1040	972	662	94	94	104	96	83	244	70	68	81
20	1210	1120	683	93	98	88	92	79	424	81	65	80
21	1210	1130	682	91	100	86	101	64	455	76	64	83
22	1310	993	679	88	99	89	93	68	509	49	58	86
23	1370	903	681	89	103	96	e90	59	521	56	50	88
24	1340	887	709	89	106	105	e85	79	506	77	69	e85
25	1330	778	697	87	99	104	e80	81	178	69	78	e80
26	1290	740	865	84	96	102	70	95	102	65	69	e75
27	1270	798	1120	86	96	104	67	106	94	64	55	76
28	1080	845	1050	87	97	116	79	93	87	82	72	76
29	1200	861	602	81	---	118	89	77	85	78	83	88
30	1220	852	420	84	---	114	93	73	93	73	58	75
31	1170	---	295	81	---	104	---	71	---	78	64	---
TOTAL	20678	29816	20918	3129	2485	3202	2764	2526	4617	2390	2130	2369
MEAN	667.0	993.9	674.8	100.9	88.75	103.3	92.13	81.48	153.9	77.10	68.71	78.97
MAX	1370	1300	1120	182	106	118	101	106	521	94	88	123
MIN	45	740	295	81	78	86	67	59	52	49	50	54
AC-FT	41010	59140	41490	6210	4930	6350	5480	5010	9160	4740	4220	4700

CAL YR 2001 TOTAL 124886 MEAN 342.2 MAX 1370 MIN 41 AC-FT 247700
WTR YR 2002 TOTAL 97024 MEAN 265.8 MAX 1370 MIN 45 AC-FT 192400

e Estimated

GILA RIVER BASIN

09512162 INDIAN BEND WASH AT CURRY ROAD, TEMPE, AZ

LOCATION--Lat 33° 26'25", long 111° 54'52", in NW_{1/4}SE_{1/4} sec. 11, T.1 N., R.4 E., Maricopa County Hydrologic Unit 15060106, on upstream side of Curry Road bridge, 2 mi northeast of downtown Tempe, AZ.

DRAINAGE AREA--82 mi².

PERIOD OF RECORD--Oct. 1992 to current year.

GAGE--Water-stage recorder. Datum of gage is 1,162.45 ft above sea level.

REMARKS--No estimated daily discharges. Records fair. FCDMC provided daily values prior to installation of gage in Apr. 1993. Natural flow of wash affected by urbanization and partly regulated by artificial lakes upstream. Gage located .25 mi upstream from Tempe Town Lake.

EXTREMES OUTSIDE PERIOD OF RECORD--Maximum discharge 21,000 ft³/s June 22, 1972, at gage 7 mi upstream (09512100).

EXTREMES FOR PERIOD OF RECORD--Maximum daily discharge 1,970 ft³/s, Jan. 11, 1993. Minimum daily discharge, no flow for many days.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 300 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 24.....	0015	*161	*1.42

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	1.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00
15	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	2.8	0.00	0.00
16	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.3
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.95
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.2
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.1	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40	0.00	0.25
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.2	0.00	0.25
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	1.59	0.00	0.10	0.00	0.00	0.00	0.00	45.17	0.00	5.72
MEAN	0.000	0.000	0.051	0.000	0.004	0.000	0.000	0.000	0.000	1.457	0.000	0.191
MAX	0.00	0.00	1.2	0.00	0.07	0.00	0.00	0.00	0.00	40	0.00	2.3
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	3.2	0.00	0.2	0.00	0.00	0.00	0.00	90	0.00	11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2002, BY WATER YEAR (WY)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		
MEAN	5.459	3.337	5.029	23.70	4.452	4.177	0.335	0.040	0.059	0.852	0.602	2.858
MAX	46.8	29.9	39.5	225	23.6	16.9	1.78	0.39	0.55	6.17	2.64	21.9
(WY)	1994	1994	1993	1993	1993	1993	2001	1995	1994	1999	1995	1995
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1993	1993	1994	1996	1999	1999	1993	1993	1993	1993	1994	1993

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1993 - 2002
ANNUAL TOTAL	257.48	52.58	
ANNUAL MEAN	0.705	0.144	4.269
HIGHEST ANNUAL MEAN			25.8
LOWEST ANNUAL MEAN			0.14
HIGHEST DAILY MEAN	42	Jan 13	40
LOWEST DAILY MEAN	0.00	Jan 1	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00
ANNUAL RUNOFF (AC-FT)	511	104	3090
10 PERCENT EXCEEDS	0.00	0.00	0.00
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

09512165 SALT RIVER AT PRIEST DRIVE NEAR PHOENIX, AZ

LOCATION--Lat 33° 26' 22", long 111° 57' 37", in NE1/4NE1/4 sec. 17, T.1 N., R.4 E., Maricopa County, Hydrologic Unit 15060106, on left bank at downstream side of Priest Road bridge, 1.3 mi southeast of Phoenix main post office.

DRAINAGE AREA--13,223 mi².

PERIOD OF RECORD--Dec. 1993 to current year.

GAGE--Water-stage recorder. Elevation of gage is 1,135 ft above sea level, from topographic map.

REMARKS--Records fair.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 81,400 ft³/s Feb. 16, 1995, gage height 12.73 ft, from rating curve adjusted for drawdown based on high-water mark profile at gage; no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD--Maximum discharge since 1871, 300,000 ft³/s in Feb. 1891.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 210 ft³/s on Jul. 24 at 1900, gage height 2.60 ft. Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.90	0.52	2.5	0.08	1.4	1.3	0.28	0.16	0.30	0.95	0.70	1.0
2	0.86	1.6	2.5	0.03	1.2	1.2	0.27	0.15	1.00	0.70	0.70	1.1
3	0.86	0.95	2.6	0.00	1.0	1.1	0.25	0.43	1.1	0.70	0.68	1.2
4	0.93	0.94	6.3	0.01	1.3	0.69	0.42	0.18	0.74	0.74	0.63	1.3
5	1.5	4.3	2.4	0.00	1.8	0.72	0.33	1.2	0.40	0.76	0.78	0.85
6	0.69	0.82	2.1	0.00	1.8	1.6	0.21	1.2	0.34	0.74	0.83	1.1
7	0.72	0.39	1.9	0.00	1.7	2.4	0.22	0.46	0.34	0.73	0.82	1.5
8	1.5	0.50	1.9	0.00	1.3	2.7	0.96	0.15	0.33	0.77	0.71	1.3
9	1.0	0.84	2.0	0.00	1.7	1.3	0.77	0.12	0.31	0.84	0.59	1.5
10	0.78	0.91	2.0	0.05	0.94	1.3	0.19	0.12	0.32	0.88	0.96	1.0
11	0.77	1.0	2.6	0.01	2.1	2.0	0.19	0.11	0.33	0.82	0.71	0.95
12	0.78	1.3	1.7	0.00	1.1	1.2	0.17	0.09	0.33	0.91	1.0	0.81
13	0.74	1.9	1.3	0.02	0.97	0.81	0.14	0.30	0.38	1.2	0.44	0.77
14	0.73	2.1	1.3	0.10	1.4	0.83	0.13	0.64	0.53	6.8	0.35	0.76
15	0.73	3.1	0.95	0.00	1.5	0.81	0.13	0.20	0.92	3.8	0.34	0.74
16	0.74	2.6	0.85	0.00	1.0	0.76	0.17	0.33	1.3	1.7	0.38	0.69
17	0.70	2.1	0.84	0.00	1.1	1.0	0.12	0.19	0.95	0.67	0.41	0.66
18	0.60	1.8	0.81	0.00	1.7	0.75	0.22	0.83	0.60	0.66	0.51	0.63
19	0.65	2.1	0.68	0.00	1.5	0.59	0.41	1.4	0.48	0.72	0.51	0.59
20	0.64	2.2	0.68	0.00	0.92	0.70	0.14	1.7	0.48	0.70	0.51	0.65
21	0.62	2.1	0.52	0.00	1.9	0.67	0.10	1.1	0.50	0.66	0.57	0.78
22	0.61	2.4	0.40	0.00	1.1	1.3	0.82	0.67	0.53	0.63	0.58	1.4
23	0.60	2.3	0.41	0.43	0.84	0.67	0.33	0.52	0.58	2.1	0.69	2.0
24	0.73	2.1	0.41	0.00	0.64	0.50	0.14	0.46	0.63	24	0.59	0.65
25	0.70	2.3	0.30	0.00	0.61	0.49	0.12	0.40	0.60	1.2	1.3	0.54
26	0.59	2.4	0.33	0.09	1.1	0.43	0.10	0.35	0.64	0.77	1.1	0.54
27	0.54	2.7	0.94	0.00	1.3	0.41	0.10	0.32	0.67	0.53	0.85	0.56
28	0.51	2.8	0.47	0.00	1.4	0.37	0.14	0.34	0.83	1.1	0.76	0.60
29	0.63	3.0	0.08	0.00	---	0.33	0.15	0.34	0.81	1.1	0.85	0.60
30	0.57	2.8	0.12	11	---	0.33	0.13	0.34	1.5	0.85	0.88	0.63
31	0.49	---	0.06	2.6	---	0.31	---	0.32	---	0.73	0.95	---
TOTAL	23.41	56.87	41.95	14.41	36.32	29.57	7.85	15.12	18.77	59.46	21.68	27.40
MEAN	0.755	1.896	1.353	0.465	1.297	0.954	0.262	0.488	0.626	1.918	0.699	0.913
MAX	1.5	4.3	6.3	11	2.1	2.7	0.96	1.7	1.5	24	1.3	2.0
MIN	0.49	0.39	0.06	0.00	0.61	0.31	0.10	0.09	0.30	0.53	0.34	0.54
AC-FT	46	113	83	29	72	59	16	30	37	118	43	54

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2002, BY WATER YEAR (WY)

	1994	1995	1996	1997	1998	1999	2000	2001	2002			
MEAN	1.489	0.790	1.210	21.04	586.0	841.8	150.1	0.450	0.351	1.636	0.705	3.761
MAX	9.39	3.17	5.48	183	5309	7555	968	1.82	1.46	7.38	2.28	21.8
(WY)	2001	2001	1995	1995	1995	1995	1998	2001	2000	1999	2001	1995
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1995	1995	1996	1994	1994	1994	1994	1994	1994	1994	1994	1994

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1994 - 2002
ANNUAL TOTAL	868.18	352.81	
ANNUAL MEAN	2.379	0.967	148.1
HIGHEST ANNUAL MEAN			1098
LOWEST ANNUAL MEAN			0.000
HIGHEST DAILY MEAN	65 Mar 8	24 Jul 24	40600 Mar 7 1995
LOWEST DAILY MEAN	0.06 Dec 31	0.00 Jan 3	0.00 Dec 7 1993
ANNUAL SEVEN-DAY MINIMUM	0.33 Dec 25	0.00 Jan 3	0.00 Dec 7 1993
ANNUAL RUNOFF (AC-FT)	1720	700	107300
10 PERCENT EXCEEDS	2.8	2.0	2.1
50 PERCENT EXCEEDS	1.6	0.70	0.00
90 PERCENT EXCEEDS	0.70	0.12	0.00

GILA RIVER BASIN

09512280 CAVE CREEK BELOW COTTONWOOD CREEK, NEAR CAVE CREEK, AZ

LOCATION --Lat 33° 53' 14", long 111° 57' 12", in SE1/4SE1/4SW1/4 sec. 4, T.6 N., R.4 E., Maricopa County, Hydrologic Unit 15060106, on left bank 1,500 ft downstream from Cottonwood Creek and 3.7 mi north of town of Cave Creek.

DRAINAGE AREA --82.7 mi².

PERIOD OF RECORD --Oct. 1980 to current year. Prior to Oct. 1989, published as "below Cottonwood Wash."

GAGE --Water-stage recorder. Elevation of gage is 2,280 ft above sea level, from topographic map. Prior to Jan. 8, 1993, at datum 2.00 ft higher.

REMARKS --Records fair. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD --Maximum discharge, 9,200 ft³/s Jan. 8, 1993, gage height, 15.24 ft from rating curve extended above 7,000 ft³/s on basis of slope-area measurement at 9,200 ft³/s; no flow for many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD --Flood of Feb. 19, 1980, reached a stage of 10.4 ft, from flood marks, discharge, 7,020 ft³/s.

EXTREMES FOR CURRENT YEAR --Peak discharges greater than base discharge of 700 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 8	0400	*0.23	*2.32

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.14	0.17	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.13	0.16	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.12	0.15	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.14	0.14	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.18	0.12	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.19	0.13	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.19	0.12	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.21	0.10	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.20	0.09	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.21	0.08	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.21	0.07	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.19	0.05	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.19	0.03	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.19	0.01	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.20	0.04	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.22	0.06	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.21	0.06	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.22	0.02	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.03	0.22	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.08	0.21	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.10	0.21	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.09	0.19	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.09	0.19	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.10	0.18	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.13	0.18	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.18	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.18	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.18	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.62	5.81	1.59	0.00	0.00	0.00	0.00	0.00
MEAN	0.000	0.000	0.000	0.000	0.022	0.187	0.053	0.000	0.000	0.000	0.000	0.000
MAX	0.00	0.00	0.00	0.00	0.13	0.22	0.17	0.00	0.00	0.00	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	1.2	12	3.2	0.00	0.00	0.00	0.00	0.00
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IN.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2002, BY WATER YEAR (WY)

MEAN	2.074	2.828	6.616	23.98	17.70	17.46	3.089	0.907	0.300	0.744	1.906	1.749
MAX	17.2	12.9	48.3	370	164	123	14.0	6.54	3.27	10.5	19.3	11.1
(WY)	2001	1994	1983	1993	1993	1991	1983	1983	1993	1999	1992	1982
MIN	0.000	0.000	0.000	0.000	0.022	0.055	0.053	0.000	0.000	0.000	0.000	0.000
(WY)	1991	1990	1990	2002	2002	1999	2002	1989	1984	1982	1994	1981

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1980 - 2002

ANNUAL TOTAL	460.11	8.02	
ANNUAL MEAN	1.261	0.022	6.579
HIGHEST ANNUAL MEAN			51.5 1993
LOWEST ANNUAL MEAN			0.022 2002
HIGHEST DAILY MEAN	60 Mar 7	0.22 Mar 19	2750 Jan 8 1993
LOWEST DAILY MEAN	0.00 May 21	0.00 Oct 1	0.00 Jul 13 1981
ANNUAL SEVEN-DAY MINIMUM	0.00 May 21	0.00 Oct 1	0.00 Jul 13 1981
ANNUAL RUNOFF (AC-FT)	913	16	4770
ANNUAL RUNOFF (CFSM)	0.015	0.000	0.080
ANNUAL RUNOFF (INCHES)	0.21	0.00	1.08
10 PERCENT EXCEEDS	2.2	0.12	4.8
50 PERCENT EXCEEDS	0.00	0.00	0.33
90 PERCENT EXCEEDS	0.00	0.00	0.00

09512450 AGUA FRIA RIVER NEAR HUMBOLDT, AZ

LOCATION--Lat 34° 29'07", long 112° 14'15", in SW1/4NW1/4 sec. 22, T.16 N., R.1 E., Yavapai County, Hydrologic Unit 15070102, on right bank 0.9 mi southeast from Humboldt.

DRAINAGE AREA--Undetermined.

PERIOD OF RECORD--Jan. 2000 to current year.

GAGE--Water-stage recorder and crest-stage gage. Elevation of gage is 4,400 ft above sea level, from topographic map.

REMARKS--Records fair except for estimated daily discharges, which are poor. No diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 11,900 ft³/s, based on an extension of the rating curve, Sept. 8, 2002 at 1815, gage height 15.18 ft; minimum daily discharge, no flow for many days in 2002 water year.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 11,900 ft³/s, based on an extension of the rating curve, Sept. 8 at 1815, gage height 15.18 ft. Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	1.9	2.0	1.8	2.1	1.6	2.0	1.8	0.47	0.00	0.04	0.00
2	1.1	1.9	2.0	2.0	2.2	1.5	2.0	1.9	0.40	0.00	0.07	0.00
3	1.0	1.9	2.0	2.0	2.1	1.7	2.0	1.9	0.35	0.00	0.08	0.00
4	1.1	1.9	2.1	2.0	2.3	1.8	1.9	1.9	0.32	0.00	0.09	0.00
5	1.3	2.0	2.1	2.0	2.1	1.8	1.9	1.9	0.27	0.00	0.13	0.00
6	1.4	1.9	2.0	2.0	2.1	1.6	2.0	1.8	0.20	0.00	0.15	31
7	1.6	1.9	2.0	2.0	2.1	1.9	2.0	1.7	0.16	0.00	0.18	9.8
8	1.6	1.7	2.0	2.0	2.1	1.9	1.8	1.7	0.13	0.00	0.10	687
9	1.6	1.8	2.0	2.0	2.1	2.0	1.5	1.7	0.11	0.79	0.08	6.6
10	1.5	1.8	2.0	2.0	2.2	2.0	1.3	1.6	0.11	0.59	0.08	401
11	1.5	1.9	2.0	2.0	2.2	2.0	1.2	1.6	0.11	0.08	0.08	96
12	1.5	1.8	2.1	2.0	2.2	1.8	1.3	1.6	0.22	0.07	0.07	e1.0
13	1.4	1.8	2.0	2.0	2.2	1.8	1.1	1.6	0.13	0.05	0.06	e1.0
14	1.4	1.7	2.0	2.0	2.2	1.7	1.1	1.6	0.10	0.06	0.05	e1.0
15	1.4	1.8	2.0	2.0	2.2	1.6	1.1	1.4	0.10	0.05	0.04	e1.0
16	1.3	1.8	2.0	2.0	2.2	1.7	1.1	1.4	0.08	0.08	0.04	e0.90
17	1.2	1.9	2.0	2.1	2.1	2.0	1.1	1.3	0.07	0.23	0.03	e0.90
18	1.3	1.9	2.0	2.1	2.2	2.0	1.1	1.3	0.07	0.30	0.02	e0.90
19	1.4	1.9	2.0	2.1	2.1	2.0	1.1	1.3	0.04	0.28	0.01	e0.90
20	1.4	2.0	1.9	2.1	2.1	1.8	1.1	1.3	0.05	0.14	0.00	e0.90
21	1.3	2.0	1.8	2.1	2.0	1.8	1.1	1.3	0.08	0.10	0.00	e0.90
22	1.2	2.0	1.6	2.1	2.0	1.9	1.3	1.2	0.08	0.09	0.01	e0.84
23	1.2	2.0	1.6	2.1	2.0	2.0	1.5	1.1	0.08	0.08	0.00	e0.84
24	1.3	2.0	1.6	2.1	1.9	2.0	1.6	1.0	0.08	0.09	0.00	e0.84
25	1.4	2.1	1.6	2.1	1.9	2.0	1.6	1.0	0.06	0.12	0.00	e0.80
26	1.5	2.0	1.6	2.1	1.8	2.0	1.7	1.0	0.02	0.11	0.00	e0.80
27	1.5	2.0	1.7	2.1	1.7	1.9	1.6	1.0	0.03	0.08	0.00	e0.80
28	1.6	2.0	1.9	2.1	1.7	1.9	1.6	0.95	0.02	0.08	0.00	e0.90
29	1.7	2.0	1.9	2.2	---	2.0	1.6	0.84	0.00	0.06	0.00	e0.90
30	1.7	2.0	1.9	2.2	---	2.0	1.7	0.69	0.00	0.04	0.00	e0.90
31	1.8	---	1.9	2.1	---	2.0	---	0.56	---	0.04	0.00	---
TOTAL	43.2	57.3	59.3	63.5	58.1	57.7	45.0	42.94	3.94	3.61	1.41	1248.42
MEAN	1.39	1.91	1.91	2.05	2.08	1.86	1.50	1.39	0.13	0.12	0.045	41.6
MAX	1.8	2.1	2.1	2.2	2.3	2.0	2.0	1.9	0.47	0.79	0.18	687
MIN	1.0	1.7	1.6	1.8	1.7	1.5	1.1	0.56	0.00	0.00	0.00	0.00
MED	1.4	1.9	2.0	2.0	2.1	1.9	1.6	1.4	0.09	0.08	0.04	0.90
AC-FT	86	114	118	126	115	114	89	85	7.8	7.2	2.8	2480

CAL YR 2001 TOTAL 681.62 MEAN 1.87 MAX 33 MIN 0.20 MED 1.8 AC-FT 1350
WTR YR 2002 TOTAL 1684.42 MEAN 4.61 MAX 687 MIN 0.00 MED 1.6 AC-FT 3340

e Estimated

09512800 AGUA FRIA RIVER NEAR ROCK SPRINGS, AZ

LOCATION--Lat 34° 00' 56", long 112° 10' 02", in NW1/4NW1/4 sec. 28, T.8 N., R.2 E., Yavapai County, Hydrologic Unit 15070102, on right bank 2.5 mi southwest of Rock Springs and 10 mi upstream from Lake Pleasant.

DRAINAGE AREA--1,111 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD--Jan. 1970 to current year (monthly discharge only, Oct. 1973 to Sept. 1974). Low-flow records not equivalent prior to Oct. 1, 1974, due to spring flow in streambed between sites in use.

REVISED RECORDS--WDR AZ-89-1: Drainage area.

GAGE--Water-stage recorder and crest-stage gage. Elevation of gage is 1,800 ft above sea level, from topographic map. Prior to Oct. 1, 1974, at site 600 ft upstream at datum 10.00 ft higher.

REMARKS--Records fair, except for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 59,500 ft³/s Feb. 19, 1980, gage height, 21.08 ft recorded, 28.15 ft from floodmark, from rating curve extended above 21,000 ft³/s on basis of slope-area measurement at gage height 27.2 ft; no flow at times each year prior to Oct. 1974; since Oct. 1974, no flow May 27 to July 12, 1977, and for many days in 1990.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 1,800 ft³/s and (or) maximum (*), from rating curve extended on basis of slope-area measurement:

Date	Time	Discharge(ft ³ /s)	Gage height (ft)
Sept. 8	0530	3220	10.12
Sept. 9	0415	*7420	*13.16
Sept. 11	0600	3350	10.23

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.01	0.13	0.10	0.30	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.03	0.10	0.06	0.25	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.04	0.11	0.05	0.22	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.06	0.10	0.06	0.17	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.09	0.09	0.06	0.14	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.17	0.09	0.07	0.23	0.00	0.00	0.00	0.00	0.76
7	0.00	0.00	0.00	0.25	0.09	0.09	0.25	0.00	0.00	0.00	0.00	352
8	0.00	0.00	0.00	0.35	0.10	0.12	0.23	0.00	0.00	0.00	0.00	e695
9	0.00	0.00	0.00	0.33	0.09	0.11	0.21	0.00	0.00	0.00	0.00	896
10	0.00	0.00	0.00	0.35	0.08	0.09	0.22	0.00	0.00	0.00	0.00	26
11	0.00	0.00	0.00	0.29	0.08	0.08	0.20	0.00	0.00	0.00	0.00	898
12	0.00	0.00	e0.00	0.31	0.09	0.08	0.19	0.00	0.00	0.00	0.00	96
13	0.00	0.00	e0.00	e0.36	0.08	0.09	0.13	0.00	0.00	0.00	0.00	20
14	0.00	0.00	e0.00	e0.30	0.07	0.08	0.09	0.00	0.00	0.00	0.00	6.8
15	0.00	0.00	0.00	0.19	0.07	0.09	0.06	0.00	0.00	0.00	0.00	4.0
16	0.00	0.00	0.00	0.21	0.08	0.12	0.07	0.00	0.00	0.00	0.00	1.8
17	0.00	0.00	e0.00	0.22	0.10	0.14	0.07	0.00	0.00	0.00	0.00	0.82
18	0.00	0.00	e0.00	e0.22	0.12	0.14	0.04	0.00	0.00	0.00	0.00	0.20
19	0.00	0.00	0.00	0.20	0.12	0.11	0.03	0.00	0.00	0.00	0.00	0.04
20	0.00	0.00	0.00	e0.23	0.12	0.11	0.03	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.22	0.11	0.10	0.03	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	e0.22	0.07	0.11	0.02	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.19	0.09	0.14	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.16	0.12	0.22	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.16	0.12	0.22	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	e0.00	e0.17	0.11	0.23	0.00	0.00	0.00	0.00	0.00	0.04
27	0.00	0.00	e0.00	e0.19	0.09	0.21	0.00	0.00	0.00	0.00	0.00	0.08
28	0.00	0.00	0.00	0.21	0.12	0.23	0.00	0.00	0.00	0.00	0.00	0.11
29	0.00	0.00	0.00	0.18	---	0.29	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.15	---	0.29	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.14	---	0.27	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	6.19	2.74	4.16	3.18	0.00	0.00	0.00	0.00	2997.65
MEAN	0.000	0.000	0.000	0.200	0.098	0.134	0.106	0.000	0.000	0.000	0.000	99.92
MAX	0.00	0.00	0.00	0.36	0.13	0.29	0.30	0.00	0.00	0.00	0.00	898
MIN	0.00	0.00	0.00	0.00	0.07	0.05	0.00	0.00	0.00	0.00	0.00	0.00
AC--FT	0.00	0.00	0.00	12	5.4	8.3	6.3	0.00	0.00	0.00	0.00	5950
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
IN.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2002, BY WATER YEAR (WY)

	23.35	19.89	72.52	185.9	311.3	256.7	54.36	11.40	4.335	10.60	27.92	33.54
MEAN	23.35	19.89	72.52	185.9	311.3	256.7	54.36	11.40	4.335	10.60	27.92	33.54
MAX	381	176	943	3301	3320	1967	338	70.7	46.1	51.4	164	360
(WY)	1973	1979	1979	1993	1980	1978	1973	1979	1979	1999	1988	1970
MIN	0.000	0.000	0.000	0.20	0.098	0.13	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	2002	2002	2002	2002	2002	2002	1972	1972	1971	1971	2002	2001

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1970 - 2002
ANNUAL TOTAL	7214.27	3013.92	
ANNUAL MEAN	19.77	8.257	83.79
HIGHEST ANNUAL MEAN			499
LOWEST ANNUAL MEAN			2.58
HIGHEST DAILY MEAN	1020	898	32700
LOWEST DAILY MEAN	0.00	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	0.00	0.00
ANNUAL RUNOFF (AC--FT)	14310	5980	60700
ANNUAL RUNOFF (CFSM)	0.018	0.007	0.075
ANNUAL RUNOFF (INCHES)	0.24	0.10	1.03
10 PERCENT EXCEEDS	48	0.22	101
50 PERCENT EXCEEDS	0.01	0.00	2.6
90 PERCENT EXCEEDS	0.00	0.00	0.12

e Estimated

GILA RIVER BASIN

09513780 NEW RIVER NEAR ROCK SPRINGS, AZ

LOCATION--Lat 33° 58' 27", long 112° 05' 54", in SW1/4SW1/4 sec. 6, T.7 N., R.3 E., Maricopa County, Hydrologic Unit 15070102, on right bank 180 ft upstream from road crossing and 6 mi southeast of Rock Springs.

DRAINAGE AREA--68.3 mi².

PERIOD OF RECORD--Water years 1962-65 (annual maximums only), Oct. 1965 to current year.

REVISED RECORDS--WDR AZ-89-1: Drainage area.

GAGE--Water-stage recorder. Elevation of gage is 2,310 ft above sea level, from topographic map. Jan. 2, 1964, to Sept. 30, 1965, crest-stage gage, and Oct. 28, 1965, to Nov. 16, 1967, water-stage recorder, at same site at datum 1.00 ft higher.

REMARKS--No estimated daily discharges. Records good.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 18,600 ft³/s Sept. 5, 1970, gage height, 13.5 ft, from profile past gage, from rating curve extended above 380 ft³/s on basis of slope-area measurements at gage heights 3.6, 4.73, 7.3, 10.7, and 13.5 ft; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 200 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 7.....	1845	*56	1.95

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.5
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.59
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.153
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.5
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.1
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IN.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2002, BY WATER YEAR (WY)

MEAN	2.507	5.169	18.35	34.61	39.78	40.23	4.811	1.120	0.246	0.689	1.244	3.404
MAX	51.1	52.4	218	573	348	444	29.5	10.5	2.17	8.55	15.3	104
(WY)	2001	1979	1979	1993	1980	1978	1992	1979	1980	1990	1971	1970
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1966	1968	1969	1970	1970	1971	1971	1966	1966	1966	1967	1968

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1966 - 2002

ANNUAL TOTAL	2107.74	4.59	
ANNUAL MEAN	5.775	0.013	12.78
HIGHEST ANNUAL MEAN			71.7
LOWEST ANNUAL MEAN			0.001
HIGHEST DAILY MEAN	134	Mar 7	5070
LOWEST DAILY MEAN	0.00	May 22	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	May 22	0.00
ANNUAL RUNOFF (AC-FT)	4180		9260
ANNUAL RUNOFF (CFSM)	0.086		0.19
ANNUAL RUNOFF (INCHES)	1.17		2.58
10 PERCENT EXCEEDS	17		9.9
50 PERCENT EXCEEDS	0.00		0.00
90 PERCENT EXCEEDS	0.00		0.00

GILA RIVER BASIN

09513860 SKUNK CREEK NEAR PHOENIX, AZ

LOCATION.--Lat 33° 43' 45", long 112° 07' 09", in NW¹/₄SE¹/₄SE¹/₄ sec. 35, T.5 N., R.2 E., Maricopa County, Hydrologic Unit 15070102, on right bank dike of Skunk Creek flood control channel, 300 ft east of frontage road of Interstate Highway 17, 3 mi north of Adobe and 20 mi north of City Hall in Phoenix.

DRAINAGE AREA.--64.9 mi².

PERIOD OF RECORD.--Water years 1960--67 (annual maximums only), Oct. 1967 to current year.

REVISED RECORDS.--WDR--89--1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,472.60 ft above sea level. May 1961 to Sept. 30, 1967, crest-stage gage at site 400 ft downstream at datum 6.67 ft lower, and Oct. 1, 1967, to Dec. 29, 1984, water-stage recorder at site 300 ft downstream at datum 12.66 ft lower.

REMARKS.--Records good, except for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s Aug. 1, 1964, gage height, 10.48 ft, present datum, from rating curve extended above 6,200 ft³/s; maximum gage height, 12.24 ft Sept. 5, 1970; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 7	2100	*306	*1.97

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.667
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
IN.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2002, BY WATER YEAR (WY)

	1968	1968	1969	1968	1969	1968	1968	1968	1968	1968	1968	1968
MEAN	1.909	1.635	2.950	2.703	1.860	1.737	0.000	0.001	0.007	1.296	3.072	1.796
MAX	25.6	41.4	60.0	55.7	24.1	45.7	0.000	0.032	0.26	18.2	38.4	42.8
(WY)	1973	1983	1983	1993	1978	1978	1968	1976	1972	1990	1990	1970
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1968	1968	1969	1968	1969	1968	1968	1968	1968	1968	1969	1968

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1968 - 2002
ANNUAL TOTAL	101.05	50.00	
ANNUAL MEAN	0.277	0.137	1.587
HIGHEST ANNUAL MEAN			8.58
LOWEST ANNUAL MEAN			0.000
HIGHEST DAILY MEAN	88 Aug 14	29 Sep 8	1170 Sep 5 1970
LOWEST DAILY MEAN	0.00 Jan 1	0.00 Oct 1	0.00 Oct 1 1967
ANNUAL SEVEN-DAY MINIMUM	0.00 Jan 1	0.00 Oct 1	0.00 Oct 1 1967
ANNUAL RUNOFF (AC-FT)	200	99	1150
ANNUAL RUNOFF (CFSM)	0.004	0.002	0.025
ANNUAL RUNOFF (INCHES)	0.06	0.03	0.33
10 PERCENT EXCEEDS	0.00	0.00	0.00
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

GILA RIVER BASIN

09514100 GILA RIVER AT ESTRELLA PARKWAY, NEAR GOODYEAR, AZ

LOCATION--Lat 33° 23'15", long 112° 23'30" in SE1/4NE1/4, sec. 31, T.1 N., R.1 W., Maricopa County, Hydrologic Unit 15070101, at downstream side of bridge, 3 mi southwest of Goodyear.

DRAINAGE AREA--45,585 mi².

PERIOD OF RECORD--Aug. 1992 to current year.

GAGE--Water-stage recorder. Elevation of gage is 883 ft above sea level, from topographic map.

AVERAGE DISCHARGE--10 years, 1075 ft³/s, 778,000 acre-ft/yr.

REMARKS--No estimated daily discharges. Records fair.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 162,000 ft³/s Jan. 9, 1993, gage height, 19.15 ft, from rating curve extended above 122,000 ft³/s; no flow at times.

EXTREMES FOR CURRENT YEAR--Maximum daily discharge, 182 ft³/s on Nov. 11. Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	1.1	4.2	18	5.4	2.8	0.00	0.00	0.00	0.00	0.00
2	0.00	0.92	0.39	4.3	20	4.7	2.4	0.00	0.00	0.00	0.00	0.00
3	0.00	128	0.34	4.3	19	4.3	2.4	0.00	0.00	0.00	0.00	0.00
4	0.00	156	0.73	4.3	9.8	3.7	3.0	0.00	0.00	0.00	0.00	0.00
5	0.00	170	1.5	4.3	8.1	3.0	3.6	0.00	0.00	0.00	0.00	0.00
6	0.00	173	2.0	4.3	6.3	1.1	4.6	0.00	0.00	0.00	0.00	0.00
7	0.00	166	2.3	4.3	5.5	0.86	4.7	0.00	0.00	0.00	0.00	0.00
8	0.00	157	2.5	4.6	5.3	2.1	4.8	0.00	0.00	0.00	0.00	14
9	0.00	150	2.8	4.9	5.7	1.4	4.3	0.00	0.00	0.00	0.00	51
10	0.00	152	3.0	4.9	5.7	2.1	3.0	0.00	0.00	0.00	0.00	65
11	0.00	182	3.2	4.9	6.0	2.6	1.4	0.00	0.00	0.00	0.00	28
12	0.00	120	3.5	4.9	5.9	2.0	0.50	0.00	0.00	0.00	0.00	0.00
13	0.00	84	3.4	4.9	5.7	1.8	0.19	0.00	0.00	0.00	0.00	0.00
14	0.00	91	3.5	4.9	6.0	0.68	0.23	0.00	0.00	0.00	0.00	0.00
15	0.00	56	3.6	4.9	5.7	0.21	0.34	0.00	0.00	0.00	0.00	0.00
16	0.00	6.0	3.5	4.9	6.1	0.63	0.13	0.00	0.00	0.00	0.00	0.00
17	0.00	3.1	3.6	4.9	6.6	1.4	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.65	3.6	4.9	6.6	2.1	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.21	3.6	4.9	5.8	1.5	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.39	3.0	4.9	5.7	1.6	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.53	2.3	4.7	6.2	1.4	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.59	2.3	4.3	4.9	0.77	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.63	3.2	4.3	5.4	1.1	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.55	3.8	4.3	6.1	1.8	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.63	3.2	4.7	6.2	2.1	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.66	3.4	4.9	6.3	1.1	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.77	3.5	5.3	5.7	1.5	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.79	3.2	17	5.9	1.7	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	1.0	3.2	19	---	2.1	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	1.2	3.6	19	---	2.0	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	3.4	19	---	2.4	---	0.00	---	0.00	0.00	---
TOTAL	0.00	1803.62	86.26	199.9	210.2	61.15	38.39	0.00	0.00	0.00	0.00	158.00
MEAN	0.000	60.12	2.783	6.448	7.507	1.973	1.280	0.000	0.000	0.000	0.000	5.267
MAX	0.00	182	3.8	19	20	5.4	4.8	0.00	0.00	0.00	0.00	65
MIN	0.00	0.00	0.34	4.2	4.9	0.21	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	3580	171	397	417	121	76	0.00	0.00	0.00	0.00	313

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2002, BY WATER YEAR (WY)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		
MEAN	18.22	83.02	55.84	5458	3179	1993	650.6	250.6	12.57	7.326	4.528	4.786
MAX	68.1	135	186	53880	26520	12960	5104	2431	97.6	55.6	42.2	19.7
(WY)	2001	1994	1994	1993	1993	1993	1993	1993	1993	1993	1993	1993
MIN	0.000	26.3	2.78	4.14	7.53	2.15	1.74	0.000	0.000	0.000	0.000	0.000
(WY)	2002	1996	2002	1998	2002	2002	2002	2002	1997	1996	1994	1994

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1993 - 2002

	2001 CALENDAR YEAR	2002 WATER YEAR	1993 - 2002
ANNUAL TOTAL	3874.11	2557.52	
ANNUAL MEAN	10.61	7.007	1075
HIGHEST ANNUAL MEAN			8376
LOWEST ANNUAL MEAN			10.3
HIGHEST DAILY MEAN	182 Nov 11	182 Nov 11	132000 Jan 9 1993
LOWEST DAILY MEAN	0.00 May 10	0.00 Oct 1	0.00 Jul 2 1994
ANNUAL SEVEN-DAY MINIMUM	0.00 May 10	0.00 Oct 1	0.00 Jul 2 1994
ANNUAL RUNOFF (AC-FT)	7680	5070	778700
10 PERCENT EXCEEDS	24	6.0	198
50 PERCENT EXCEEDS	0.41	0.00	10
90 PERCENT EXCEEDS	0.00	0.00	0.00

09516500 HASSAYAMPA RIVER NEAR MORRISTOWN, AZ

LOCATION--Lat 33° 53' 06", long 112° 39' 41", in SW¹/₄SE¹/₄ sec. 3, T.6 N., R.4 W., Maricopa County, Hydrologic Unit 15070103, on left bank 600 ft downstream from mouth of San Domingo Wash, 3.0 mi northwest of Morristown, and 6 mi southeast of Wickenburg.

DRAINAGE AREA--796 mi².

PERIOD OF RECORD--Oct. 1938 to June 1947 (continuous-record), water years 1954, 1956, and 1964--81 (annual maximums only), Oct. 1981 to Sept. 1991 (discharge above 500 ft³/s only), and Oct. 1991 to current year (continuous-record).

REVISED RECORDS--WDR AZ--89--1: Drainage area.

GAGE--Water-stage recorder. Datum of gage is 1,831.16 ft above sea level. Crest-stage gage at same site and datum water years 1954, 1956, and 1964--81.

REMARKS--Records poor.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 47,500 ft³/s Sept. 5, 1970, gage height, 19.0 ft, from high-water profile past gage and on basis of slope-area measurement of peak flow; no flow for most of each year.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 7.....	2000	*6,040	*11.39

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	413
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	427
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e200
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e100
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e50
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e25
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e5.0
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1220.00
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	40.67
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	427
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2420
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
IN.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2002, BY WATER YEAR (WY)

	MEAN	8.342	0.718	3.702	59.66	106.9	72.57	40.35	4.657	0.328	1.493	8.588	13.48
MAX	140	4.83	27.8	1084	1290	445	424	44.2	1.97	10.4	39.7	71.0	
(WY)	2001	2001	1941	1993	1993	1941	1941	1941	2000	1941	2000	1997	
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1943	1943	1995	1996	1996	2002	1996	1939	1939	1940	1940	1942	

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1939 - 2002
ANNUAL TOTAL	377.30	1220.00	
ANNUAL MEAN	1.034	3.342	27.52
HIGHEST ANNUAL MEAN			220
LOWEST ANNUAL MEAN			0.22
HIGHEST DAILY MEAN	7.7 Mar 7	427 Sep 8	8280 Jan 8 1993
LOWEST DAILY MEAN	0.00 May 3	0.00 Oct 1	0.00 Nov 25 1938
ANNUAL SEVEN-DAY MINIMUM	0.00 May 3	0.00 Oct 1	0.00 Apr 27 1939
ANNUAL RUNOFF (AC-FT)	748	2420	19940
ANNUAL RUNOFF (CFSM)	0.001	0.004	0.035
ANNUAL RUNOFF (INCHES)	0.02	0.06	0.47
10 PERCENT EXCEEDS	4.8	0.00	15
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

GILA RIVER BASIN

09517000 HASSAYAMPA RIVER NEAR ARLINGTON, AZ

LOCATION.--Lat 33° 20'50", long 112° 43'30", in NW¹/₄ sec. 13, T.1 S., R.5 W., Maricopa County, Hydrologic Unit 15070103, at former U.S. Highway 80, 1.8 mi upstream from mouth and 2.8 mi northeast of Arlington.

DRAINAGE AREA.--1,471 mi².

PERIOD OF RECORD.--Water years 1961--77 (annual maximums only), Oct. 1977 to Sept. 1990 (discharge above 500 ft³/s only), and Oct. 1990 to current year.

REVISED RECORDS.--WDR AZ--81--1: 1969(M). WDR AZ--89--1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 824.75 ft above sea level. May 15, 1985, to Nov. 11, 1993, at 822.68 ft above sea level. Prior to May 15, 1985, at 9.23 ft higher.

REMARKS.--Records poor. Records include irrigation return flow past station. Small diversions above station for irrigation and livestock.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,000 ft³/s Sept. 5, 1970, gage height, 8.40 ft, result of slope-area measurement of peak flow; no natural flow for most of time each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and (or) maximum (*):

Date	Time	Discharge(ft ³ /s)	Gage height (ft)
Sept. 7.....	2350	*3,930	*10.28

Minimum daily discharge, no flow for several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	29	e61	112	103	96	116	64	45	41	26	7.6
2	37	89	e77	66	137	127	84	78	50	59	30	18
3	52	12	e77	39	135	134	71	52	33	30	18	28
4	41	5.1	e97	64	117	65	40	41	11	34	8.3	13
5	33	e0.00	e97	80	82	85	45	50	9.6	31	21	17
6	42	e0.00	e100	77	61	126	44	49	4.0	39	25	17
7	77	e0.00	96	68	81	175	67	29	14	26	28	195
8	67	e0.00	105	48	64	83	55	35	20	31	25	e980
9	68	e0.00	115	62	100	62	34	42	11	24	19	e149
10	42	e0.00	94	57	109	112	44	53	9.2	9.2	15	e40
11	58	e0.00	89	50	130	93	81	25	e0.00	23	12	e45
12	38	e0.00	110	56	126	81	86	43	6.0	40	8.7	e35
13	38	e0.00	111	81	121	58	52	35	29	19	2.1	e23
14	77	e0.00	111	86	130	27	41	17	27	27	14	e31
15	44	e0.00	108	53	132	23	31	38	29	45	25	e20
16	54	8.2	129	64	149	40	56	40	24	43	6.3	e37
17	31	6.2	126	68	171	36	45	26	10	78	28	e23
18	19	16	104	56	135	56	71	14	7.8	76	30	e27
19	31	4.8	103	51	124	58	56	28	18	30	12	e16
20	60	e15	108	88	80	53	50	18	9.2	40	32	e14
21	82	e26	113	73	84	90	67	34	17	55	33	e12
22	99	e27	108	70	114	86	77	31	12	51	21	e23
23	72	e16	124	105	101	62	51	16	21	38	27	e12
24	48	e21	125	80	152	90	40	25	22	52	22	e15
25	34	e21	132	79	147	85	58	27	31	36	58	e5.3
26	24	e27	79	108	87	49	47	60	43	28	33	e11
27	31	e37	54	146	124	33	45	46	34	34	36	e27
28	37	e46	44	148	125	36	36	34	38	26	31	e17
29	41	e50	40	121	---	45	42	56	45	41	16	e17
30	23	e52	113	64	---	48	83	27	38	42	8.7	e14
31	31	---	114	79	---	107	---	8.6	---	43	14	---
TOTAL	1450	508.30	3064	2399	3221	2321	1715	1141.6	667.80	1191.2	685.1	1888.9
MEAN	46.77	16.94	98.84	77.39	115.0	74.87	57.17	36.83	22.26	38.43	22.10	62.96
MAX	99	89	132	148	171	175	116	78	50	78	58	980
MIN	19	0.00	40	39	61	23	31	8.6	0.00	9.2	2.1	5.3
AC-FT	2880	1010	6080	4760	6390	4600	3400	2260	1320	2360	1360	3750
CFSM	0.03	0.01	0.07	0.05	0.08	0.05	0.04	0.03	0.02	0.03	0.02	0.04
IN.	0.04	0.01	0.08	0.06	0.08	0.06	0.04	0.03	0.02	0.03	0.02	0.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2002, BY WATER YEAR (WY)

MEAN	91.16	53.68	91.02	93.54	111.3	68.56	44.69	47.83	35.95	49.83	50.17	60.31
MAX	312	109	124	146	336	131	65.3	80.7	50.3	121	69.1	86.1
(WY)	2001	1996	1993	1993	1993	1991	1999	1995	1991	1999	1999	1992
MIN	38.3	16.9	51.6	53.6	49.2	18.4	15.7	21.7	18.3	18.7	15.4	34.2
(WY)	1997	2002	1997	1995	1994	1994	1994	1996	1996	1994	1994	1994

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1990 - 2002

ANNUAL TOTAL	24017.30	20252.90	
ANNUAL MEAN	65.80	55.49	66.36
HIGHEST ANNUAL MEAN			92.7
LOWEST ANNUAL MEAN			38.5
HIGHEST DAILY MEAN	232	Jan 29	980
LOWEST DAILY MEAN	0.00	Nov 5	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	Nov 5	0.00
ANNUAL RUNOFF (AC-FT)	47640	40170	48080
ANNUAL RUNOFF (CFSM)	0.045	0.038	0.045
ANNUAL RUNOFF (INCHES)	0.61	0.51	0.61
10 PERCENT EXCEEDS	125	113	117
50 PERCENT EXCEEDS	56	42	53
90 PERCENT EXCEEDS	25	12	17

e Estimated

09517490 CENTENNIAL WASH AT SOUTHERN PACIFIC RAILROAD BRIDGE NEAR ARLINGTON, AZ

LOCATION.--Lat 33° 18'37", long 112° 52'52", in SW¹/₄NW¹/₄SW¹/₄ sec. 28, T.1 S., R.6 W., Maricopa County, Hydrologic Unit 15070104, on downstream side of bridge, 7.2 mi northwest of Arlington and 9.0 mi upstream from Gillespie Dam.

DRAINAGE AREA.--1,817 mi².

PERIOD OF RECORD.--May 1980 to Sept. 1984, Oct. 1984 to Sept. 1985 (daily discharges greater than 300 ft³/s only), and Oct. 1989 to current year.

REVISED RECORDS.--WDR AZ-91-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 837.12 ft above sea level (Flood Control District of Maricopa County benchmark). Oct. 1, 1990 through May 13, 1999, at 4.00 ft higher. Datum of gage prior to Oct. 1, 1990, 841.06 ft, revised.

REMARKS.--No estimated daily discharges. Records poor. Flow regulated by several small retention dams in upper end of basin. Small diversions above station for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,600 ft³/s Sept. 2, 1984, gage height, 11.34 ft, from rating curve extended above 200 ft³/s on basis of step-back water analysis; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--No flow for entire year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IN.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 2002, BY WATER YEAR (WY)

	2001	2001	1998	1993	1992	1992	1982	1981	1981	1996	1997	1984
(WY)	2001	2001	1998	1993	1992	1992	1982	1981	1981	1996	1997	1984
MEAN	1.271	0.124	0.361	5.348	2.351	0.925	0.235	0.588	0.480	2.727	5.120	9.164
MAX	21.1	1.07	4.41	84.8	22.5	10.4	2.79	4.41	4.47	18.0	38.3	117
(WY)	2001	2001	1998	1993	1992	1992	1982	1981	1981	1996	1997	1984
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1983	1981	1981	1981	1983	1983	1990	1990	1990	1983	1993	1991

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1981 - 2002
ANNUAL TOTAL	501.87	0.00	
ANNUAL MEAN	1.375	0.000	2.390
HIGHEST ANNUAL MEAN			9.60 1984
LOWEST ANNUAL MEAN			0.000 2002
HIGHEST DAILY MEAN	445 Jul 6	0.00 Oct 1	3320 Sep 2 1984
LOWEST DAILY MEAN	0.00 Jan 1	0.00 Oct 1	0.00 Oct 1 1980
ANNUAL SEVEN-DAY MINIMUM	0.00 Jan 1	0.00 Oct 1	0.00 Oct 6 1980
ANNUAL RUNOFF (AC-FT)	995	0.00	1730
ANNUAL RUNOFF (CFSM)	0.001	0.000	0.001
ANNUAL RUNOFF (INCHES)	0.01	0.00	0.02
10 PERCENT EXCEEDS	0.00	0.00	0.01
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

GILA RIVER BASIN

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ

LOCATION--Lat 33° 13'45", long 112° 46'00", in SE1/4NE1/4 sec.28, T.2 S., R.5 W., Maricopa County, Hydrologic Unit 15070101, at Gillespie Dam, 8 mi downstream from Hassayampa River. Gila Bend Canal diverts from left end, and Enterprise Canal diverts from right end, of Gillespie Dam.

DRAINAGE AREA--49,650 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD--June 1935 to Nov. 1939 (monthly discharge only published in WSP 1313), Dec. 1939 to Sept. 1971 (published with records for sta 09519500, Gila River below Gillespie Dam), 1972 and 1973 (water year estimates only, listed in REMARKS for sta 09519500), Oct. 1973 to current year. Low-flow records prior to Oct. 1970 are not equivalent as leakage less than 5 ft³/s is not included.

09518500. Gila Bend Canal: May 1935 to Sept. 1971, Oct. 1973 to current year (since Oct. 1941, monthly discharge only). Published as "Gillespie Canal" prior to 1951.

09519000. Enterprise Canal: June 1935 to Sept. 1939 (discharge measurements and monthly estimates only), Oct. 1939 to Sept. 1971, Apr. 1974 to current year (since Oct. 1941, monthly discharge only).

GAGE--Gila Bend Canal: Water-stage recorder 200 ft downstream from headgates. Enterprise Canal: Water-stage recorder 600 ft downstream from intake at dam.

REMARKS--Records fair, except for estimated daily discharges, which are poor. Record is obtained by combining, on a daily basis, the flows of Gila Bend Canal, Enterprise Canal, and Gila River below Gillespie Dam.

Many large diversions above station for irrigation, municipal, and industrial use. Flow of Gila River and tributaries above this station is regulated: by San Carlos Reservoir on Gila River - capacity, 1,073,600 acre-ft; by a series of reservoirs on Salt River - capacity, 1,755,000 acre-ft; by Bartlett and Horseshoe Reservoirs on Verde River - capacity, 317,700 acre-ft; and by Waddell Dam (1992) on Agua Fria River - capacity, 816,000 acre-ft.

AVERAGE DISCHARGE--67 years, 123 ft³/s, 364,400 acre-ft/yr; median of yearly mean discharges, 140 ft³/s, 101,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD--Maximum daily discharge, 130,000 ft³/s, estimated, Jan. 9, 1993; no flow except for possible leakage of less than 5 ft³/s Nov. 24--27, 1966, July 14, 1967.

EXTREMES FOR CURRENT YEAR--Maximum daily discharge, 420 ft³/s, Sept. 9. Minimum daily discharge, 25 ft³/s, Aug. 15 and Aug. 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	121	161	218	182	189	254	156	33	e124	64	41
2	92	136	166	218	191	198	192	122	71	e143	34	30
3	97	151	174	165	207	221	153	148	73	e132	42	49
4	98	109	159	153	196	188	145	90	82	e96	36	41
5	93	104	160	158	170	164	113	113	62	e80	30	38
6	93	90	203	173	153	190	120	115	61	e91	50	40
7	137	84	182	188	144	230	103	119	49	e71	41	32
8	137	83	192	163	155	243	140	99	43	e66	37	331
9	146	57	191	173	152	192	139	104	55	e75	45	420
10	144	58	190	170	176	173	139	103	49	e74	41	129
11	136	51	173	156	192	207	142	99	30	e64	39	108
12	136	49	184	160	204	179	142	96	52	e83	52	89
13	131	26	203	168	192	175	141	107	59	e70	38	100
14	130	30	204	178	180	205	130	77	78	e49	33	105
15	159	56	206	162	181	211	99	48	78	e198	25	120
16	140	86	207	165	182	180	114	79	78	e138	32	99
17	130	132	216	163	184	185	100	55	66	e153	47	93
18	126	122	203	171	187	206	99	56	61	e150	51	106
19	111	125	188	153	172	224	98	77	42	e103	53	83
20	111	107	192	169	188	212	98	92	38	89	49	55
21	138	132	188	184	174	196	99	80	34	98	39	66
22	164	135	172	151	171	214	97	111	52	101	39	60
23	168	152	170	184	163	199	98	97	28	98	48	68
24	137	132	194	190	170	191	114	92	53	60	40	64
25	128	142	198	162	204	218	133	99	60	71	45	63
26	77	148	182	180	198	213	131	99	70	64	62	49
27	110	152	149	194	169	179	114	128	94	47	50	48
28	94	150	125	197	190	166	127	112	e101	58	62	50
29	124	165	136	213	---	161	128	72	e106	49	49	51
30	98	161	145	184	---	185	149	91	e127	81	29	53
31	113	---	213	170	---	202	---	49	---	52	25	---
TOTAL	3789	3246	5626	5433	5027	6096	3851	2985	1885	2828	1327	2681
MEAN	122.2	108.2	181.5	175.3	179.5	196.6	128.4	96.29	62.83	91.23	42.81	89.37
MAX	168	165	216	218	207	243	254	156	127	198	64	420
MIN	77	26	125	151	144	161	97	48	28	47	25	30
AC-FT	7520	6440	11160	10780	9970	12090	7640	5920	3740	5610	2630	5320
(*)	6460	4230	2900	7060	6400	7510	6160	4940	2340	3410	1920	2860
(**)	778	747	875	855	647	1300	621	537	695	718	674	773

CAL YR 2001 TOTAL 53397 MEAN 146.3 MAX 288 MIN 26 AC-FT 105900 (*) 55310 (**) 7940
WTR YR 2002 TOTAL 44774 MEAN 122.7 MAX 420 MIN 25 AC-FT 88810 (*) 56210 (**) 9220

e Estimated

(*) Diversions, in acre-feet, to Gila Bend Canal (09518500)

(**) Diversions, in acre-feet, to Enterprise Canal (09519000)

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ—CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD --Feb. 1926 to June 1927 and Mar. 1946 (partial-record station), Dec. 1950 to Sept. 1971, Dec. 1971 to June 1973 (partial-record station), Mar. 1974 to current year. Prior to Oct. 1967, published as 09519500, "Gila River below Gillespie Dam."

PERIOD OF DAILY RECORD --

SPECIFIC CONDUCTANCE: Oct. 1964 to June 1968, Aug. to Sept. 1968, Feb. to Sept. 1969, Oct. 1970 to Sept. 1971, and Apr. 1974 to July 1981.

WATER TEMPERATURES: Dec. 1950 to Feb. 1968, May to Aug. 1969, Oct. 1970 to Sept. 1971, and Apr. 1974 to July 1981.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TUR-BID-ITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L) (00904)	HARD-NESS TOTAL (MG/L) CAC03 (00900)	CALCIUM DIS-SOLVED (MG/L) AS CA (00915)
OCT 04...	0930	98	25	740	8.0	97	8.1	4630	26.0	22.7	520	790	176
MAR 22...	1145	219	15	741	8.8	95	8.0	4570	29.5	16.7	530	800	183
APR 25...	1125	142	41	739	7.8	94	8.1	5630	33.5	22.0	630	940	221
AUG 27...	1050	54	30	740	8.8	114	8.2	4840	44.0	26.0	610	870	201
Date	CALCIUM TOTAL RECOVERABLE (MG/L AS CA) (00916)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNE-SIUM, TOTAL RECOVERABLE (MG/L AS MG) (00927)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ALKA-LINITY WAT DIS TOT IT FIELD CAC03 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE SOLVED (MG/L AS SO4) (00945)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)
OCT 04...	179	84.0	84.0	11.0	11	680	262	320	<1	950	1.7	640	50
MAR 22...	186	84.0	90.0	11.0	10	640	277	337	<1	940	1.6	620	23
APR 25...	231	93.0	100	9.70	12	830	300	366	<1	1210	1.9	800	62
AUG 27...	207	90.0	92.0	10.0	11	730	261	287	16	1120	1.6	710	67
Date	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	E COLI, MTEC MF WATER (COL/100 ML) (31633)
OCT 04...	4.04	2970	2700	.90	.03	.04	10.0	.87	11	48.2	.79	24	E400k
MAR 22...	3.98	2930	2650	1.0	.09	.12	10.0	.91	11	48.7	.94	20	E77k
APR 25...	4.99	3670	3350	1.3	.22	.28	13.0	1.1	14	63.3	.42	14	E67k
AUG 27...	4.47	3290	3090	1.4	.04	.05	10.0	1.4	11	50.5	.41	22	E73
Date	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ANTI-MONY, TOTAL SOLVED (UG/L AS SB) (01097)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	BORON, TOTAL RECOVERABLE (UG/L AS B) (01022)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)
OCT 04...	300	<1	<1	7	11	58.0	67.0	<1	2	2030	2120	<.5	2.0
MAR 22...	170	<1	<1	6	6	56.0	65.0	<1	<1	1820	1940	<.5	<.5
APR 25...	E270k	<1	<1	13	13	70.0	77.0	<2	<1	2620	2610	<.5	<.5
AUG 27...	--	<1	<1	10	12	57.0	72.0	<1	<1	2280	2290	<.5	<.5

GILA RIVER BASIN
09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ—CONTINUED

WATER-QUALITY RECORDS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)
	OCT 04...	<1	3	<2	5	2	1150	<2	2	13	70	<.10	<.1
MAR 22...	1	3	<2	3	3	559	<2	<2	52	81	<.10	<.1	4
APR 25...	<1	3	<2	5	6	1580	<2	<2	91	168	<.10	<.1	4
AUG 27...	<1	2	<2	4	<2	800	<2	<2	3	84	<.10	<.1	3

Date	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL SOLVED (UG/L AS SE) (01147)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	STRON- TIUM, TOTAL RECOV- ERABLE (UG/L AS SR) (01082)	THAL- LIUM, DIS- SOLVED (UG/L AS TL) (01057)	THAL- LIUM, TOTAL SOLVED (UG/L AS TL) (01059)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)
	OCT 04...	4	2	2	<1	2	3050	<2	<2	7	7	44
MAR 22...	4	9	9	<1	<1	3060	<2	<2	7	7	22	7.6
APR 25...	4	13	13	<1	1	4150	<2	<2	10	11	60	20.7
AUG 27...	3	10	11	<1	<1	3540	<2	<2	2	10	41	4.5

Remark codes used in this report:

< -- Less than
E -- Estimated value

Value qualifier codes used in this report:
k -- Counts outside acceptable range

GILA RIVER BASIN

275

09519800 GILA RIVER BELOW PAINTED ROCK DAM, AZ

LOCATION--Lat 33° 04'30", long 113° 00'50", in SE1/4 sec. 18, T.4 S., R.7 W., Maricopa County, Hydrologic Unit 15070201, on left bank 0.3 mi downstream from Painted Rock Dam and 19 mi northeast of Sentinel.

DRAINAGE AREA--50,910 mi², approximately.

PERIOD OF RECORD--Oct. 1959 to current year.

GAGE--Water-stage recorder. Datum of gage is 518.69 ft above sea level (levels by Army Corps of Engineers). Auxiliary gage at site 0.3 mi upstream: May 5, 1969, to Mar.30, 1973, at datum 2.87 ft higher; Feb. 8, 1979 to Jan. 21, 1993, at same datum.

REMARKS--No estimated daily discharges. Records poor. Many diversions above station for irrigation. Flow above station regulated by many reservoirs, the largest of which is Painted Rock Reservoir—capacity, 2,492,000 acre-ft. (See REMARKS for sta 09518000, Gila River above diversions, at Gillespie Dam.)

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 32,000 ft³/s, Feb. 26, 1993, before dike broke, gage height, 16.79 ft; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR--No flow for the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CAL YR 2001	TOTAL	26.59	MEAN	0.073	MAX	1.9	MIN	0.00	AC-FT	53		
WTR YR 2002	TOTAL	0.00	MEAN	0.000	MAX	0.00	MIN	0.00	AC-FT	0.00		

GILA RIVER BASIN

09520280 GILA RIVER NEAR DATELAND, AZ

LOCATION--Lat 32° 52' 56", long 113° 32' 26", in NE_{1/4}NE_{1/4}NE_{1/4} sec. 25, T.6 S., R.13 W., Yuma County, Hydrologic Unit 15070201, in center of channel on downstream side of bridge on Hyder Road, (Ave 64E), and 5.5 mi north of Dateland, AZ.

DRAINAGE AREA--55,000 m², approximately.

PERIOD OF RECORD--Oct. 1993 to current year.

GAGE--Water-stage recorder. Elevation of gage is 363.33 ft above sea level, from Highway Department bridge pin. Prior to Oct. 1, 1993, gage site was located downstream at Ave 51E.

REMARKS--No estimated daily discharges. Records fair. The flow is regulated by Painted Rock Dam. Capacity of the reservoir at Painted Rock Dam is 2,492,000 acre-ft. (See remarks for sta 09519800.)

EXTREMES FOR PERIOD OF RECORD--Maximum daily discharge, 3,320 ft³/s July 3, 1995. No flow for many days.

EXTREMES FOR CURRENT YEAR--No flow all year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CAL YR 2001	TOTAL 0.00	MEAN 0.000	MAX 0.00	MIN 0.00	AC-FT 0.00							
WTR YR 2002	TOTAL 0.00	MEAN 0.000	MAX 0.00	MIN 0.00	AC-FT 0.00							

09520500 GILA RIVER NEAR DOME, AZ

LOCATION--Lat 35° 45'39", long 114° 25'11", in SW_{1/4} sec. 4, T.8 S., R.21 E., Yuma County, Hydrologic Unit 15070201, on right bank 440 ft upstream from McPhaul bridge on old route of State Highway 95, 3 mi west of Dome, and 12 mi upstream from mouth.

DRAINAGE AREA--57,850 mi², approximately, includes 373 mi² in Aubrey Valley Playa, a closed basin, but excludes all other closed basins.

PERIOD OF RECORD--Jan. 1903 to current year. Monthly total, maximum, and minimum daily discharges only for Jan. 1903 to Dec. 1904 and Jan. 1906 to July 1929 in WSP 918 or WSP 1313. Published as "at Yuma and Gila City" 1903, as "near Dome" 1904, and as "at Dome (Gila City)" 1905-06. Records for 1907--29 are published in WSP 918 as "at Yuma and at and near Dome."

REVISED RECORDS--WSP 918: 1905. WSP 1733: July 1942. WSP 1926: Drainage area.

GAGE--Water-stage recorder. Datum of gage is 139.18 ft above sea level. Prior to Oct. 1903 and Jan. 1907 to Apr. 1929, no gage; discharge estimated. Oct. 1903 to Dec. 1906, principal nonrecording gage 4 mi upstream at datum 19.19 ft higher, supplemented by many nonrecording gages at different datums. May 1929 to May 31, 1981, at datum 9.00 ft higher.

REMARKS--No estimated daily discharge. Records good. Many diversions above station for irrigation. Flow above station regulated by reservoirs at and above Painted Rock Dam; capacity of reservoir at Painted Rock Dam is 2,492,000 acre-ft. Painted Rock Reservoir, which is for flood control only, was completed in Oct. 1959 (see also REMARKS for sta 09518000).

EXTREMES FOR PERIOD OF RECORD--1903--29: Maximum daily discharge, 200,000 ft³/s, roughly estimated, Jan. 22, 1916.

1929--59: Maximum discharge, 20,700 ft³/s Feb. 15, 1932, gage height, 25.75 ft, present datum; no flow for part or all of most years.

1959--2002: Maximum discharge 28,900 ft³/s Mar. 3, 1993, maximum gage height, 26.81 ft; no flow for part or all of most years.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 313 ft³/s June 16 at 0830, gage height, 15.51 ft. Minimum daily discharge, 2.2 ft³/s Aug. 16--17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.6	10	14	18	22	30	24	17	11	5.1	4.0	3.2
2	11	8.7	13	19	27	30	22	17	9.2	5.9	3.8	3.1
3	10	12	12	18	26	33	22	17	8.7	4.8	3.1	3.8
4	10	11	15	16	31	29	20	19	11	4.7	2.7	4.4
5	11	10	14	16	30	74	21	16	7.4	7.6	3.1	4.4
6	8.8	10	15	19	28	109	23	15	7.4	6.2	4.7	4.4
7	9.9	10	15	22	30	113	21	14	8.0	4.9	3.8	4.5
8	7.6	14	14	20	32	110	23	14	7.1	5.1	3.6	4.3
9	11	10	14	20	30	106	21	14	7.1	5.1	2.8	5.3
10	11	8.7	16	19	26	106	20	13	8.1	4.8	4.6	3.9
11	11	9.2	17	23	26	104	19	16	11	4.9	2.9	4.4
12	8.9	9.7	15	26	28	113	19	13	8.8	6.1	3.1	4.8
13	11	9.2	15	25	30	114	19	13	7.8	7.4	2.9	5.8
14	14	10	15	29	28	57	20	13	7.2	8.4	4.0	4.5
15	14	10	17	30	27	41	18	12	6.9	7.7	2.5	4.1
16	14	11	19	27	34	36	21	13	52	4.7	2.2	4.3
17	12	11	18	28	68	39	17	12	7.4	4.7	2.2	5.7
18	8.0	11	16	29	30	33	16	12	6.4	5.2	2.3	4.9
19	9.2	11	19	30	30	29	16	12	5.7	4.3	5.3	5.3
20	14	11	17	32	31	28	19	10	5.0	2.6	4.8	6.4
21	10	14	18	32	28	26	16	11	5.0	3.7	4.4	8.1
22	9.5	15	19	33	28	28	16	11	4.2	3.0	4.4	9.9
23	10	13	17	34	33	28	16	12	4.0	4.0	3.7	7.6
24	10	12	18	34	32	28	17	11	3.8	3.6	4.3	7.5
25	8.8	12	53	37	29	27	17	10	5.0	3.1	3.1	6.8
26	8.2	12	23	37	31	28	16	12	5.3	3.2	3.1	6.7
27	11	10	19	41	31	25	20	11	4.8	4.0	4.0	7.2
28	9.5	13	18	42	29	24	20	10	4.9	3.9	5.7	7.8
29	8.7	11	20	36	---	23	19	11	4.7	4.5	5.3	7.8
30	9.1	10	20	27	---	24	19	10	4.3	3.8	4.5	7.8
31	8.0	---	19	22	---	24	---	12	---	3.3	3.5	---
TOTAL	316.8	329.5	554	841	855	1619	577	403	249.2	150.3	150.4	168.7
MEAN	10.22	10.98	17.87	27.13	30.54	52.23	19.23	13.00	8.307	4.848	4.852	5.623
MAX	14	15	53	42	68	114	24	19	52	8.4	40	9.9
MIN	7.6	8.7	12	16	22	23	16	10	3.8	2.6	2.2	3.1
AC-FT	628	654	1100	1670	1700	3210	1140	799	494	298	298	335
CAL YR 2001	TOTAL	3508.61	MEAN	9.613	MAX	54	MIN	0.00	AC-FT	6960		
WTR YR 2002	TOTAL	6213.9	MEAN	17.02	MAX	114	MIN	2.2	AC-FT	12330		

COLORADO RIVER MAIN STEM

09521100 COLORADO RIVER BELOW YUMA MAIN CANAL
WASTEWAY, AT YUMA, AZ

LOCATION.--Lat 32° 43'54", long 114° 37'55", in SW_{1/4}SW_{1/4} sec. 26, T.16 S., R.22 E., San Bernardino meridian, in Imperial County, CA, Hydrologic Unit 15030107, on right bank 1,000 ft downstream from Yuma Main Canal wasteway, 0.6 mi downstream from former gaging station on Colorado River at Yuma, 1.1 mi northwest of downtown post office in Yuma, 5.2 mi downstream from Gila River, and 6.4 mi upstream from northerly international boundary.

DRAINAGE AREA.--246,500 mi², approximately, including all closed basins entirely within the drainage boundary, also 3,959 mi² in Great Divide basin in southern Wyoming.

PERIOD OF RECORD.--Oct. 1963 to current year. If records for Yuma Main Canal wasteway at Yuma (sta 09525000) and Reservation Main Drain No. 4 (sta 09530000) are subtracted from records at this station, records equivalent to those published 1902--64 as "Colorado River at Yuma" (sta 09521000) can be obtained.

GAGE.--Water-stage recorder. Datum of gage is 101.99 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, municipal, and industrial uses, and return flows from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,600 ft³/s Aug. 19, 1983, gage height, 26.67 ft; maximum gage height, 27.67 ft July 4, 1983; minimum daily discharge, 260 ft³/s Jan. 17, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum gage height since at least 1878, 34.0 ft Jan. 22, 1916, discharge, 250,000 ft³/s, at former gaging station at Yuma.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,990 ft³/s Mar.11 at 0400, gage height, 15.40 ft. Minimum daily discharge, 586 ft³/s Jan. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1	895	892	737	680	660	719	1040	1070	753	865	714	1240	
2	848	895	757	607	674	770	1080	956	761	826	767	1240	
3	839	937	719	586	725	1290	1110	1500	808	971	760	1250	
4	955	923	700	623	749	2370	1150	2650	1450	968	760	1260	
5	929	1020	680	648	675	3160	1150	2350	1470	1050	866	1250	
6	832	1040	658	662	696	1990	1350	1880	927	891	895	1220	
7	788	1050	629	630	686	1770	1670	1430	829	774	857	1210	
8	796	1050	661	618	672	2620	1590	1200	809	802	947	1940	
9	790	1050	663	608	674	2940	1190	1320	810	1030	856	1990	
10	807	1040	641	604	698	3420	1180	1170	804	892	842	1990	
11	979	1260	646	598	674	3110	1220	1390	793	851	908	2450	
12	776	1220	642	594	673	1960	1220	2160	801	935	1330	1810	
13	700	1190	646	589	694	1390	1230	2380	822	883	1380	1180	
14	684	1160	649	614	660	995	1220	1720	1230	856	1330	1470	
15	675	1160	626	641	661	964	1320	1670	1160	846	1340	2120	
16	663	1150	610	642	662	936	1210	1320	879	947	1330	1500	
17	681	1140	609	631	685	1180	1080	1190	839	859	1340	1300	
18	683	1150	617	625	945	2220	979	1200	938	810	1330	1240	
19	666	1150	631	615	833	1680	988	1210	948	853	1340	1300	
20	713	1160	629	635	812	1110	1120	1290	1050	833	1290	1290	
21	1050	1210	639	625	738	1080	1060	1270	861	820	1280	1260	
22	1130	1230	622	620	704	1140	1190	1230	740	776	1290	1270	
23	909	1220	640	638	703	1070	1040	1220	766	782	1290	1300	
24	1290	1380	676	641	710	1090	1030	1330	784	809	1300	1160	
25	1110	1370	702	627	719	1080	1000	1670	740	814	1760	833	
26	865	1220	640	632	778	1100	981	1390	729	793	1560	781	
27	837	1570	617	622	962	950	1030	1250	714	772	1260	715	
28	903	1250	615	625	758	826	968	1270	716	857	1250	713	
29	960	1180	607	621	---	786	961	1340	771	938	1250	715	
30	790	694	616	670	---	787	1040	1060	777	908	1220	965	
31	755	---	627	655	---	878	---	861	---	866	1220	---	
TOTAL	26298	33961	20151	19426	20280	47381	34397	44947	26479	26877	35862	39962	
MEAN	848.3	1132	650.0	626.6	724.3	1528	1147	1450	882.6	867.0	1157	1332	
MAX	1290	1570	757	680	962	3420	1670	2650	1470	1050	1760	2450	
MIN	663	694	607	586	660	719	961	861	714	772	714	713	
AC-FT	52160	67360	39970	38530	40230	93980	68230	89150	52520	53310	71130	79260	
CAL YR 2001	TOTAL 371806	MEAN 1019	MAX 3680	MIN 607	AC-FT 737500								
WTR YR 2002	TOTAL 376021	MEAN 1030	MAX 3420	MIN 586	AC-FT 745800								

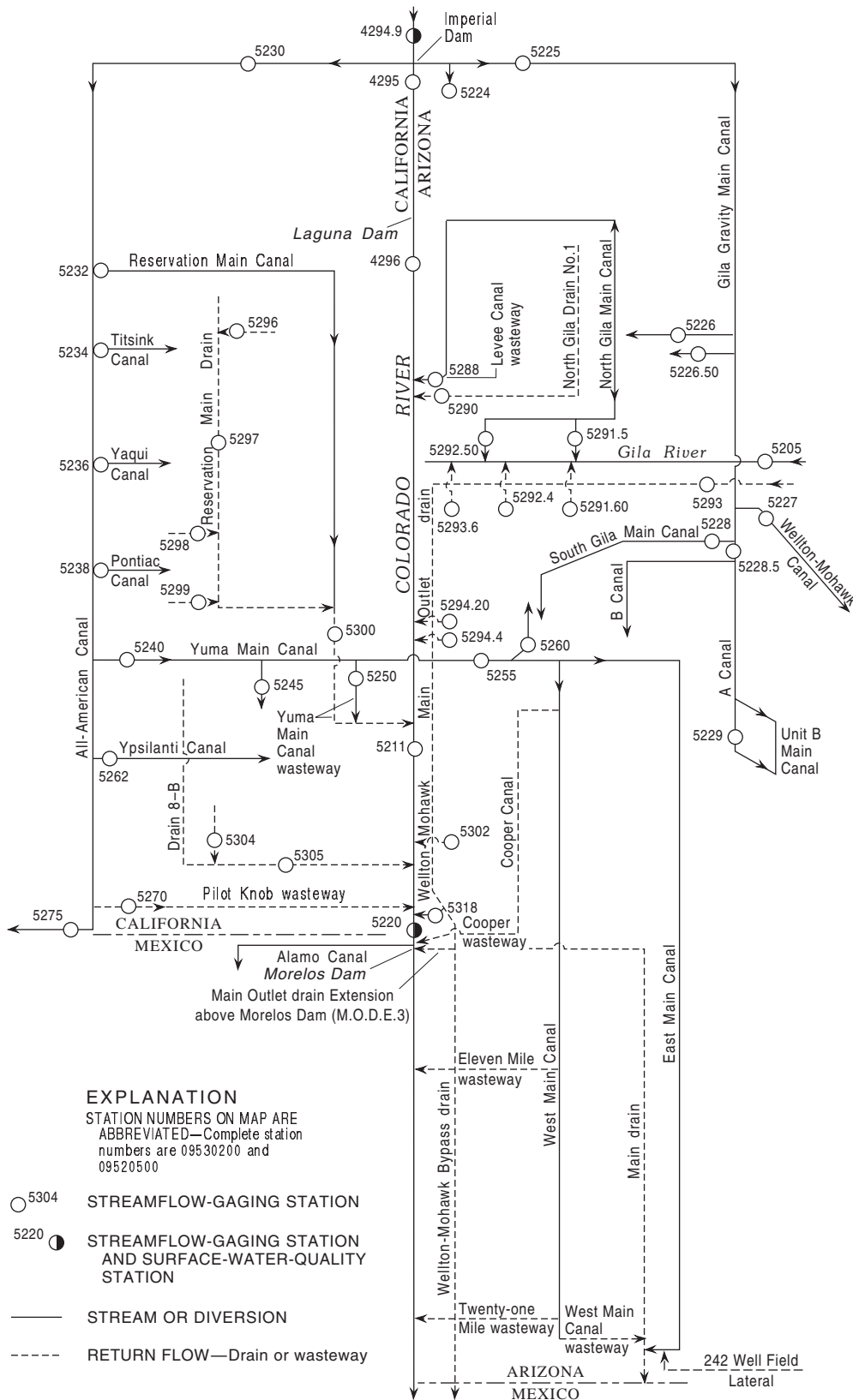


Figure 6. Streamflow-gaging stations and water-quality stations on streams, diversions, and return flows between Imperial Dam and the southerly international boundary.

COLORADO RIVER MAIN STEM

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY, ABOVE MORELOS DAM, NEAR ANDRADE, CA
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK)

LOCATION.--Lat 32° 43'07", long 114° 43'05", in NE1/4SE1/4 sec. 21, T.8 S., R.24 W., Gila and Salt River meridian, in Yuma County, AZ, Hydrologic Unit 15030108, on left bank at northerly international boundary, 0.5 mi east of Andrade, 1.1 mi upstream from Morelos Dam, 1.1 mi downstream from Rockwood Gate, and 6.4 mi downstream from gaging station on Colorado River below Yuma Main Canal wasteway.

DRAINAGE AREA.--246,700 mi², approximately, including all closed basins entirely within the drainage boundary, also 3,959 mi² in Great Divide Basin in southern Wyoming.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jan. 1950 to current year. Prior to Oct. 1958 published as "at international boundary."

GAGE.--Water-stage recorder. Datum of gage is mean sea level. Supplementary water-stage recorder 1,680 ft upstream at same datum.

REMARKS.--No estimated daily discharges. This record shows water passing northerly international boundary. Minor diversions to the United States below this station by pumping from ground water for irrigation in the floodway between river and Yuma levee.

COOPERATION.--Records furnished by International Boundary and Water Commission, U.S. Section (discharge figures rounded in accordance with U.S. Geological Survey standard practice).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,600 ft³/s Aug. 20, 1983; maximum elevation, 115.65 ft Aug. 18 and 19, 1983; minimum discharge, 495 ft³/s Sept. 28, 1970; minimum elevation, 101.72 ft, Nov. 2, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 4,870 ft³/s Apr. 8. Minimum daily discharge, 855 ft³/s Oct. 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1220	1100	1610	1700	2300	2650	3670	2080	1780	1710	1680	1320
2	1200	1140	1640	1630	2340	2730	3600	1970	1810	1710	1650	1290
3	1170	1240	1760	1640	2310	2850	3270	2210	1850	1780	1660	1350
4	1240	1240	1840	1810	2600	3360	3290	2810	2330	2040	1670	1410
5	1230	1240	1830	2270	2480	3920	3290	2620	2510	2270	1640	1340
6	1130	1320	1850	2650	2490	3100	3710	2220	1850	2400	1640	1420
7	1050	1310	1820	2010	2630	2830	4340	1760	1710	2400	1650	1370
8	1000	1290	1840	1880	2260	3570	4870	1440	1710	2280	1670	2060
9	1040	1280	1830	2840	2400	3810	4630	1540	1710	1860	1590	2210
10	1140	1270	1860	3330	2590	4270	3880	1480	1780	1840	1580	2420
11	1360	1450	1850	2560	2860	4340	3410	1640	1730	1860	1610	2930
12	1160	1510	1860	2080	2860	3710	3200	2310	1740	2370	1420	2990
13	1010	1380	1870	1910	2790	3960	3150	2440	1620	2370	1500	1690
14	996	1440	1890	2110	2680	3600	3300	1980	2340	1970	1460	1580
15	996	1360	1850	2070	2660	3250	3220	1980	2310	1940	1460	2040
16	968	1410	1800	2040	2650	3000	3140	1670	2610	1810	1470	1730
17	992	1390	1800	2020	2700	3090	3210	1360	2170	1780	1460	1490
18	1010	1390	1790	1900	3000	3570	3160	1430	1820	1760	1500	1330
19	968	1420	1780	1880	2900	3710	3240	1430	1640	1740	1470	1350
20	1040	1370	1780	1940	2870	3360	3260	1620	1870	1840	1400	1380
21	1410	1470	1810	2070	2830	3020	3330	1500	1770	1830	1340	1340
22	1550	1490	1780	2250	2810	3130	3110	1470	1740	1790	1390	1350
23	1310	1520	1890	2220	2820	3130	2860	1440	1740	1790	1390	1420
24	1710	1650	2290	2200	2850	3460	2830	1640	1770	1780	1420	1630
25	1530	1690	1950	2090	2900	3020	2800	1970	1770	1820	1790	2350
26	1110	1550	1740	2130	2900	3090	2720	1770	1770	1830	1780	1800
27	1070	1780	1770	2150	3040	3030	2950	1490	1800	1730	1440	1540
28	1070	1620	1530	2410	2860	2980	2750	1470	1840	1680	1390	1470
29	1320	1490	1510	2430	---	2990	2590	1600	1840	1670	1380	1370
30	961	1720	1550	2250	---	3080	2640	1640	1860	1700	1400	1430
31	855	---	1620	2350	---	3990	---	1790	---	1700	1330	---
TOTAL	35816	42530	55590	66820	75380	103600	99420	55770	56790	59050	47230	50400
MEAN	1155	1418	1793	2155	2692	3342	3314	1799	1893	1905	1524	1680
MAX	1710	1780	2290	3330	3040	4340	4870	2810	2610	2400	1790	2990
MIN	855	1100	1510	1630	2260	2650	2590	1360	1620	1670	1330	1290
AC-FT	71040	84360	110300	132500	149500	205500	197200	110600	112600	117100	93680	99970
CAL YR 2001	TOTAL 789716	MEAN 2164	MAX 8550	MIN 855	AC-FT 1566000							
WTR YR 2002	TOTAL 748396	MEAN 2050	MAX 4870	MIN 855	AC-FT 1484000							

COLORADO RIVER MAIN STEM

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY, ABOVE MORELOS DAM, NEAR ANDRADE, CA—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	RA-226		U-234		U-235		U-238		SEDI-		
	2 SIGMA URANIUM -238 WATER DISSOLV (PCI/L) (22603)	SED, SUSP, TOTAL, DRY WGT (PCI/G) (75943)	2 SIGMA RA-226 SED, SUSP, TOTAL, DRY WGT (PCI/G) (75944)	2 SIGMA U-234 SED, SUSP, TOTAL, DRY WGT (PCI/G) (75941)	2 SIGMA U-234 SED, SUSP, TOTAL, DRY WGT (PCI/G) (75942)	2 SIGMA U-235 SED, SUSP, TOTAL, DRY WGT (PCI/G) (75947)	2 SIGMA U-235 SED, SUSP, TOTAL, DRY WGT (PCI/L) (75975)	2 SIGMA U-238 SED, SUSP, TOTAL, DRY WGT (PCI/G) (04113)	2 SIGMA U-238 SED, SUSP, TOTAL, DRY WGT (PCI/G) (75940)	SEDI- MENT, DIS- CHARGE, SUS- SUS- PENDEDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- SUS- PENDEDED (T/DAY) (80155)
NOV											
15...	--	--	--	--	--	--	--	--	--	10	38.3
15...	--	--	--	--	--	--	--	--	--	10	38.3
15...	--	--	--	--	--	--	--	--	--	13	--
JAN											
24...	--	--	--	--	--	--	--	--	--	5.0	29.7
24...	--	--	--	--	--	--	--	--	--	5.0	29.7
24...	--	--	--	--	--	--	--	--	--	5.0	--
24...	--	--	--	--	--	--	--	--	--	--	--
MAR											
18...	1.4	.04	.1	.09	.1	.04	M	.11	.1	11	107
18...	--	--	--	--	--	--	--	--	--	13	--
18...	1.5	.05	.1	.11	.1	.05	.0	.06	M	--	--
APR											
18...	--	--	--	--	--	--	--	--	--	17	144
18...	--	--	--	--	--	--	--	--	--	15	--
MAY											
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	12	59.4
16...	--	--	--	--	--	--	--	--	--	8.0	--
AUG											
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	22	82.9
27...	--	--	--	--	--	--	--	--	--	25	--

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

COLORADO RIVER MAIN STEM

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY, ABOVE MORELOS DAM, NEAR ANDRADE, CA—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Water-quality measurements in the following table were made as part of the National Stream-Quality Accounting Network Program and ADEQ Fixed-Station Network Program. The following analyses are quality-assurance samples processed during the 2001 sampling period and are defined in the introductory text section titled "Water-Quality Control Data".

Date	Time	Sample type	UV ABSORB-ANCE 254 NM, WTR FLT (UNITS /CM) (50624)	UV ABSORB-ANCE 280 NM, WTR FLT (UNITS /CM) (61726)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)		
NOV	15...	0955	2	--	<.02	<.03	<.1	--	--	<.20	<.01	--	<.020		
NOV	15...	1005	2	<.004	<.004	<.01	<.008	<.09	<.13	<.015	--	<.013	--		
AUG	27...	0805	1	--	--	--	--	--	--	--	--	--	--		
Date			NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, PHOSPHATE, WAT FLT SUSP (MG/L AS P) (49570)	ORTHO-PHOSPHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	CARBON, INORGANIC PARTIC. (MG/L AS C) (00694)	CARBON, ORGANIC PARTIC. (MG/L AS C) (00688)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTICULATE TOTAL (MG/L AS C) (00689)	ALUMINUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTIMONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYLLIUM, DIS-SOLVED (UG/L AS BE) (01010)
NOV	15...	--	--	--	<.02	--	--	--	--	<3	--	--	<.5	<1	
NOV	15...	<.002	<.02	<.007	--	.1	<.1	<.3	.1	<1	<.05	<.2	<1	<.06	
AUG	27...	--	--	--	--	--	--	--	--	--	--	--	--	--	
Date			BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM, DIS-SOLVED (UG/L AS CD) (01025)	CHROMIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM, DIS-SOLVED (UG/L AS LI) (01130)	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYBDENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELENIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)
NOV	15...	--	<.5	<1	--	<2	<2	<2	--	<1	--	<1	<.06	E.2	<1
NOV	15...	<7	<.04	<.8	<.02	<.2	<10	<.08	<.3	<.1	<.2	<.06	<.06	E.2	<1
AUG	27...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Date			STRONTIUM, DIS-SOLVED (UG/L AS SR) (01080)	THALLIUM, DIS-SOLVED (UG/L AS TL) (01057)	VANADIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	2,6-DIETHYL ANILINE, WAT FLT GF, REC (UG/L) (82660)	ACETOCHLOR, WATER, REC (UG/L) (49260)	ALACHLOR, WATER, REC (UG/L) (46342)	ALPHA BHC, DIS-SOLVED (UG/L) (34253)	ATRAZINE, WATER, DIS-SOLVED (UG/L) (39632)	BENFLURIN, ALIN, WAT FLD GF, REC (UG/L) (82673)	BUTYLATE, WATER, DIS-SOLVED (UG/L) (04028)	CARBARYL, WATER, FLTRD GF, REC (UG/L) (82680)	CARBURAN, WATER, FLTRD GF, REC (UG/L) (82674)
NOV	15...	--	--	--	<2	--	--	--	--	--	--	--	--	--	--
NOV	15...	<.08	<.04	<.2	<1	--	--	--	--	--	--	--	--	--	--
AUG	27...	--	--	--	--	.109	.120	.120	.145	.111	.094	.098	.098	E.116	E.120
Date			CHLOROPYRIFOS, DIS-SOLVED (UG/L) (38933)	CYANAZINE, WATER, DISS, REC (UG/L) (04041)	DCPA, WATER, FLTRD GF, REC (UG/L) (82682)	DEETHYLZINE, WATER, DISS, REC (UG/L) (04040)	DIAZINON, D10 SRG, WAT FLT GF, REC PERCENT (UG/L) (91063)	DIAZINON, DISS-SOLVED (UG/L) (39572)	DIELDORIN, DIS-SOLVED (UG/L) (39381)	DISULFOTON, WATER, FLTRD GF, REC (UG/L) (82677)	EPTC, WATER, FLTRD GF, REC (UG/L) (82668)	ETHALFLURIN, ALIN, WAT FLD GF, REC (UG/L) (82663)	ETHOPROPRATE, WATER, FLTRD GF, REC (UG/L) (82672)	FONOFOS, WATER, DISS, REC (UG/L) (04095)	HCH ALPHA, D6 SRG, WAT FLT GF, REC PERCENT (UG/L) (91065)
NOV	15...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV	15...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG	27...	.107	.140	.118	E.068	105	.111	.095	.07	.109	.116	.094	.109	.109	110

COLORADO RIVER MAIN STEM

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY, ABOVE MORELOS DAM, NEAR ANDRADE, CA—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	LIN- URON WATER	MALA- THION, DIS-	METHYL AZIN- PHOS WAT FLT	METHYL PARA- THON WAT FLT	METO- LACHLOR WATER	METRI- BUZIN WATER	MOL- INATE WATER	NAPROP- AMIDE WATER	P,P' DDE	PARA- THION, DIS-	PEB- ULATE WATER	PENDI- METH- ALIN WAT FLT	
	FLTRD 0.7 U SOLVED (UG/L) (39341)	FLTRD 0.7 U SOLVED (UG/L) (82666)	FLTRD 0.7 U SOLVED (UG/L) (39532)	FLTRD 0.7 U SOLVED (UG/L) (82686)	FLTRD 0.7 U SOLVED (UG/L) (82667)	FLTRD 0.7 U DISSOLV (UG/L) (39415)	FLTRD 0.7 U DISSOLV (UG/L) (82630)	FLTRD 0.7 U GF, REC (UG/L) (82671)	FLTRD 0.7 U GF, REC (UG/L) (82684)	FLTRD 0.7 U DISSOLV (UG/L) (34653)	FLTRD 0.7 U SOLVED (UG/L) (39542)	FLTRD 0.7 U GF, REC (UG/L) (82669)	FLTRD 0.7 U GF, REC (UG/L) (82683)
NOV													
15...	--	--	--	--	--	--	--	--	--	--	--	--	
15...	--	--	--	--	--	--	--	--	--	--	--	--	
AUG													
27...	.109	.142	.107	E.178	.127	.118	.098	.102	.105	.061	.127	.106	.095
	PER- METHRIN CIS WAT FLT	PHORATE WATER FLTRD	PRO- METON, WATER, DISS, REC	PRON- AMIDE WATER FLTRD	PROPA- CHLOR, WATER, DISS, REC	PRO- PANIL WATER FLTRD	PRO- PARGITE WATER FLTRD	SI- MAZINE, WATER, DISS, REC	TEBU- THIURON WATER FLTRD	TER- BACIL WATER FLTRD	TER- BUFOS WATER FLTRD	THIO- BENCARB WATER FLTRD	TRIAL- LATE WATER FLTRD
Date	0.7 U GF, REC (82687)	0.7 U GF, REC (82664)	0.7 U REC (04037)	0.7 U DISS, REC (82676)	0.7 U DISS, REC (04024)	0.7 U FLTRD (82679)	0.7 U FLTRD (82685)	0.7 U DISS, REC (04035)	0.7 U GF, REC (82670)	0.7 U GF, REC (82665)	0.7 U GF, REC (82675)	0.7 U GF, REC (82681)	0.7 U GF, REC (82678)
NOV													
15...	--	--	--	--	--	--	--	--	--	--	--	--	
15...	--	--	--	--	--	--	--	--	--	--	--	--	
AUG													
27...	.069	.083	.13	.114	.107	.129	.11	.072	.12	E.113	.09	.108	.114
	TRI- FLUR- ALIN WAT FLT	URANIUM NATURAL DIS- SOLVED (UG/L) AS U											
Date	0.7 U GF, REC (82661)	(22703)											
NOV													
15...	--	--											
15...	--	<.02											
AUG													
27...	.101	--											

Remark codes used in this report:
 < -- Less than
 E -- Estimated value

Two major diversions for irrigation water are located at Imperial Dam, the Gila Gravity Main Canal, and the All-American Canal. The Gila Gravity Main Canal diverts water for irrigation in the Gila Project which is located entirely in Arizona. The All-American Canal diverts water for irrigation in Imperial Valley in California and the Yuma Project in Arizona and California. Between Imperial Dam and the northerly international boundary with Mexico, water is diverted from these principal canals for the individual diversions of the Gila and Yuma Projects.

Between Imperial Dam and the northerly international boundary with Mexico, flows from irrigated areas enter the Colorado River through many drains and wasteways in Arizona and California. Other return flows enter the Gila River below the gaging station near Dome (09520500).

See figure 6 on p. 279 for schematic diagram showing location of diversions and return flows.

Diversions at and below Imperial Dam, AZ-CA

09522500. GILA GRAVITY MAIN CANAL AT IMPERIAL DAM.--See p. 293

09522600. NORTH GILA MAIN CANAL.

LOCATION.--Water-stage recorder and sharp-crested weir, in SW $1/4$ SW $1/4$ sec.23, T.7 S., R.22 W., Yuma County, Hydrologic Unit 15030107, about 700 ft downstream from turnout from Gila Gravity Main Canal and 1.2 mi south of Laguna Dam.

PERIOD OF RECORD.--Oct. 1965 to current year (monthly discharge only).

REMARKS.--Record shows water available for irrigation in North Gila Valley.

09522650. NORTH GILA MAIN CANAL NO. 2.

LOCATION.--Water-stage recorder in SW $1/4$ NW $1/4$ sec.11, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15070201, at turnout from Gila Gravity Main Canal and 3.5 mi downstream from turnout to North Gila Main Canal.

PERIOD OF RECORD.--June 1969 to current year (monthly discharge only).

REMARKS.--Record shows water available for irrigation in North Gila Valley.

09522700. WELLTON-MOHAWK CANAL.

LOCATION.--Three water-stage recorders to record forebay and tailrace elevations and gate openings since June 1, 1974, in NW $1/4$ NE $1/4$ sec.17, T.8 S., R.21 W., Yuma County, Hydrologic Unit 15070201, at turnout from Gila Gravity Main Canal.

PERIOD OF RECORD.--Oct. 1965 to current year (monthly discharge only).

REMARKS.--Record shows water available for irrigation in the Dome, Wellton, and Mohawk areas of the lower Gila Valley.

COOPERATION.--Supplementary record of gate openings furnished by Wellton-Mohawk Irrigation District.

09522800. SOUTH GILA MAIN CANAL.

LOCATION.--Sparling flowmeter, in SE $1/4$ SW $1/4$ sec.36, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15070201, 110 ft downstream from turnout from Gila Gravity Main Canal.

PERIOD OF RECORD.--Oct. 1965 to current year (monthly discharge only).

REMARKS.--Record shows water available for irrigation in South Gila Valley.

COOPERATION.--Daily discharges furnished by Yuma Irrigation District.

09522850. GILA GRAVITY MAIN CANAL AT PUMPING PLANT.

LOCATION.--Intake consisting of five pumps, in NE $1/4$ NW $1/4$ sec.1, T.9 S., R.22 W., Yuma County, Hydrologic Unit 15070201, at end of Gila Gravity Main Canal and head of Yuma Mesa canals.

PERIOD OF RECORD.--Oct. 1965 to current year (monthly discharge only).

REMARKS.--Record shows water available for irrigation on Yuma Mesa and in Yuma Auxiliary Division of Yuma Valley.

COOPERATION.--Records furnished by Yuma Mesa Irrigation and Drainage District.

09522900. UNIT B MAIN CANAL.

LOCATION.--Headworks in NW $1/4$ SW $1/4$ sec.28, T.9 S., R.23 W., Yuma County, Hydrologic Unit 15030108, 5 mi northeast of Somerton.

PERIOD OF RECORD.--Oct. 1965 to current year (monthly discharge only).

REMARKS.--Record shows water available for irrigation in Yuma Auxiliary Division of the Yuma Project.

COOPERATION.--Records furnished by Yuma Mesa Irrigation and Drainage District.

09523000. ALL-AMERICAN CANAL NEAR IMPERIAL DAM.--See p. 294

09523200. RESERVATION MAIN CANAL.

LOCATION.--Water-stage recorder and, since Sept. 5, 1975, gate-opening recorder, in NE $1/4$ NE $1/4$ sec.35, T.15 S., R.23 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030107, at turnout from All-American Canal and 5.8 mi downstream from Imperial Dam.

PERIOD OF RECORD.--Aug. 1950 to current year (monthly discharge only). Prior to Oct. 1965 included in total diversions from All-American Canal and Yuma Main Canal above siphon-drop powerplant and published as part of sta 09524000.

REMARKS.--Record computed from rated gate on turnout from All-American Canal and shows water available for irrigation in parts of Reservation Division of Yuma Project in California.

COOPERATION.--Record of gate openings furnished by Bard Water District.

09523400. TITSINK CANAL.

LOCATION.--Water-stage recorder and Parshall flume in NE $1/4$ SW $1/4$ sec.27, T.15 S., R.23 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030107, 0.6 mi downstream from turnout from All-American Canal and 7.2 mi downstream from Imperial Dam.

PERIOD OF RECORD.--Aug. 1950 to current year (monthly discharge only). Prior to Oct. 1965 included in

total diversions from All-American Canal and Yuma Main Canal above siphon-drop powerplant and published as part of sta 09524000.

REMARKS.--Record shows water available for irrigation in parts of Reservation Division of Yuma Project in California.

Diversions at and below Imperial Dam, AZ-CA--Continued

09523600. YAQUI CANAL.

LOCATION.--Water-stage recorder and Parshall flume in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.31, T.15 S., R.23 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030107, 700 ft downstream from turnout from All-American Canal and 11.1 mi downstream from Imperial Dam.

PERIOD OF RECORD.--June 1950 to current year (monthly discharge only). Prior to Oct. 1965 included in total diversions from All-American Canal and Yuma Main Canal above siphon-drop powerplant and published as part of sta 09524000.

REMARKS.--Record shows water available for irrigation in parts of Reservation Division of Yuma Project in California.

09523800. PONTIAC CANAL.

LOCATION.--Water-stage recorder and Parshall flume in NW $\frac{1}{4}$ W $\frac{1}{4}$ sec.1, T.16 S., R.22 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030107, 500 ft downstream from turnout from All-American Canal and 13.1 mi downstream from Imperial Dam.

PERIOD OF RECORD.--Aug. 1950 to current year (monthly discharge only). Prior to Oct. 1965 included in total diversions from All-American Canal and Yuma Main Canal above siphon-drop powerplant and published as part of sta 09524000.

REMARKS.--Record shows water available for irrigation in parts of Reservation Division of Yuma Project in California.

09524000. YUMA MAIN CANAL AT SIPHON-DROP POWERPLANT.--See p. 295**09524500. DIVERSIONS FROM YUMA MAIN CANAL BETWEEN SIPHON-DROP POWERPLANT AND YUMA MAIN CANAL WASTEWAY.**

LOCATION.--Turnouts for several canals diverting from Yuma Main Canal between siphon-drop powerplant, 4 mi north of Yuma, and Yuma Main Canal wasteway, 1,600 ft upstream from Colorado River siphon, in Imperial County.

PERIOD OF RECORD.--Oct. 1940 to current year (monthly discharge only). Prior to Oct. 1947 in WSP 1313.Oct. 1947 to Sept. 1965 published as supplemental table with records for Yuma Main Canal at siphon-drop powerplant.

REMARKS.--Record shows water available for irrigation in parts of Reservation Division of Yuma Project in California.

COOPERATION.--Record furnished by Bard Water District.

09525500. YUMA MAIN CANAL BELOW COLORADO RIVER SIPHON.--See p. 297**09526000. DIVERSION FROM YUMA MAIN CANAL FOR MUNICIPAL SUPPLY FOR YUMA.**

LOCATION.--Sparling and Venturi flowmeters, in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.35, T.16 S., R.22 E., San Bernardino meridian, Yuma County, Hydrologic Unit 15030107, on two pipelines, respectively, about 1,000 ft downstream from intake, which is at outlet of Colorado River siphon of Yuma Main Canal, on Arizona side of Colorado River at Yuma.

PERIOD OF RECORD.--June 1945 to current year (monthly discharge only). Prior to Oct. 1973 published as a supplemental table with records for Yuma Main Canal below Colorado River siphon.

REMARKS.--Record shows water for Yuma municipal supply. Figures shown in table herewith are also included in record for Yuma Main Canal below Colorado River siphon (sta 09525500).

COOPERATION.--Records furnished by Yuma County Water Users' Association.

09526200. YPSILANTI CANAL NEAR WINTERHAVEN, CA.

LOCATION.--Water-stage recorder and Cippoletti weir in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.16, T.16 S., R.22 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030107, 700 ft downstream from turnout from All-American Canal and 1.5 mi northwest of Winterhaven, CA.

PERIOD OF RECORD.--Apr. 1995 to current year (monthly discharge only).

REMARKS.--Records shows water available for irrigation in parts of Reservation Division of Yuma Project in California.

09527500. ALL-AMERICAN CANAL BELOW PILOT KNOB WASTEWAY.--See p. 303

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

Diversions at and below Imperial Dam, AZ-CA--Continued

MONTHLY DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Month	North Gila Main Canal 09522600	North Gila Main Canal No. 2 09522650	Wellton-Mohawk Canal 09522700	South Gila Main Canal 09522800	Gila Gravity Main Canal at pumping plant 09522850
October.....	4,280	722	32,070	4,600	22,070
November.....	3,160	496	25,080	3,240	15,939
December.....	1,970	374	18,150	2,740	7,839
CAL YR 2001	38,560	6,420	389,600	39,870	229,117
January.....	2,050	332	21,500	1,990	12,570
February.....	2,620	359	24,470	2,550	11,433
March.....	3,760	549	40,700	3,940	16,141
April.....	4,650	611	41,880	5,270	21,853
May.....	4,810	851	47,030	5,030	26,979
June.....	4,600	691	43,610	2,970	28,057
July.....	3,990	579	44,510	3,030	31,194
August.....	1,790	652	37,470	2,400	30,164
September.....	2,860	481	39,220	3,620	21,450
WTR YR 2002	40,550	6,700	415,700	41,370	245,689

Month	Unit B Main Canal 09522900	Reservation Main Canal 09523200	Titsink Canal 09523400	Yaqui Canal 09523600	Pontiac Canal 09523800
October.....	2,563	6,070	51	1,000	680
November.....	1,852	4,600	33	592	607
December.....	788	2,850	13	335	511
CAL YR 2001	26,338	51,740	469	7,980	5,250
January.....	1,569	3,500	37	488	418
February.....	1,242	3,540	9	407	367
March.....	1,927	5,450	36	810	688
April.....	2,762	7,490	77	1,300	785
May.....	3,357	6,930	50	947	732
June.....	3,150	4,240	67	569	393
July.....	3,634	5,650	15	950	285
August.....	3,406	3,400	27	733	331
September.....	2,488	3,840	51	537	244
WTR YR 2002	28,738	57,560	465	8,670	6,040

Month	Diversions from Yuma Main Canal 09524500	Division from Yuma Main Canal for Yuma supply 09526000	Ypsilanti Canal near Winterhaven, CA 09526200
October.....	1,330	2,245	1,730
September.....	974	1,988	963
December.....	536	1,937	624
CAL YR 2001	9,000	25,584	11,430
January.....	664	1,893	1,080
February.....	603	1,751	1,180
March.....	1,150	2,024	1,320
April.....	1,700	2,116	1,760
May.....	1,380	2,442	1,540
June.....	863	2,671	454
July.....	561	2,794	642
August.....	623	2,816	657
September.....	655	2,430	463
WTR YR 2002	11,050	27,107	12,420

NOTE.--Yearly totals given above have been computed from total cfs-days and may differ slightly from the summation of monthly total acre-feet on occasion.

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09522500 GILA GRAVITY MAIN CANAL AT IMPERIAL DAM, AZ-CA

LOCATION--Lat 32° 52' 34", long 114° 27' 18", in SE¹/₄SW¹/₄ sec. 30, T.6 S., R.21 W., Gila and Salt River meridian, Yuma County, Hydrologic Unit 15030107, on right bank 3,200 ft downstream from intake at east end of Imperial Dam.

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

GAGE--Water-stage recorder. Datum of gage is 160.00 ft above sea level.

REMARKS--No estimated daily discharges. Records good except those below 500 ft³/s, which are fair. Gila Gravity Main Canal diverts water from Colorado River at left end of Imperial Dam for irrigation of lands in the Gila Project area in Arizona. Diversions to this canal began Aug. 17, 1943. Diversions to North Gila Valley from this canal began Dec. 16, 1954.

EXTREMES FOR PERIOD OF RECORD--Maximum daily discharge, 2,240 ft³/s May 25, 1965; no flow at canal intake at times in several years when intake gates were closed.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1550	1120	397	305	939	1040	1450	1710	1080	1560	1660	547
2	1600	662	394	1020	540	708	1680	1690	565	1780	1700	1350
3	1500	628	643	1070	341	700	1790	1550	1750	1820	1090	1470
4	1420	395	514	830	842	1410	1680	1030	1820	1700	613	1310
5	1090	1210	569	476	1010	1400	1230	827	1680	1620	1590	1360
6	700	1300	617	317	1030	1350	696	1690	1720	822	1620	1110
7	592	1230	606	967	745	1090	583	1760	1660	688	1550	794
8	1440	1060	521	903	690	814	1400	1790	931	1680	1380	505
9	1350	778	435	874	435	445	1450	1780	708	1720	1480	1060
10	1480	717	921	886	380	215	1670	1760	1710	1690	999	1190
11	1310	455	846	580	1240	1140	1710	1060	1700	1660	591	1110
12	1100	1070	790	542	1280	1230	1180	647	1480	1350	1640	1140
13	822	1160	857	336	1200	1240	749	1730	1590	982	1730	1070
14	372	1260	717	973	1210	1480	580	1810	1560	656	1490	704
15	1440	1080	473	975	874	1030	1540	1850	1330	1720	1370	583
16	1400	843	368	915	456	677	1720	1890	734	1810	1610	1400
17	1520	540	963	787	305	401	1750	1630	1480	1800	1240	1630
18	1370	615	1090	565	1040	1370	1870	943	1770	1790	987	1570
19	1110	1260	1020	475	1190	1340	1780	578	1840	1720	1760	1430
20	553	1300	956	308	1430	1440	1110	1560	1790	1110	1900	1400
21	326	976	708	916	1280	1390	679	1870	1720	623	1750	920
22	1400	502	420	932	750	995	1560	1730	1150	1620	1340	726
23	1110	648	353	898	524	887	1490	1690	881	1720	1120	1580
24	1260	661	312	938	393	592	1580	1530	1820	1630	743	1700
25	1310	591	164	742	1070	1430	1600	837	2030	1850	484	1870
26	1030	1160	851	514	959	1470	1670	600	1960	1900	1600	1730
27	540	1160	930	404	1020	1680	1030	1610	1760	1200	1480	1200
28	427	1190	714	964	1290	1480	685	1760	1690	847	1540	960
29	1210	1410	538	860	---	1250	1590	1700	1090	1870	1530	545
30	1250	831	319	789	---	556	1820	1620	793	1750	1160	1470
31	1290	---	335	1100	---	404	---	1620	---	1670	537	---
TOTAL	34872	27812	19341	23161	24463	32654	41322	45852	43792	46358	41284	35434
MEAN	1125	927.1	623.9	747.1	873.7	1053	1377	1479	1460	1495	1332	1181
MAX	1600	1410	1090	1100	1430	1680	1870	1890	2030	1900	1900	1870
MIN	326	395	164	305	305	215	580	578	565	623	484	505
AC-FT	69170	55170	38360	45940	48520	64770	81960	90950	86860	91950	81890	70280
CAL YR 2001	TOTAL	389247.0	MEAN	1066	MAX	2090	MIN	0.00	AC-FT	772100		
WTR YR 2002	TOTAL	416345	MEAN	1141	MAX	2030	MIN	164	AC-FT	825800		

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09523000 ALL-AMERICAN CANAL NEAR IMPERIAL DAM, AZ-CA

LOCATION--Lat 32° 52' 17", long 114° 28' 47", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 17, T.15 S., R.24 E., San Bernardino meridian, in Imperial County, CA, Hydrologic Unit 15030107, on left bank 6,000 ft downstream from intake at west end of Imperial Dam and 13.7 mi upstream from turnout to Yuma Main Canal.

PERIOD OF RECORD--Oct. 1938 to current year. Prior to Oct. 1939 monthly discharge only, published in WSP 1313.

GAGE--Water-stage recorder. Datum of gage is 150.00 ft above sea level (subject to undetermined changes caused by earthquake of May 18, 1940). Since Aug. 21, 1952, auxiliary water-stage recorder 18.5 mi downstream from base gage.

REMARKS--No estimated daily discharges. Records excellent. All-American Canal diverts water from Colorado River at Imperial Dam. Water is used for power development and for irrigation in Yuma, Coachella, and Imperial Valleys. Water can be released back to the river through Pilot Knob powerplant and wasteway for power, regulatory purposes, or for downstream use in Mexico. First diversion to All-American Canal began Oct. 1938, but prior to Oct. 1940 was used only for priming canal.

COOPERATION--Daily discharge figures furnished by Imperial Irrigation District.

EXTREMES FOR PERIOD OF RECORD--Maximum daily discharge, 14,400 ft³/s, Apr. 17, July 15, 16, 1980; no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5900	5470	4910	3120	5490	7990	9190	8480	7960	8130	8620	6520
2	5740	5350	4440	4130	4960	7590	9490	8560	7600	8190	8100	6710
3	5880	5240	4770	4460	4440	6550	9460	8250	7870	8410	7650	6960
4	6180	4890	4820	4660	5220	5870	9610	7760	7580	8450	7430	6900
5	6430	5320	5010	4680	5540	6010	9350	7280	8200	8330	7510	7160
6	6260	5440	5300	4470	5640	6350	9120	8010	8400	8420	7390	6770
7	5660	5440	5390	4250	5920	6420	8600	8470	8310	8490	7390	6150
8	5880	5640	5140	4480	5430	6200	9270	8260	8020	9110	7650	5600
9	6050	5680	4600	5010	5560	5770	9590	8370	7920	8730	7900	6000
10	6100	5360	4820	5890	5330	5360	9450	8370	8050	9000	7560	6290
11	6610	5050	4920	4930	6070	6480	9240	7870	8220	9220	7130	5770
12	6430	5270	4790	4760	6600	7000	9280	7070	8470	9330	7370	5840
13	5900	5230	5160	4330	6650	8180	8660	7630	8200	8960	7700	5360
14	5680	5320	5100	4820	6650	8190	8490	7880	7990	8480	7830	5050
15	6090	5270	4530	4890	6490	8080	8890	7860	7070	8540	7800	4980
16	6160	5200	4200	4960	6220	7530	9180	8200	7510	8340	7670	5320
17	6320	5230	4510	5200	5830	7090	9690	8210	7630	8430	7430	5950
18	6370	4880	4640	5250	6170	7310	10000	7770	7770	8540	7140	5720
19	6340	5010	4830	4860	6660	8060	9810	7190	7810	8410	7180	6030
20	5840	5170	4830	4250	7070	8120	9550	7550	7800	7970	7070	6740
21	5500	4770	4920	4870	7290	8270	9350	7550	7850	7920	7030	7180
22	5810	4020	4610	5000	7310	8560	9390	7480	7510	8050	7070	6930
23	5910	4630	4000	5260	7460	7980	9840	7500	7320	8470	6890	7290
24	5700	4680	3520	5240	6990	7990	9620	7360	7910	8390	6750	7410
25	5450	4360	3290	5230	7560	8100	9960	6650	8190	8570	6300	7970
26	5380	4450	3710	4650	7580	8490	9730	6400	8180	8660	6560	7530
27	5270	4500	4140	4220	7430	8850	9210	6950	7940	8200	6910	7150
28	4890	4730	4230	5080	7620	9270	8680	7490	8160	8010	6960	6610
29	5120	5110	4170	5210	---	9020	8990	7740	7680	8410	7310	6380
30	5310	5330	3690	5280	---	8880	9160	8010	7350	8420	7200	6710
31	5260	---	3110	5510	---	9010	---	8070	---	8480	7020	---
TOTAL	181420	152040	140100	148950	177180	234570	279850	240240	236470	263060	227520	192980
MEAN	5852	5068	4519	4805	6328	7567	9328	7750	7882	8486	7339	6433
MAX	6610	5680	5390	5890	7620	9270	10000	8560	8470	9330	8620	7970
MIN	4890	4020	3110	3120	4440	5360	8490	6400	7070	7920	6300	4980
AC-FT	359800	301600	277900	295400	351400	465300	555100	476500	469000	521800	451300	382800
CAL YR 2001	TOTAL 2464540	MEAN 6752	MAX 10200	MIN 3110	AC-FT 4888000							
WTR YR 2002	TOTAL 2474380	MEAN 6779	MAX 10000	MIN 3110	AC-FT 4908000							

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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09524000 YUMA MAIN CANAL AT SIPHON-DROP POWERPLANT, NEAR YUMA, AZ

LOCATION.--Lat 32° 46' 36", long 114° 38' 05", in SE1/4SE1/4 sec. 10, T.16 S., R.22 E., San Bernardino meridian, in Imperial County, CA, Hydrologic Unit 15030107, 500 ft from turnout from All-American Canal to Yuma Main Canal, 4.0 mi north of Yuma, and 14.9 mi downstream from intake of All-American Canal at Imperial Dam.

PERIOD OF RECORD.--July 1926 to current year. Prior to Oct. 1938, monthly discharge only published in WSP 1313. Diversions from All-American Canal and Yuma Main Canal previously published with this record are listed separately in this report.

GAGE.--Accusonic flowmeters.

REMARKS.--Records are good above 100 ft³/s and poor below. New powerplant began operation Sept. 14, 1987, replacing former powerplant located 500 ft downstream that ended operation Dec. 8, 1972. A weir, installed in forebay of former powerplant, is used to measure flow bypassing the new powerplant. Separate gates on the All-American Canal to powerplant and bypass weir are controlled automatically on signal from the powerplant accusonic flowmeters on the two generators. Records of daily discharge show quantity of water diverted from All-American Canal to Yuma Main Canal (powerplant and bypass), except that diverted from forebay of former powerplant to Walapai Canal (see sta. 09523900).

COOPERATION.--Daily discharge record furnished by Yuma County Water Users' Association.

EXTREMES.--1930 to current year: Maximum daily discharge, 2,040 ft³/s Nov. 11, 1943; no flow for several days in 1937--39, 1945.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	812	1010	743	382	621	821	714	971	522	547	546	852
2	801	1080	495	410	552	843	780	1000	400	615	539	863
3	870	1090	382	500	449	763	810	1120	452	632	525	917
4	954	1010	384	523	541	528	852	1490	556	662	459	976
5	1040	1080	384	523	624	470	854	1340	603	713	350	1080
6	989	1150	650	523	598	524	722	1150	585	623	146	869
7	954	1170	755	474	658	533	567	1420	549	539	175	814
8	858	1140	695	435	633	798	715	1230	563	586	202	802
9	918	1170	464	462	639	972	864	1340	474	608	640	824
10	959	1210	450	517	524	896	945	1140	469	734	729	598
11	1140	1380	468	512	646	810	976	976	518	743	693	504
12	975	1180	540	499	710	858	980	708	557	692	1080	596
13	964	1210	739	425	665	923	972	707	598	668	1160	968
14	973	1120	617	479	557	966	835	799	538	596	1130	900
15	924	1100	503	533	471	977	808	849	450	578	1150	723
16	895	1000	450	601	589	903	888	879	431	565	996	1010
17	987	1100	497	523	542	661	994	913	435	627	1090	913
18	983	1150	551	511	587	828	1020	977	614	666	1010	1170
19	964	1100	621	477	638	495	1030	895	660	581	1060	1250
20	926	1250	601	416	737	582	978	629	673	602	1060	1280
21	821	1150	563	438	749	573	930	886	667	455	1080	1390
22	849	1070	449	485	701	709	968	921	631	478	1120	1350
23	948	1170	393	587	665	869	1000	948	592	597	1080	1420
24	916	1150	384	572	562	848	1010	928	575	675	928	861
25	827	833	490	536	702	841	1010	806	630	671	747	783
26	825	830	508	528	739	840	976	698	696	596	685	783
27	937	667	574	414	672	950	869	591	693	440	840	793
28	763	1020	602	488	730	883	780	880	712	377	808	753
29	730	1100	537	534	---	870	819	1140	569	412	827	780
30	827	737	437	570	---	796	939	924	465	448	721	1150
31	784	---	387	619	---	674	---	581	---	549	896	---
TOTAL	28113	32427	16313	15496	17501	24004	26605	29836	16877	18275	24472	27972
MEAN	906.9	1081	526.2	499.9	625.0	774.3	886.8	962.5	562.6	589.5	789.4	932.4
MAX	1140	1380	755	619	749	977	1030	1490	712	743	1160	1420
MIN	730	667	382	382	449	470	567	581	400	377	146	504
AC-FT	55760	64320	32360	30740	34710	47610	52770	59180	33480	36250	48540	55480
CAL YR 2001	TOTAL 271400	MEAN 743.6	MAX 1730	MIN 139	AC-FT 538300							
WTR YR 2002	TOTAL 277891	MEAN 761.3	MAX 1490	MIN 146	AC-FT 551200							

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09525000 YUMA MAIN CANAL WASTEWAY AT YUMA, AZ

LOCATION.--Lat 32° 44'00", long 114° 37'20", in SW_{1/4}SE_{1/4} sec. 26, T.16 S., R.22 E., San Bernardino meridian, in Imperial County, CA, Hydrologic Unit 15030107, 45 ft downstream from wasteway gates from Yuma Main Canal which are 1,645 ft upstream from intake of Colorado River siphon on Yuma Main Canal, 0.5 mi north of Yuma, and 3.2 mi downstream from siphon-drop powerplant on Yuma Main Canal.

PERIOD OF RECORD.--Apr. 1913 to current year. Monthly discharge only for some periods, published in WSP 1313.

GAGE.--Water-stage recorder for low flows only prior to Jan. 29, 1988. Datum of gage is 122.51 ft above sea level. Prior to Apr. 1, 1968, gate-opening record used for low flows only.

REMARKS.--Records fair above 100 ft³/s and poor below. The wasteway discharges into Colorado River 1,000 ft upstream from station on Colorado River below Yuma Main Canal wasteway at Yuma. Discharges are computed as difference between discharge of Yuma Main Canal at siphon-drop powerplant and Yuma Main Canal below Colorado River siphon, with deductions for small irrigation diversions from canal between these stations. Records do not include flow of Reservation Main Drain No. 4.

EXTREMES.--1930 to current year: Maximum daily discharge, 2,020 ft³/s Dec. 24, 25, 1948; no flow for several days in 1937-39, 1945, 1950, 1971, 1997 and 1999.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	279	89	138	101	166	60	90	61	83	2.0	555
2	30	268	94	68	101	189	42	87	56	83	16	544
3	31	291	66	56	170	171	101	204	71	59	5.0	556
4	42	354	87	56	161	109	124	583	67	72	13	563
5	97	438	105	95	85	119	111	540	86	102	121	571
6	33	427	132	214	115	135	83	317	71	124	10	358
7	81	432	106	152	115	130	80	519	50	132	10	370
8	41	427	175	106	102	144	61	312	47	111	10	447
9	40	426	132	94	123	159	102	449	49	85	47	449
10	41	437	122	87	141	167	122	291	29	133	22	186
11	189	663	129	86	123	133	149	176	64	130	150	27
12	46	481	199	73	112	108	136	49	56	93	606	135
13	44	487	174	59	135	140	148	12	50	90	649	506
14	34	477	56	87	84	159	113	29	49	85	622	475
15	25	513	87	100	63	154	83	37	50	64	644	265
16	31	476	90	97	86	160	97	47	75	27	543	514
17	31	485	97	69	85	172	152	102	58	59	673	417
18	9.0	568	59	73	148	432	150	195	70	88	652	615
19	32	526	98	95	95	99	151	318	58	72	696	679
20	35	647	63	111	146	120	145	109	54	132	627	629
21	18	651	93	118	153	129	122	200	81	84	639	726
22	36	721	45	109	124	178	122	189	71	57	641	739
23	76	703	88	116	121	114	121	237	92	52	625	809
24	49	578	151	83	144	103	130	212	108	70	519	195
25	42	360	282	53	327	90	130	79	79	77	391	58
26	21	361	188	99	246	63	132	158	89	51	341	57
27	129	122	96	98	131	148	92	125	79	37	435	10
28	74	510	54	104	125	82	70	334	65	67	381	10
29	41	559	26	112	---	71	79	546	65	66	404	78
30	76	110	29	89	---	16	86	304	76	37	349	437
31	79	---	68	85	---	46	---	37	---	47	558	---
TOTAL	1629.0	13777	3280	2982	3662	4206	3294	6887	1976	2469	11401.0	11980
MEAN	52.55	459.2	105.8	96.19	130.8	135.7	109.8	222.2	65.87	79.65	367.8	399.3
MAX	189	721	282	214	327	432	152	583	108	133	696	809
MIN	9.0	110	26	53	63	16	42	12	29	27	2.0	10
AC-FT	3230	27330	6510	5910	7260	8340	6530	13660	3920	4900	22610	23760

CAL YR 2001 TOTAL 68650.0 MEAN 188.1 MAX 890 MIN 9.0 AC-FT 136200
WTR YR 2002 TOTAL 67543.0 MEAN 185.0 MAX 809 MIN 2.0 AC-FT 134000

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09525500 YUMA MAIN CANAL BELOW COLORADO RIVER SIPHON, AT YUMA, AZ

LOCATION.--Two gages, one at each end of canal siphon passing under Colorado River. At intake, lat 32° 43'49", long 114° 37'09", in NE1/4NE1/4 sec. 35, T.16 S., R.22 E., San Bernardino meridian, in Imperial County, CA, Hydrologic Unit 15030107, on left bank 1,645 ft downstream from center of Yuma Main Canal wasteway gates and 3.5 mi downstream from siphon-drop powerplant. At outlet, in NW1/4NE1/4 sec. 35, T.16 S., R.22 E., San Bernardino meridian, in Yuma County, AZ, on right bank. Siphon crossing is 1,300 ft upstream from 4th Avenue bridge over Colorado River at Yuma.

PERIOD OF RECORD.--Jan. 1924 to current year. Prior to Oct. 1938, monthly discharge only published in WSP 1313. Diversion from Yuma Main Canal for municipal supply for Yuma (sta 09526000), published with this record prior to Oct. 1973, is listed separately in this report.

REVISED RECORDS.--WSP 1713: 1958, 1959 (Yuma municipal supply).

GAGE.--Water-stage recorder at each end of siphon. Datum of each gage is 100.62 ft above sea level. Prior to Oct. 1, 1963, at datum 0.05 ft lower. Elevation of sill of inlet is 125.5 ft above sea level. Prior to Oct. 29, 1938, nonrecording gages at approximately same sites, read simultaneously.

REMARKS.--Records good except those below 100 ft³/s, which are poor. Daily discharge computed from relation between discharge and head on siphon, which is the difference between intake and outlet gages. Records show quantity of water delivered through Colorado River siphon for irrigation in the Valley Division of the Yuma Project and for municipal supply for city of Yuma (see sta 09526000).

EXTREMES.--1930 to current year: Maximum daily discharge, 984 ft³/s Oct. 9, 1992; no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	726	714	650	244	507	638	609	858	461	431	544	297
2	755	796	398	330	425	645	679	870	344	508	515	318
3	803	771	291	432	279	592	693	867	358	530	509	361
4	892	643	292	461	362	407	714	854	464	570	431	413
5	927	626	267	415	520	334	720	782	498	597	227	506
6	919	678	518	301	477	371	588	810	501	499	424	511
7	861	735	649	305	528	372	469	851	488	407	311	444
8	806	693	520	315	523	624	620	872	514	466	468	355
9	865	718	332	356	508	782	728	872	425	509	570	357
10	902	747	322	417	379	713	793	849	425	586	687	381
11	932	698	325	415	513	642	824	792	442	611	523	444
12	918	694	314	413	576	711	833	659	473	599	455	455
13	904	689	539	362	530	775	808	673	516	578	496	436
14	922	634	554	389	473	791	718	755	481	511	492	393
15	885	580	408	430	407	797	700	765	400	514	486	426
16	841	500	360	498	503	735	749	773	356	525	436	487
17	916	580	391	441	457	489	806	789	368	560	402	494
18	935	574	492	427	428	372	816	761	508	572	358	543
19	892	563	523	374	525	382	820	567	578	509	364	562
20	848	584	523	301	567	449	822	517	585	455	433	620
21	767	499	467	320	578	431	808	664	581	371	430	650
22	784	349	394	362	563	519	809	709	552	421	467	608
23	861	467	305	439	526	735	822	696	485	534	440	610
24	852	572	231	467	418	706	836	701	456	604	391	656
25	783	473	203	460	363	714	838	702	551	594	341	711
26	797	458	313	411	477	746	832	523	607	530	329	723
27	793	519	444	309	536	779	758	447	589	383	390	787
28	670	470	527	378	587	773	692	534	595	300	415	779
29	661	521	485	419	---	795	723	594	487	338	423	692
30	722	614	407	472	---	770	826	602	378	409	372	695
31	672	---	319	516	---	628	---	544	---	502	338	---
TOTAL	25811	18159	12763	12179	13535	19217	22453	22252	14466	15523	13467	15714
MEAN	832.6	605.3	411.7	392.9	483.4	619.9	748.4	717.8	482.2	500.7	434.4	523.8
MAX	935	796	650	516	587	797	838	872	607	611	687	787
MIN	661	349	203	244	279	334	469	447	344	300	227	297
AC-FT	51200	36020	25320	24160	26850	38120	44540	44140	28690	30790	26710	31170

CAL YR 2001	TOTAL 198289	MEAN 543.3	MAX 935	MIN 84	AC-FT 393300
WTR YR 2002	TOTAL 205539	MEAN 563.1	MAX 935	MIN 203	AC-FT 407700

Return surface flows below Imperial Dam, AZ-CA

095250000. YUMA MAIN CANAL WASTEWAY.--See p. 296**095270000. PILOT KNOB POWERPLANT AND WASTEWAY.--See p. 302****09528800. LEVEE CANAL WASTEWAY.**

LOCATION.--Water-stage recorder at sharp-crested weir, in SE_{1/4}SW_{1/4} sec.4, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15030107, 1,000 ft upstream from outlet to Colorado River.

PERIOD OF RECORD.--Oct. 1960 to current year (monthly discharge only).

REMARKS.--Record shows waste water from North Gila Valley Irrigation District.

09529000. NORTH GILA DRAIN NO. 1.

LOCATION.--Water-stage recorder, in SE_{1/4}SW_{1/4} sec.4, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15030107, 0.25 mi upstream from outlet to Colorado River and 5.5 mi downstream from Laguna Dam.

PERIOD OF RECORD.--Oct. 1960 to current year (monthly discharge only).

REMARKS.--Record shows waste water from North Gila Valley Irrigation District.

09529150. NORTH GILA MAIN CANAL WASTEWAY.

LOCATION.--Water-stage recorder, in NE_{1/4}NW_{1/4} sec.22, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15070201, 1,000 ft upstream from outlet to Gila River.

PERIOD OF RECORD.--Oct. 1960 to current year (monthly discharge only).

REMARKS.--Record shows waste water from North Gila Valley Irrigation District.

09529160. SOUTH GILA PUMP OUTLET CHANNEL NO. 3.

LOCATION.--In NW_{1/4}SE_{1/4} sec.22, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15070201, 0.5 mi upstream from outlet to Gila River.

PERIOD OF RECORD.--Jan. 1965 to current year (monthly discharge only).

REMARKS.--Record shows water pumped from wells in South Gila Valley.

COOPERATION.--Records furnished by Bureau of Reclamation.

09529240. SOUTH GILA PUMP OUTLET CHANNEL NO. 2.

LOCATION.--In SW_{1/4}NW_{1/4} sec.28, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15070201, 0.6 mi upstream from outlet to Gila River.

PERIOD OF RECORD.--Jan. 1962 to current year (monthly discharge only).

REMARKS.--Record shows water pumped from wells in South Gila Valley.

COOPERATION.--Record furnished by Bureau of Reclamation.

09529250. BRUCE CHURCH WASTEWAY.

LOCATION.--Water-stage recorder and sharp-crested weir, in SE_{1/4}SE_{1/4} sec.20, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15070201, 500 ft upstream from outlet to Gila River.

PERIOD OF RECORD.--Oct. 1960 to current year (monthly discharge only).

REMARKS.--Record shows waste water from North Gila Valley Irrigation District.

09529300. WELLTON-MOHAWK MAIN OUTLET DRAIN (CONVEYANCE CHANNEL).

LOCATION.--Water-stage recorder and Parshall flume in NE_{1/4}NW_{1/4} sec.17, T.8 S., R.21 W., Yuma County, Hydrologic Unit 15070201, 7.8 mi upstream from outlet to Gila River (M.O.D.E. 1), which is 0.6 mi upstream from mouth of Gila River.

PERIOD OF RECORD.--Oct. 1960 to current year (monthly discharge only).

REMARKS.--Record shows water pumped from numerous wells in Wellton-Mohawk Irrigation and Drainage District to lower the water table. Flow can be discharged to the Gila River or Colorado River by any one of or combination of four outlets. These outlets are: M.O.D.E. 1 (release to Gila River about 7.8 mi below station); an overflow flume about 11.3 mi below station releases water to Colorado River; M.O.D.E. 2 (see sta 09531800) releases water to Colorado River above Morelos Dam; and M.O.D.E. 3 releases water to Colorado River below Morelos Dam.

09529360. SOUTH GILA PUMP OUTLET CHANNEL NO. 1.

LOCATION.--In SW_{1/4}NE_{1/4} sec.30, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15070201, 0.2 mi upstream from outlet to Gila River, which is 0.6 mi upstream from mouth of Gila River.

PERIOD OF RECORD.--Aug. 1961 to current year (monthly discharge only).

REMARKS.--Record shows water pumped from wells in South Gila Valley.

COOPERATION.--Record furnished by Bureau of Reclamation.

09529420. SOUTH GILA TERMINAL WASTEWAY.

LOCATION.--Water-stage recorder and Parshall flume, in SW_{1/4}NW_{1/4} sec.36, T.8 S., R.23 W., Yuma County, Hydrologic Unit 15030107, 2.0 mi upstream from outlet to Colorado River.

PERIOD OF RECORD.--Mar. 1965 to current year (monthly discharge only).

REMARKS.--Record shows waste water from South Gila Canal of South Gila Valley.

09529440. SOUTH GILA PUMP OUTLET CHANNEL NO. 4.

LOCATION.--In NW_{1/4}NW_{1/4} sec.26, T.8 S., R.23 W., Yuma County, Hydrologic Unit 15030107, 1.5 mi upstream from outlet to Colorado River.

PERIOD OF RECORD.--July 1965 to current year (monthly discharge only).

REMARKS.--Records show water pumped from wells in South Gila Valley.

COOPERATION.--Records furnished by Bureau of Reclamation.

Return surface flows below Imperial Dam, AZ-CA--Continued

09529600. RESERVATION DRAIN NO. 7.

LOCATION.--At downstream end of culvert on State Road 24, in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.33, T.15 S., R.23 E., San Bernardino Meridian, Imperial County, Hydrologic Unit 15030107, 0.5 mi upstream from outlet to Reservation Main Drain.

PERIOD OF RECORD.--Mar. 1966 to current year (monthly discharge only).

REMARKS.--Record shows drainage water from sec.34, T.15 S., R.23 E., in Reservation Division.

09529700. RESERVATION MAIN DRAIN NO. 6.

LOCATION.--Nonrecording gage on upstream right piling of Stallnacker Road Bridge, SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.32, T.15 S., R.23 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030107.

PERIOD OF RECORD.--Mar. 1966 to current year (monthly discharge only).

REMARKS.--Record shows waste and drainage water from the Reservation Division.

09529800. RESERVATION DRAIN NO. 2.

LOCATION.--At upstream side of bridge on White Road, in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.6, T.16 S., R.23 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030107, 0.9 mi upstream from outlet to Reservation Main Drain.

PERIOD OF RECORD.--Mar. 1966 to current year (monthly discharge only).

REMARKS.--Record shows drainage water from sec.31, T.15 S., R.22 E., in Reservation Division.

09529900. RESERVATION DRAIN NO. 3.

LOCATION.--At Jackson Road Bridge, in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.10, T.16 S., R.22 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030107, 1.0 mi upstream from outlet to Reservation Main Drain.

PERIOD OF RECORD.--Mar. 1966 to current year (monthly discharge only).

REMARKS.--Record shows drainage water from Reservation Division upstream from Yuma Main Canal.

09530000. RESERVATION MAIN DRAIN NO. 4.

LOCATION.--Water-stage recorder in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.26, T.16 S., R.22 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030107, 500 ft upstream from railroad culvert.

PERIOD OF RECORD.--Jan. 1913 to Apr. 1920, Oct. 1921 to Mar. 1925, Jan. 1934 to current year (monthly discharge only) (calendar year discharge only 1934-36). Prior to Oct. 1955, published as California drainage canal.

REMARKS.--Record shows waste and drainage water from area east of Yuma Main Canal on Reservation Division.

09530200. YUMA MESA OUTLET DRAIN.

LOCATION.--In SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.28, T.16 S., R.22 E., San Bernardino meridian, Yuma County, in Arizona, Hydrologic Unit 15030108, 0.3 mi from outlet to Colorado River.

PERIOD OF RECORD.--July 1970 to current year (monthly discharge only).

REMARKS.--Record shows water pumped from wells on the Yuma Mesa and conveyed by underground conduit to Colorado River.

COOPERATION.--Records furnished by Bureau of Reclamation.

09530400. RESERVATION DRAIN NO. 11.

LOCATION.--At outlet to Drain 8-B, in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.19, T.16 S., R.22 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030107.

PERIOD OF RECORD.--Mar. 1966 to current year (monthly discharge only).

REMARKS.--Record shows drainage from sec.20, T.16 S., R.22 E. in Reservation Division.

09530500. DRAIN 8-B.

LOCATION.--Enters Colorado River in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.19, T.16 S., R.22 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030107, 4 mi downstream from outlet of Yuma Main Canal wasteway.

PERIOD OF RECORD.--Mar. 1948 to current year (monthly discharge only). Prior to Oct. 1955, published as Araz Drain.

REMARKS.--Record shows waste and drainage water west of Yuma Main Canal on the Reservation Division.

09531800. MAIN OUTLET DRAIN EXTENSION ABOVE MORELOS DAM (M.O.D.E. 2).

LOCATION.--Nonrecording gage and Parshall flume, in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.36, T.16 S., R.21 E., San Bernardino meridian, Yuma County in Arizona, Hydrologic Unit 15030107, at outlet to Colorado River, 1.7 mi upstream from Morelos Dam.

PERIOD OF RECORD.--Nov. 1965 to current year (monthly discharge only).

REMARKS.--Record shows water conveyed to Colorado River, 1.7 mi above Morelos Dam, from Wellton-Mohawk Main Outlet Drain (see sta 09529300).

COOPERATION.--Records furnished by Bureau of Reclamation.

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM
RETURN SURFACE FLOWS BELOW IMPERIAL DAM, AZ-CA--CONTINUED
MONTHLY RETURN FLOWS, IN ACRE-FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Month	Levee Canal wasteway 09528800	North Gila Drain No. 1 09529000	North Gila Main Canal wasteway 09529150	South Gila Pump Outlet Channel No. 3 09529160	South Gila Pump Outlet Channel No. 2 09529240
October	79	499	187	1,290	2,000
November	91	498	211	1,180	1,960
December	81	370	236	1,290	2,030
CAL YR 2001	946	4,440	1,610	10,100	21,570
January	37	234	229	1,230	2,200
February	65	190	211	1,110	2,170
March	125	271	114	361	1,550
April	76	406	88	1,110	2,230
May.....	63	557	171	621	2,320
June.....	59	620	207	621	2,090
July	128	513	265	621	1,780
August	43	524	122	1,170	1,440
September	65	470	103	1,170	1,390
WTR YR 2002	912	5,150	2,140	11,780	23,150

Month	Bruce Church wasteway 09529250	Wellton-Mohawk Main Outlet Drain 09529300	South Gila Pump Outlet Channel No. 1 09529360	South Gila Terminal wasteway 09529420	South Gila Pump Outlet Channel No. 4 09529440
October	102	10,460	2,340	217	316
November	176	11,160	2,370	279	139
December	114	10,460	2,580	267	0.00
CAL YR 2001	1,240	107,900	26,990	2,200	2,180
January	140	9,930	2,350	125	3
February	131	9,720	2,560	128	0.00
March	82	5,090	1,700	171	27
April	48	9,620	2,800	143	309
May.....	65	10,440	2,680	138	314
June.....	118	10,450	2,650	144	303
July	82	11,500	2,480	183	303
August	114	11,070	1,850	190	303
September	169	10,340	1,800	214	10
WTR YR 2002	1,340	120,300	28,150	2,200	2,030

Month	Reservation Drain No. 7 09529600	Reservation Main Drain No. 6 09529700	Reservation Drain No. 2 09529800	Reservation Drain No. 3 09529900	Reservation Main Drain No. 4 09530000
October	120	1,070	59	390	3,570
September.....	185	1,210	78	411	5,160
December	152	1,180	66	393	4,320
CAL YR 2001	1,740	14,150	614	4,020	47,030
January	116	940	53	316	3,670
February	61	758	61	254	3,540
March	120	1,070	53	331	4,160
April	167	1,170	60	422	3,760
May.....	184	1,460	74	435	4,420
June.....	179	1,220	58	402	3,810
July	178	1,170	65	376	3,910
August	160	1,220	52	367	4,130
September	155	1,120	70	362	3,930
WTR YR 2002	1,780	13,580	748	4,460	48,380

NOTE.--Yearly totals given above have been computed from total cfs-days and may differ slightly from the summation of monthly total acre-feet on occasion.

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

Return surface flows below Imperial Dam AZ-CA---Continued

MONTHLY RETURN FLOWS, IN ACRE-FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Month	Yuma Mesa Outlet Drain 09530200	Reservation Drain No. 11 09530400	Drain 8-B 09530500	M.O.D.E. 2 (above) Morelos Dam 09531800
October	5,760	281	1,010	0
November.....	5,750	212	861	0
December	6,150	130	696	0
CAL YR 2001	58,480	2,540	7,800	0
January	5,380	196	718	0
February	4,940	91	526	0
March.....	3,900	154	585	0
April.....	5,230	139	661	0
May	5,510	124	740	0
June	5,170	133	714	0
July.....	4,860	148	706	0
August.....	4,300	197	742	0
September	4,560	125	738	0
WTR YR 2002	61,510	1,930	8,700	0

NOTE.--Yearly totals given above have been computed from total cfs-days and may differ slightly from the summation of monthly total acre-feet on occasion.

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09527000 PILOT KNOB POWERPLANT AND WASTEWAY NEAR PILOT KNOB, CA

LOCATION --Lat 32° 44'15", long 114° 42'56", in NW1/4SW1/4 sec. 25, T.16 S., R.21 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030107, 2 mi east of summit of Pilot Knob, 6 mi west of Yuma, AZ, and 20.8 mi downstream from intake of All-American Canal at Imperial Dam.

PERIOD OF RECORD --Feb. 1939 to current year. Prior to Oct. 1943 monthly discharge only, published in WSP 1313. Prior to Oct. 1956, published as Pilot Knob wasteway near Pilot Knob.

GAGE --Water-stage recorder in forebay on right bank of All-American Canal (also used as auxiliary gage for sta 09527500); tailrace gage with remote recorder logged hourly in control house; calibrated wicket gates for turbine flow and calibrated bypass gates for wasteway flow which are logged for each change. Datum of forebay staff gage is 150.00 ft; that of tailrace staff gage is 0.00 ft; elevation of sill of bypass gates is 147.88 ft above sea level.

REMARKS --No estimated daily discharges. Records good. Daily discharge computed from head and gate openings on wicket gates. Records show water released through Pilot Knob powerplant and wasteway from All-American Canal and returned to Colorado River through Rockwood gates. Pilot Knob wasteway was completed in summer of 1938 and first flow occurred Feb. 5, 1939. Pilot Knob powerplant was completed in Jan. 1957 and first flow occurred Jan. 14, 1957. See table below for monthly return flow by Pilot Knob wasteway only.

COOPERATION --Daily discharges furnished by Imperial Irrigation District.

EXTREMES FOR PERIOD OF RECORD --Maximum daily discharge, 9,930 ft³/s Dec. 6, 1985; no flow for long periods.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	783	930	1510	1870	2790	930	895	870	1070	0.00
2	0.00	0.00	783	967	1600	1820	2516	1110	999	928	1010	0.00
3	0.00	0.00	910	1020	1630	1420	2069	980	1010	859	995	0.00
4	0.00	0.00	1030	1180	1760	826	2020	0.00	899	1040	1010	0.00
5	0.00	0.00	966	1490	1910	812	1980	0.00	902	1110	876	0.00
6	0.00	0.00	1080	1950	1870	831	2120	0.00	788	1330	732	0.00
7	0.00	0.00	1090	1310	1760	947	2710	0.00	812	1460	838	0.00
8	0.00	0.00	1110	1350	1630	813	2852	0.00	859	1410	711	0.00
9	0.00	0.00	1080	1920	1720	812	2830	0.00	859	815	720	0.00
10	0.00	0.00	1110	2760	1720	825	2380	0.00	883	1000	726	337
11	0.00	0.00	1120	1720	1930	1100	1932	0.00	860	1080	733	626
12	0.00	0.00	1150	1250	1930	1280	1920	0.00	860	1430	0.00	1140
13	0.00	0.00	1150	1280	1820	2170	1890	0.00	903	1360	0.00	414
14	0.00	0.00	1150	1390	1770	2270	2060	0.00	1200	1070	0.00	0.00
15	0.00	0.00	1140	1270	1770	2020	1730	0.00	1130	990	0.00	0.00
16	0.00	0.00	1100	1270	1770	1810	1890	0.00	1930	699	0.00	0.00
17	0.00	0.00	1100	1270	1770	1920	2040	0.00	1400	767	0.00	0.00
18	0.00	0.00	1070	1270	1690	1270	2220	0.00	788	891	0.00	0.00
19	0.00	0.00	1060	1200	1740	1960	2280	0.00	775	911	0.00	0.00
20	0.00	0.00	1080	1200	1770	2000	2100	0.00	715	975	0.00	0.00
21	0.00	0.00	1080	1280	1830	1850	2310	0.00	881	984	0.00	0.00
22	0.00	0.00	1080	1360	1880	1890	1880	0.00	916	1010	0.00	0.00
23	0.00	0.00	1140	1360	1880	1970	1880	0.00	962	1010	0.00	0.00
24	0.00	0.00	1760	1370	1880	2300	1810	0.00	897	978	0.00	364
25	0.00	0.00	1440	1320	1880	1850	1850	0.00	987	946	0.00	1470
26	0.00	0.00	938	1370	1840	1810	1800	0.00	998	1000	0.00	986
27	0.00	0.00	1060	1430	1640	1950	1910	0.00	975	980	0.00	775
28	0.00	0.00	783	1560	1790	2100	1790	0.00	958	930	0.00	785
29	0.00	0.00	783	1630	---	2260	1700	42	926	833	0.00	704
30	0.00	938	783	1440	---	2330	1560	325	977	883	0.00	411
31	0.00	---	833	1570	---	3560	---	780	---	909	0.00	---
TOTAL	0.00	938.0	32742	43687	49690	52646	62819	4167.0	28944	31458	9421.0	8012.0
MEAN	0.000	31.27	1056	1409	1775	1698	2094	134.4	964.8	1015	303.9	267.1
MAX	0.00	938	1760	2760	1930	3560	2850	1110	1930	1460	1070	1470
MIN	0.00	0.00	783	930	1510	812	1560	0.00	715	699	0.00	0.00
AC-FT	0.00	1860	64940	86650	98560	104400	124600	8270	57410	62400	18690	15890
(*)	0	0	44	0	0	0	0	83	0	0	0	0
CAL YR 2001	TOTAL	359400.0	MEAN	984.7	MAX	4230	MIN	0.00	AC-FT	712900	(*)	270
WTR YR 2002	TOTAL	324524.0	MEAN	889.1	MAX	3560	MIN	0.00	AC-FT	643700	(*)	127

(*) Return flow, in acre-feet, by Pilot Knob Wasteway (included in daily discharge table).

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09527500 ALL-AMERICAN CANAL BELOW PILOT KNOB WASTEWAY, CA

LOCATION--Lat 32° 44'07", long 114° 43'25", in NE1/4SE1/4 sec. 26, T.16 S., R.21 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030107, on left bank 0.4 mi downstream from Pilot Knob wasteway, 6 mi west of Yuma, AZ, 15 mi upstream from turnout to Coachella Canal, and 21.2 mi downstream from intake at Imperial Dam.

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

GAGE--Water-stage recorder. Datum of gage is 150.00 ft above sea level. Auxiliary water-stage recorder on right bank 0.4 mi upstream, used to determine head on Pilot Knob check gates (also used as forebay gage for sta 09527000, Pilot Knob powerplant and wasteway). Datum of auxiliary gage is 150.00 ft above NGVD.

REMARKS--No estimated daily discharges. Records excellent. Water is used for power development at four sites below station and for irrigation in Coachella and Imperial Valleys.

COOPERATION--Daily discharges furnished by Imperial Irrigation District.

EXTREMES FOR PERIOD OF RECORD--Maximum daily discharge, 7,610 ft³/s Apr. 27, 28, 1976; no flow Jan. 4, 1967.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1	4640	4150	3320	1400	3220	5110	5480	6210	6360	6480	6740	5310	
2	4490	3930	2960	2510	2690	4740	6020	6220	6020	6450	6360	5470	
3	4580	3860	3200	2820	2130	4150	6350	6110	6260	6660	5970	5670	
4	4850	3620	3090	2780	2620	4440	6440	6060	5740	6590	5730	5590	
5	4980	3880	3260	2540	2750	4580	6190	5720	6260	6360	6180	5770	
6	4980	3940	3330	1990	2940	4820	6040	6370	6630	6270	6270	5390	
7	4430	3980	3320	2230	3310	4840	5130	6610	6520	6270	6280	4930	
8	4560	4200	3130	2410	2950	4490	5460	6630	6290	6810	6500	4390	
9	4660	4220	2780	2420	3080	4010	5770	6640	6280	7020	6460	4860	
10	4640	3900	2970	2630	2910	3540	5890	6760	6370	7100	6150	4860	
11	4960	3360	3050	2690	3340	4280	6050	6490	6510	7200	5700	4380	
12	5010	3700	2870	2920	3760	4610	6150	6000	6690	7010	5850	4040	
13	4460	3660	3040	2400	4020	5010	5620	6380	6470	6820	6160	3920	
14	4240	3800	3020	2790	4130	5120	5400	6520	6090	6640	6350	3760	
15	4750	3800	2580	2860	4070	5180	5790	6510	5400	6750	6280	3780	
16	4850	3780	2280	2910	3660	4710	5930	6760	4880	6770	6280	4150	
17	4930	3770	2610	3220	3260	4380	6220	6730	5600	6770	6020	4670	
18	5000	3440	2780	3280	3670	5070	6340	6370	6030	6740	5730	4490	
19	5010	3460	2930	3000	4070	5240	6200	5940	6100	6640	5760	4560	
20	4570	3500	2890	2370	4470	5280	6170	6360	6130	6250	5660	5260	
21	4270	3240	2950	2890	4670	5480	5860	6200	6090	6220	5660	5720	
22	4540	2430	2780	2840	4730	5650	6210	6160	5800	6320	5710	5530	
23	4600	2960	2090	3050	4870	4900	6460	6150	5650	6600	5580	5520	
24	4440	2980	1170	3000	4510	4610	6450	6080	6150	6530	5500	5370	
25	4210	2870	1160	3060	4920	5150	6630	5640	6350	6700	5260	5470	
26	4090	3370	2080	2470	4960	5560	6520	5440	6340	6770	5460	5440	
27	4030	3430	2350	1980	4910	5720	6080	5860	6090	6520	5670	5200	
28	3740	3470	2650	2700	4920	6030	5800	6220	6300	6510	5760	4780	
29	3960	3660	2610	2800	---	5750	6130	6260	6020	6710	6130	4610	
30	4110	3550	2160	3050	---	5540	6240	6500	5800	6790	6050	4890	
31	4060	---	1490	3220	---	4670	---	6470	---	6800	5780	---	
TOTAL	140640	107910	82900	83230	105540	152660	181020	194370	183220	206070	184990	147780	
MEAN	4537	3597	2674	2685	3769	4925	6034	6270	6107	6647	5967	4926	
MAX	5010	4220	3330	3280	4960	6030	6630	6760	6690	7200	6740	5770	
MIN	3740	2430	1160	1400	2130	3540	5130	5440	4880	6220	5260	3760	
AC-FT	279000	214000	164400	165100	209300	302800	359100	385500	363400	408700	366900	293100	
CAL YR 2001	TOTAL 1718974	MEAN 4710	MAX 6980	MIN 921	AC-FT 3410000								
WTR YR 2002	TOTAL 1770330	MEAN 4850	MAX 7200	MIN 1160	AC-FT 3511000								

**RIO SONOYTA BASIN
SAN SIMON WASH BASIN**

09535100 SAN SIMON WASH NEAR PISINIMO, AZ

LOCATION.--Lat 32° 02'39", long 112° 22'13", in SE1/4 sec. 9, T.16 S., R.1 W. (unsurveyed), Pima County, Hydrologic Unit 15080101, in Tohono O'Odham Indian Reservation, on right bank about 100 ft downstream from road, just upstream from Gu Vo Wash, and 3.2 mi west of Pisinimo.

DRAINAGE AREA.--569 mi².

PERIOD OF RECORD.--Feb. 1972 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,830 ft above sea level, from topographic map. Prior to Oct. 1, 1980, at site 120 ft upstream at same datum.

REMARKS.--Records fair, except for daily discharges which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,500 ft³/s Sept. 24, 1976, gage height, 10.82 ft, from rating curve extended above 1,700 ft³/s on basis of slope-area measurement of peak flow; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 7.....	2030	*352	*5.57

Minimum daily discharge, no flow for most of year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	e0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57
8	48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28
9	e1.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	e4.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.3	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.5	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	111.70	0.00	35.10	0.00	0.00	0.00	0.00	0.00	0.00	18.89	54.00	85.00
MEAN	3.60	0.000	1.13	0.000	0.000	0.000	0.000	0.000	0.000	0.61	1.74	2.83
MAX	62	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	11	54	57
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	222	0.00	70	0.00	0.00	0.00	0.00	0.00	0.00	37	107	169
CFSM	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IN.	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2002, BY WATER YEAR (WY)

MEAN	4.35	1.10	1.74	2.22	1.72	1.20	0.029	0.070	0.017	6.65	12.1	8.92
MAX	44.2	14.3	21.1	39.0	26.0	8.50	0.35	1.97	0.50	39.5	92.5	140
(WY)	1984	1979	1998	1993	1998	1983	1997	1976	2000	1976	1984	1976
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000
(WY)	1974	1978	1973	1973	1974	1977	1973	1973	1973	1979	1975	1973

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1973 - 2002	
ANNUAL TOTAL	604.00		304.69			
ANNUAL MEAN	1.65		0.83		3.37	
HIGHEST ANNUAL MEAN					15.2	
LOWEST ANNUAL MEAN					0.13	
HIGHEST DAILY MEAN	250	Mar 7	62	Oct 7	3320	Sep 24 1976
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Oct 1 1972
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 10	0.00	Oct 8 1972
ANNUAL RUNOFF (AC-FT)	1200		604		2440	
ANNUAL RUNOFF (CFSM)	0.003		0.001		0.006	
ANNUAL RUNOFF (INCHES)	0.04		0.02		0.08	
10 PERCENT EXCEEDS	0.00		0.00		0.00	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated

RIO SONOYA BASIN
SAN SIMON WASH BASIN

09535300 VAMORI WASH AT KOM VO, AZ

LOCATION--Lat 31°57'04", long 112°20'50", in NW¹/₄ sec. 14, T.17 S., R.1 W (unsurveyed), Pima County, Hydrologic Unit 15080101, in Tohono O'Odham Indian Reservation, on right bank 200 ft downstream from road crossing, 0.6 mi south of Kom Vo (Santa Cruz Village) and 5 mi upstream from mouth.

DRAINAGE AREA--1,250 mi², approximately, of which about 250 mi² is in Mexico.

PERIOD OF RECORD--Feb. 1972 to current year.

GAGE--Water-stage recorder. Elevation of gage is 1,770 ft above sea level, from topographic map.

REMARKS--Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 10,400 ft³/s Oct. 3, 1983, gage height, 10.54 ft, from rating curve extended above 550 ft³/s on basis of slope-area measurement of peak flow; no flow for most of each year.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 400 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 21.....	00:15	*198	*8.07

Minimum daily discharge, no flow for most of year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
7	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	3.4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.0	0.00	e4.2
12	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	e4.7
13	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.23
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.4	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	e2.2	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	e0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	e0.00	0.00	---
TOTAL	---	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	---	165.69	9.13
MEAN	---	0.000	---	0.000	0.000	0.000	0.000	0.000	0.000	---	5.34	0.30
MAX	---	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	---	100	4.7
MIN	---	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
AC-FT	---	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	---	329	18
CFSM	---	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
IN.	---	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2002, BY WATER YEAR (WY)

	MEAN	MAX	MIN	(WY)	MEAN	MAX	MIN	(WY)	MEAN	MAX	MIN	(WY)
	29.6	463	0.000	1984	3.32	36.7	0.000	1973	4.51	26.4	0.000	1973
	7.18	61.3	0.000	1993	3.91	33.1	0.000	1974	2.28	27.8	0.000	1974
	0.43	10.2	0.000	1983	0.035	0.49	0.000	1973	0.003	0.67	0.000	1973
	16.3	113	0.000	1990	27.7	106	0.000	1977	13.6	103	0.000	1973

SUMMARY STATISTICS

WATER YEARS 1973 - 2002

ANNUAL MEAN	9.32
HIGHEST ANNUAL MEAN	52.3
LOWEST ANNUAL MEAN	0.97
HIGHEST DAILY MEAN	8030 Oct 3 1983
LOWEST DAILY MEAN	0.00 Oct 1 1972
ANNUAL SEVEN-DAY MINIMUM	0.00 Oct 10 1972
ANNUAL RUNOFF (AC-FT)	6750
ANNUAL RUNOFF (CFSM)	0.007
ANNUAL RUNOFF (INCHES)	0.10
10 PERCENT EXCEEDS	4.3
50 PERCENT EXCEEDS	0.00
90 PERCENT EXCEEDS	0.00

e Estimated

**SULPHUR SPRING VALLEY
WHITEWATER DRAW BASIN**

09537200 LESLIE CREEK NEAR MCNEAL, AZ

LOCATION.--Lat 31° 35' 24", Long 109° 30' 30", in SE1/4NE1/4 sec. 20, T.21 S., R.28 E., Cochise County, Hydrologic Unit 15080301, on right bank 10 mi east of McNeal.

DRAINAGE AREA.--79.1 mi².

PERIOD OF RECORD.--Oct. 1969 to Sept. 1977, July 1982 to current year.

GAGE.--Water-stage recorder and concrete control with shallow sharp-crested V-notch weir. Elevation of gage is 4,620 ft above sea level, from topographic map.

REMARKS.- Records good except for period of estimated record, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,200 ft³/s Sept. 1, 1994, gage height, 9.00 ft, from rating curve extended above 12 ft³/s on basis of slope-area measurements of peak flow at gage height 7.33 ft and 8.54 ft; no flow for many days in 1976, 1977, 1990, and 1999.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, Oct. 1977 to July 1982, 468 ft³/s, date unknown, gage height, 4.76 ft in gage well.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 22.....	1715	270	4.71
Aug. 2.....	0015	*521	*4.77

Minimum daily discharge, zero flow Oct. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.11	e0.21	0.24	0.24	0.18	0.16	0.13	0.06	0.02	0.01	5.3	0.06
2	0.11	e0.21	0.24	0.24	0.18	0.16	0.12	0.06	0.01	0.01	65	0.02
3	0.11	e0.21	0.24	0.24	0.20	0.16	0.12	0.06	0.01	0.01	28	0.03
4	0.12	e0.21	0.24	0.24	0.21	0.16	0.12	0.06	0.02	0.01	17	0.00
5	0.12	e0.21	0.24	0.24	0.19	0.16	0.12	0.08	0.03	0.01	1.2	0.00
6	0.13	0.20	0.24	0.24	0.19	0.16	0.12	0.07	0.01	0.01	2.7	0.00
7	0.14	0.20	0.24	0.24	0.19	0.16	0.12	0.06	0.01	0.01	3.1	0.01
8	0.15	0.21	0.23	0.24	0.18	0.16	0.12	0.07	0.01	0.01	0.20	0.03
9	0.15	0.21	0.22	0.24	0.18	0.16	0.12	0.07	0.01	0.01	0.14	0.01
10	0.15	0.21	0.22	0.24	0.21	0.16	0.12	0.06	0.01	0.01	11	0.01
11	0.16	0.21	0.23	0.24	0.24	0.16	0.11	0.07	0.01	0.01	0.29	0.02
12	0.15	0.22	0.23	0.24	0.24	0.16	0.12	0.07	0.01	0.01	0.12	0.03
13	0.16	0.21	0.23	0.24	0.20	0.16	0.12	0.07	0.01	0.01	0.09	0.03
14	0.17	0.21	0.23	0.24	0.16	0.15	0.11	0.10	0.01	0.01	0.15	0.03
15	0.16	0.22	0.23	0.24	0.16	0.16	0.10	0.14	0.01	0.01	0.11	0.04
16	0.16	0.23	0.24	0.24	0.16	0.16	0.10	0.15	0.01	0.01	0.11	0.05
17	0.18	0.24	0.24	0.24	0.16	0.15	0.10	0.15	0.01	0.01	0.09	0.05
18	0.18	0.24	0.24	0.24	0.16	0.16	0.10	0.16	0.01	0.01	0.09	0.06
19	0.18	0.24	0.22	0.24	0.16	0.16	0.10	0.16	0.01	0.01	0.12	0.05
20	0.18	0.24	0.22	0.24	0.16	0.16	0.10	0.17	0.01	0.01	0.11	0.05
21	0.19	0.24	0.22	0.23	0.16	0.15	0.09	0.14	0.01	0.01	0.11	0.05
22	0.21	0.23	0.23	0.22	0.16	0.15	0.09	0.06	0.01	1.2	0.11	0.06
23	0.21	0.22	0.24	0.21	0.16	0.15	0.08	0.04	0.01	1.1	0.11	0.06
24	0.21	0.22	0.24	0.21	0.16	0.15	0.08	0.02	0.01	0.07	0.09	0.06
25	0.22	0.22	0.23	0.21	0.16	0.16	0.08	0.02	0.01	0.10	0.15	0.05
26	0.22	0.23	0.23	0.22	0.16	0.16	0.08	0.02	0.01	0.11	0.09	0.04
27	0.21	0.24	0.24	0.21	0.16	0.14	0.08	0.05	0.01	0.11	0.05	0.01
28	0.22	0.24	0.24	0.22	0.16	0.13	0.10	0.04	0.01	0.05	0.05	0.03
29	e0.22	0.24	0.23	0.23	---	0.13	0.08	0.02	0.01	0.08	0.04	0.05
30	e0.21	0.24	0.23	0.21	---	0.13	0.07	0.02	0.01	0.08	0.03	0.06
31	e0.21	---	0.23	0.17	---	0.13	---	0.02	---	0.05	0.06	---
TOTAL	5.30	6.66	7.22	7.14	4.99	4.76	3.10	2.34	0.21	13.77	135.81	1.03
MEAN	0.171	0.222	0.233	0.230	0.178	0.154	0.103	0.075	0.007	0.444	4.381	0.034
MAX	0.22	0.24	0.24	0.24	0.24	0.16	0.13	0.17	0.03	1.2	65	0.06
MIN	0.11	0.20	0.22	0.17	0.16	0.13	0.07	0.02	0.01	0.01	0.03	0.00
AC-FT	11	13	14	14	9.9	9.4	6.1	4.6	0.4	27	269	2.0
CFSM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.06	0.00
IN.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.06	0.00

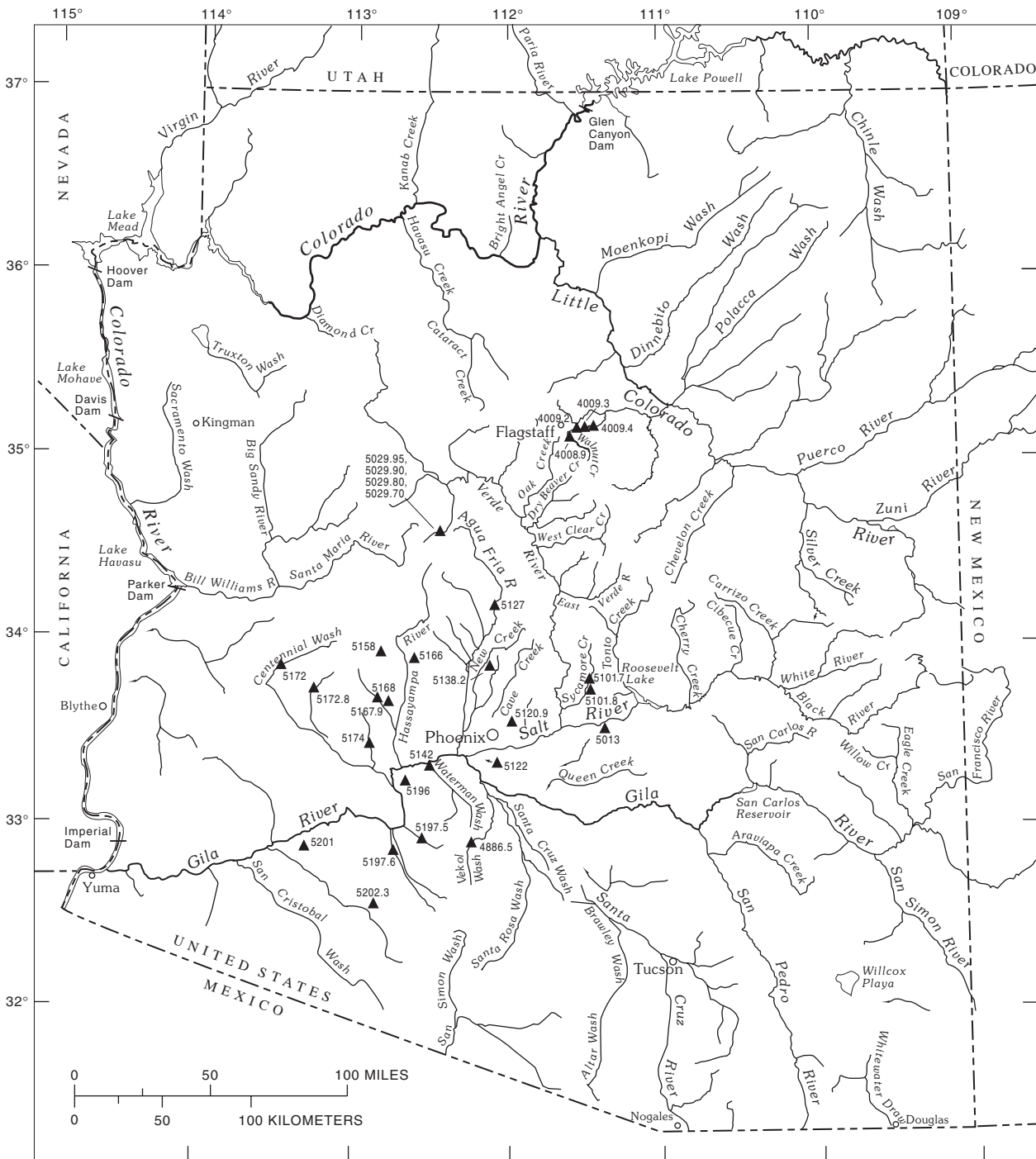
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2002, BY WATER YEAR (WY)

	2000	1998	1998	1998	1999	1999	2000	1999	1999	2000	2000	2000
MEAN	2.802	0.415	0.244	0.272	0.294	0.305	0.282	0.245	0.228	1.607	9.165	1.089
MAX	13.4	1.35	0.35	0.46	0.57	0.55	0.52	0.50	0.41	3.99	34.8	3.99
(WY)	2001	2001	2001	2001	2001	2001	2001	2001	2001	1998	1999	1999
MIN	0.13	0.060	0.10	0.13	0.14	0.15	0.10	0.074	0.022	0.15	0.13	0.055
(WY)	2000	1998	1998	1998	1999	1999	2002	1999	1999	2000	2000	2000

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1998 - 2002

ANNUAL TOTAL	133.96	192.33	
ANNUAL MEAN	0.367	0.527	1.504
HIGHEST ANNUAL MEAN			3.55 1999
LOWEST ANNUAL MEAN			0.25 2000
HIGHEST DAILY MEAN	0.71 Apr 21	65 Aug 2	611 Aug 15 1999
LOWEST DAILY MEAN	0.07 Sep 27	0.00 Jun 18	0.00 Jun 5 1999
ANNUAL SEVEN-DAY MINIMUM	0.10 Sep 27	0.00 Jun 18	0.00 Jun 5 1999
ANNUAL RUNOFF (AC-FT)	266	381	1090
ANNUAL RUNOFF (CFSM)	0.005	0.007	0.019
ANNUAL RUNOFF (INCHES)	0.06	0.09	0.26
10 PERCENT EXCEEDS	0.58	0.24	0.44
50 PERCENT EXCEEDS	0.37	0.15	0.20
90 PERCENT EXCEEDS	0.17	0.00	0.07

e Estimated



Base from U.S. Geological Survey
 State base maps, 1:500,000,
 Arizona, 1974; Nevada, 1965;
 New Mexico, 1965; and Utah, 1959

EXPLANATION

▲ 5201 PARTIAL-RECORD STREAMFLOW-GAGING STATION EQUIPPED WITH CREST-STAGE GAGE ONLY—
 Abbreviated number is station identifier. The complete station number is 09520100

Figure 7. Location of partial-record streamflow-gaging stations, water year 2002.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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 crest-stage partial-record stations are presented in the following table. Discharge measurements made at low-flow partial-record sites and at miscellaneous sites and for special studies are given in separate tables.

Crest-stage partial-record stations

The following table contains annual maximum discharges of independent peaks at crest-stage 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, and discharge measurements may have been made for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Maximum discharge at crest-stage partial-record stations

Station name and number	Location and drainage area (mi ²)	Period of record	Water year 2001 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
Gila River Basin								
Walnut Creek below lower Lake Mary near Flagstaff, AZ (09400890)	Lat 35° 07' 17", long 111° 35' 32", in NE ¹ / ₄ NW ¹ / ₄ , sec.18, T.20 N., R.8 E., Coconino County, Hydrologic Unit 15020015, on left bank about 0.5 mi downstream from Lake Mary Road., 7.5 mi southeast of Flagstaff. Drainage area, undetermined.	1995–2002	--	--	--	04–00–97	10.21	--
Walnut Creek at Fisher Point near Flagstaff, AZ (09400920)	Lat 35° 09' 02", long 111° 35' 42", in SE ¹ / ₄ SW ¹ / ₄ , sec.31, T.21 N., R.8 E., Coconino County, Hydrologic Unit 15020015, about 0.4 mi downstream from the confluence of Walnut Creek and Skunk Canyon, 4.0 mi south of Flagstaff. Drainage area, undetermined.	1995–2002	--	--	--	--	a	--
Walnut Creek near upstream (west) boundary of Walnut Canyon National Monument near Flagstaff, AZ (09400930)	Lat 35° 09' 54", long 111° 31' 27", in NE ¹ / ₄ NE ¹ / ₄ , sec.34, T.21 N., R.8 E., Coconino County, Hydrologic Unit 15020015, 0.8 mi south of Walnut Canyon Rd. at Walnut Canyon boundary, 0.2 mi upstream of boundary, 5.5 mi southeast of Flagstaff. Drainage area, undetermined.	1995–2002	--	--	--	--	a	--
Cherry Creek near downstream boundary of Walnut Canyon National Monument near Flagstaff, AZ (09400940)	Lat 35° 09' 23", long 111° 28' 54", in NE ¹ / ₄ SW ¹ / ₄ , sec.31, T.21 N., R.9 E., Coconino County, Hydrologic Unit 15020015, 0.1 mi upstream from the confluence with Walnut Creek in Walnut Canyon National Monument, 7.5 mi southeast of Flagstaff. Drainage area, undetermined.	1995–2002	08–13–01	10.83	--	09–00–97	12.20	--
Vekol Wash near Stanfield, AZ (09488650)	Lat 32° 50' 30", long 112° 15' 04", in SW ¹ / ₄ SW ¹ / ₄ sec.3, T.7 S., R.1 E., Maricopa County, Hydrologic Unit 15050303, on left bank 400 ft downstream from I-8 highway bridge. Drainage area, 150 mi ² .	1991–96* 1997–2001	10-06-01	5.87	602.3	07–25–96	9.77	7,780
Tortilla Creek at Tortilla Flat, AZ (09501300)	Lat 33° 31' 38", long 111° 23' 13", in NW ¹ / ₄ sec. 13, T.2 N., R.9 E (unsurveyed), Maricopa County, Hydrologic Unit 15060106, 600 ft upstream from State Highway 88 and Tortilla Flat Store, and 3.7 mi southeast of Mormon Flat Dam. Drainage area, 24.3 mi ² .	1966–83, 1991–2002	09-06-02	4.54	96	09–01–71	13.23	7,500
Tributary to Granite Creek at Prescott, AZ (09502970)	Lat 34° 33' 04", long 112° 27' 37", in SW ¹ / ₄ SW ¹ / ₄ , sec.34, T.14 N., R.2 W., Yavapai County, Hydrologic Unit 15060202 on the Yavapai Indian Reservation near the southern boundary at Prescott. Drainage area, undetermined.	1994–2002	09-10-02	12.13	167	08–24–98	13.46	416

See footnotes at end of table.

Station name and number	Location and drainage area (mi ²)	Period of record	Water year 2001 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
Gila River Basin—Continued								
Government Canyon Wash at Prescott, AZ (09502980)	Lat 34° 33' 24", long 112° 26' 54", in SE ¹ / ₄ SE ¹ / ₄ , sec.27, T.14 N., R.2 W., Yavapai County, Hydrologic Unit 15060202 on the Yavapai Indian Reservation, 0.1 mi upstream of the mouth on the old Highway 89 bridge at Prescott. Drainage area, undetermined.	1994–2002	09-10-02	6.53	93	08–24–98	6.99	265
Goat Ranch Wash at Prescott, AZ (09502990)	Lat 34° 33' 27", long 112° 26' 37", in SW ¹ / ₄ SW ¹ / ₄ , sec.26, T.14 N., R.2 W., Yavapai County Hydrologic Unit 15060202 on the Yavapai Indian Reservation, 0.1 mi upstream of the mouth on the old Highway 89 bridge at Prescott. Drainage area, undetermined.	1994–2002	09-10-02	3.43	35	08–26–00	3.76	104
Slaughter House Wash near Prescott, AZ (09502995)	Lat 34° 33' 40", long 112° 26' 29", in NE ¹ / ₄ SW ¹ / ₄ , sec.26, T.14 N., R.2 W., Yavapai County, Hydrologic Unit 15060202 on the Yavapai Indian Reservation, 0.1 mi upstream from the mouth, on the downstream side of Highway 89 bridge abutment, 0.5 mi north of Prescott. Drainage area, undetermined.	1994–2002	09-10-02	10.59	226	08–24–98	10.99	285
Camp Creek near Sunflower, AZ (09510170)	Lat 33° 45' 35", long 111° 29' 44", in SW ¹ / ₄ sec.24, T.5 N., R.8 E Maricopa County, Hydrologic Unit 15060203, on right bank at upstream side of culvert on State Highway 87, half a mile upstream from mouth and 7 mi south of Sunflower. Drainage area, 2.6 mi ² .	1963–66*, 1967–79, 1991–2002	--	--	--	03–02–78	5.05	402
Rock Creek near Sunflower, AZ (09510180)	Lat 33° 43' 49", long 111° 30' 28", in SW ¹ / ₄ sec.24, T.5 N., R.8 E., Maricopa County, Hydrologic Unit 15060203, on left bank 300 ft from culvert on State Highway 87, 0.3 mi upstream from mouth, and 10 mi south of Sunflower. Drainage area, 15.2 mi ² .	1963–72, 1991–2002	08-28-02	4.34	83	01–08–93	7.30	2,550
Indian Bend Wash at Shea Boulevard at Phoenix, AZ (09512090)	Lat 33° 35' 05", long 111° 58' 10", in SW ¹ / ₄ SW ¹ / ₄ SE ¹ / ₄ sec.20, T.3 N., R.4 E., Maricopa County, Hydrologic Unit 15060106, on left bank 500 ft upstream from Shea Boulevard bridge. Drainage area, 24.5 mi ² .	1984–2002	07-14-02	2.46	1,406	10–06–93	3.89	4,700
Salt River tributary in South Mountain Park at Phoenix, AZ (09512200)	Lat 33° 20' 49", long 112° 05' 03", in NE ¹ / ₄ NE ¹ / ₄ sec.18, T.1 N., R.3 E., Maricopa County, Hydrologic Unit 15060106, in South Mountain Park, on left bank 7.4 mi south of Phoenix main post office. Drainage area, 1.75 mi ² .	1961–98*, 1999–2001	--	a	--	08–15–90	10.31	1,210
Agua Fria River tributary No. 2 near Rock Springs, AZ (09512700)	Lat 33° 02' 00", long 112° 08' 42", in SW ¹ / ₄ sec.14, T.8 N., R.2 E., Maricopa County, Hydrologic Unit 15070102, at culvert on Interstate Highway 17 (southbound lane), 1 mi south of Rock Springs, and 9 mi north of New River. Drainage area, 1.07 mi ² .	1963–80, 1991–2002	09-07-02	1.54	31.5	08–02–64	19.54	1,200
Deadman Wash near New River, AZ (09513820)	Lat 33° 50' 30", long 112° 08' 40", in NW ¹ / ₄ sec.27, T.6 N., R.2 E., Maricopa County, Hydrologic Unit 15070102, 300 ft down-stream from bridge on Interstate Highway 17, 4.5 mi south of New River. Drainage area, 11.1 mi ² .	1960–79, 1991–2002	09-07-02	6.87	511	12–25–59	7.00	1,850

See footnotes at end of table.

Station name and number	Location and drainage area (mi ²)	Period of record	Water year 2001 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
Gila River Basin—Continued								
Waterman Wash near Buckeye, AZ (09514200)	Lat 33° 19'49", long 112° 30'33", in SW ¹ / ₄ NE ¹ / ₄ sec.24, T.1 S., R.3 W., Maricopa County, Hydrologic Unit 15070101, 2.4 mi above mouth, 5.2 mi southeast of Buckeye. Drainage area, 420 mi ² .	1964–2002	09-08-02	3.07	72.5	08–08–97	7.80	9,400
Hartman Wash near Wickenburg, AZ (09515800)	Lat 33° 57'46", long 112° 49'40", in SW ¹ / ₄ sec.12, T.7 S., R.6 W., Maricopa County, Hydrologic Unit 15070103, at U.S. Highway 60, 5.7 mi west of Wickenburg. Drainage area, 5.57 mi ² .	1964–79, 1983, 1991–2002	--	--	--	09–14–67	8.05	2,600
Ox Wash near Morristown, AZ (09516600)	Lat 33° 53'00", long 112° 39'00", in NW ¹ / ₄ sec.11, T.6 N., R.4 W., Maricopa County, Hydrologic Unit 15070103, at U.S. Highway 60, 2.4 mi northwest of Morristown, and 7.6 mi southeast of Wickenburg. Drainage area, 6.31 mi ² .	1960, 1963–79, 1991–2002	09-07-02	12.24	3,840	09-07-02	12.24	3,840
Star Wash near Tonopah, AZ (09516790)	<u>Main Gage:</u> Lat 33° 37'59", long 112° 46'44", in SW ¹ / ₄ , NW ¹ / ₄ , sec.4, T.3 N., R.5 W., Maricopa County, Hydrologic Unit 15070104 on left bank 0.3 mi. SW from Star Well, 12 NE of Tonopah, AZ. <u>Secondary Gage:</u> approximately 500 ft NE of main gage on left bank in secondary channel. Drainage area undetermined.	9/2000-2002	09-06-02	^b 6.05 ^c 7.25	^d 640	10-27-00	^b 7.95 ^c 8.49	^d 1,960
Jack Rabbit Wash near Tonopah, AZ (09516800)	Lat 33° 39'32", long 112° 49'40", in NE ¹ / ₄ NW ¹ / ₄ sec.25, T.4 N., R.6 W., Maricopa County, Hydrologic Unit 15070103, 35 ft downstream from Wickenburg-Hassayampa Road, 4.5 mi upstream from Star Wash, and 14 mi northeast of Tonopah. Drainage area, 137 mi ² .	1964–79, 1983, 1991–2001	09-08-02	12.08	6,100	10–27–00	15.11	27,000
Centennial Wash tributary near Wenden, AZ (09517200)	Lat 33° 50'40", long 113° 28'00", in SW ¹ / ₄ SW ¹ / ₄ sec.24, T.6 N., R.12 W., La Paz County, Hydrologic Unit 15070104, at U.S. Highway 60, 5 mi northeast of Wenden. Drainage area, 2.79 mi ² .	1963–79, 1983, 1991–2001	--	a	--	09–05–70	4.66	790
Tiger Wash near Aguila, AZ (09517280)	Lat 33° 44'30", long 113° 16'43", in SW ¹ / ₄ SW ¹ / ₄ sec.26, T.5 N., R.10 W., Maricopa County, Hydrologic Unit 15070104, 17 mi south of Aguila. Drainage area, 85.2 mi ² .	1963–79, 1983, 1991–2001	09-09-02	8.65	5,180	09–26–97	10.17	8,070
Winter's Wash near Tonopah, AZ (09517400)	Lat 33° 29'22", long 112° 55'05", in SW ¹ / ₄ NW ¹ / ₄ sec.30, T.2 N., R.6 W., Maricopa County, Hydrologic Unit 15070104, on right bank 0.3 mi downstream from Interstate 10 and 1 mi east of Tonopah. Drainage area, 47.8 mi ² .	1963–79, 1999–2001	--	a	--	09–25–76	10.10	3,640
Rainbow Wash tributary near Buckeye, AZ (09519600)	Lat 33° 14'35", long 112° 38'15", in NE ¹ / ₄ sec.23, T.2 S., R.4 W., Maricopa County, Hydrologic Unit 15070101, at U.S. Highway 85, 9.5 mi southwest of Buckeye. Drainage area, ^c 3.45 (1.02) mi ² .	1963–79, 1983, 1991–2001	09-07-01	4.53	379	09–03–67	7.42	1,430
Bender Wash near Gila Bend, AZ (09519750)	Lat 32° 54'25", long 112° 33'05", in NE ¹ / ₄ sec.15, T.6 S., R.3 W., Maricopa County, Hydrologic Unit 15070101, along side of Interstate 8, 10 mi southeast of Gila Bend. Prior to Aug. 26, 1966, at site 0.65 mi downstream. Drainage area, 68.8 mi ² .	1963–79, 1983, 1991–2001	09-07-02	10.78	8,250	09-07-02	10.78	8,250

See footnotes at end of table.

Station name and number	Location and drainage area (mi ²)	Period of record	Water year 2001 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
Gila River Basin—Continued								
Sauceda Wash near Gila Bend, AZ (09519760)	Lat 32° 52' 14", long 112° 45' 30", in SE ¹ / ₄ SW ¹ / ₄ sec.27, T.6 S., R.5 W., Black Gap Quadrangle, Maricopa County, Hydrologic Unit 15070101 on the east side of State Highway 85, 5.3 mi south of Gila Bend at Mile Marker 5.3. Drainage area, 126 mi ² .	1963–79, 1990–94*, 1995–2001	--	a	--	09–25–76	6.30	3,153
Military Wash near Sentinel, AZ (09520100)	Lat 32° 50' 43", long 113° 16' 44", in SW ¹ / ₄ sec.3, T.7 S., R.10 W., Maricopa County, Hydrologic Unit 15070201, at Interstate Highway 8, 4.1 mi west of Sentinel. Drainage area, 8.70 mi ² .	1963–79, 1983, 1991–2001	10-07-01	5.31	1,670	10-07-01	5.31	1,670
Crater Range Wash near Ajo, AZ (09520230)	Lat 32° 33' 44", long 112° 52' 37", in NW ¹ / ₄ NW ¹ / ₄ sec.15, T.10 S., R.6 W., Maricopa County, Hydrologic Unit 15070202, at State Highway 85, 4.1 mi north of Maricopa-Pima County line, and 13.5 north of Ajo. Drainage area, 1.49 mi ² .	1963–79, 1983, 1991–2001	--	a	--	09–04–69	3.70	590

* Operated as a continuous-record gaging station.

a No highwater marks recorded.

b Main channel gage height.

c Secondary channel gage height.

d Combined discharge of main and secondary channels.

e Portion of drainage basin is generally noncontributing.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements at miscellaneous sites

Measurements of streamflow or spring flow at points other than gaging stations are given in the following table. Those that are measurements of base flow are designated by one asterisk (*); measurements of peak flow by two asterisks (**).

DISCHARGE MEASUREMENTS AT MISCELLANEOUS SITES

Stream or Spring	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
Colorado River Basin						
Kanab Creek	Colorado River	Lat 37° 28' 02", long 112° 24' 59", sec. 33, T.38S., R.5W., Kane County, UT, Hydrologic Unit 15010003	----		04-23-02	2.95
					07-30-02	2.65
Do.	do.	Lat 37° 27' 56", long 112° 25' 14", sec. 33, T.38S., R.5W., Kane County, UT, Hydrologic Unit 15010003	----		04-23-02	2.67
					07-30-02	2.31
Do.	do.	Lat 37° 27' 54", long 112° 25' 16", sec. 33, T.38S., R.5W., Kane County, UT, Hydrologic Unit 15010003	----		04-23-02	0.00
					07-30-02	0.003
Do.	do.	Lat 37° 27' 01", long 112° 26' 52", sec. 5, T.39S., R.5W., Kane County, UT, Hydrologic Unit 15010003	----		04-23-02	0.21
					07-30-02	0.247
Do.	do.	Lat 37° 25' 51", long 112° 27' 54", sec. 7, T.39S., R.5W., Kane County, UT, Hydrologic Unit 15010003	----		04-23-02	0.39
					07-30-02	0.07
Do.	do.	Lat 37° 24' 45", long 112° 28' 14", sec. 24, T.39S., R.6W., Kane County, UT, Hydrologic Unit 15010003	----		04-23-02	0.58
					07-30-02	0.025
Do.	do.	Lat 37° 21' 08", long 112° 29' 44", sec. 11, T.40S., R.6W., Kane County, UT, Hydrologic Unit 15010003	----		04-23-02	0.05
					07-30-02	0.0
Do.	do.	Lat 37° 11' 00", long 112° 32' 13", sec. 4, T.42S., R.6W., Kane County, UT, Hydrologic Unit 15010003	----		04-23-02	0.03
					07-30-02	0.0
Do.	do.	Lat 37° 11' 29", long 112° 32' 05", sec. 9, T.42S., R.6W., Kane County, UT, Hydrologic Unit 15010003	----		04-23-02	0.60
					07-30-02	0.0
Do.	do.	Lat 37° 08' 53", long 112° 32' 18", sec. 20, T.42S., R.6W., Kane County, UT, Hydrologic Unit 15010003	----		04-24-02	1.43
					07-30-02	0.57
Do.	do.	Lat 37° 08' 41", long 112° 32' 20", sec. 20, T.42S., R.6W., Kane County, UT, Hydrologic Unit 15010003	----		04-24-02	3.16
					07-30-02	2.31
Do.	do.	Lat 37° 05' 50", long 112° 32' 45", sec. 5, T.43S., R.6W., Kane County, UT, Hydrologic Unit 15010003	----		04-22-02	6.28
					07-29-02	2.94
Do.	do.	Lat 37° 04' 50", long 112° 32' 20", sec. 8, T.43S., R.6W., Kane County, UT, Hydrologic Unit 15010003	----		04-22-02	6.54
					07-29-02	2.56
Do.	do.	Lat 37° 04' 20", long 112° 32' 13", sec. 16, T.43S., R.6W., Kane County, UT, Hydrologic Unit 15010003	----		04-22-02	0.10
					07-29-02	0.24
Do.	do.	Lat 37° 03' 03", long 112° 32' 15", sec. 28, T.43S., R.6W., Kane County, UT, Hydrologic Unit 15010003	----		04-24-02	0.38
					07-29-02	0.0
Do.	do.	Lat 37° 01' 43", long 112° 32' 04", sec. 33, T.43S., R.6W., Kane County, UT, Hydrologic Unit 15010003	----		04-24-02	1.02
					07-29-02	0.137
Do.	do.	Lat 37° 00' 36", long 112° 32' 09", sec. 4, T.44S., R.6W., Kane County, UT, Hydrologic Unit 15010003	----		04-24-02	1.63
					07-29-02	0.137
Do.	do.	Lat 36° 59' 36", long 112° 32' 32", sec. 31, T.42N., R.2W., Coconino County, AZ, Hydrologic Unit 15010003	----		04-24-02	1.64
					07-29-02	0.0
Do.	do.	Lat 36° 58' 07", long 112° 31' 49", sec. 8, T.41N., R.2W., Coconino County, AZ, Hydrologic Unit 15010003	----		04-22-02	1.57
					07-29-02	0.0
Do.	do.	Lat 36° 57' 21", long 112° 31' 50", sec. 17, T.41N., R.2W., Coconino County, AZ, Hydrologic Unit 15010003	----		04-22-02	0.02
					07-29-02	0.0
Do.	do.	Lat 36° 57' 22", long 112° 31' 51", sec. 17, T.41N., R.2W., Coconino County, AZ, Hydrologic Unit 15010003	----		04-22-02	1.53
					07-29-02	0.0
Do.	do.	Lat 36° 56' 45", long 112° 32' 08", sec. 20, T.41N., R.2W., Coconino County, AZ, Hydrologic Unit 15010003	----		04-22-02	0.05
					07-29-02	0.0
Blue Spring in Grand Canyon	do.	Lat 36° 06' 59", long 111° 41' 35", sec. 36, T.32N., R.6E., Coconino County, Hydrologic Unit 15020016	----		02-16-02	97.0000
Red Canyon Spring in Grand Canyon	do.	Lat 36° 00' 21", long 111° 56' 04", sec. 11, T.30N., R.4E., Coconino County, Hydrologic Unit 15010001	----	2001	06-03-02	0.0050
JT Spring in Grand Canyon	do.	Lat 36° 00' 16", long 111° 57' 04", sec. 10, T.30N., R.4E., Coconino County, Hydrologic Unit 15010001	----		06-06-02	0.0020
Miners Spring in Grand Canyon	do.	Lat 36° 00' 59", long 111° 58' 17", sec. 4, T.30N., R.4E., Coconino County, Hydrologic Unit 15010001	----	2001	06-06-02	0.0010
Cottonwood Creek #2 in Grand Canyon	do.	Lat 36° 01' 08", long 111° 59' 26", sec. 32, T.31N., R.4E., Coconino County, Hydrologic Unit 15010001	----		06-05-02	0.0009

Colorado River Basin—Continued						
Cottonwood Creek #3 in Grand Canyon	Colorado River	Lat 36° 01'52", long 111° 59'17", sec. 32, T.31N., R.4E., Coconino County, Hydrologic Unit 15010001	----		10-07-02	0.0012
Grapevine East Spring in Grand Canyon	do.	Lat 36° 02'32", long 112° 00'42", sec. 25, T.31N., R.3E., Coconino County, Hydrologic Unit 15010001	----	2001	11-14-01	0.0010
Grapevine Main Spring in Grand Canyon	do.	Lat 36° 00'40", long 112° 00'09", sec. 1, T.30N., R.4E., Coconino County, Hydrologic Unit 15010001	----	2001	11-15-01	0.0030
Pumphouse Spring in Grand Canyon	do.	Lat 36° 04'39", long 112° 07'31", sec. 13, T.31N., R.2E., Coconino County, Hydrologic Unit 15010002	----	2001	06-12-02	0.0010
Pumphouse Spring in Grand Canyon	do.	Lat 36° 04'39", long 112° 07'31", sec. 13, T.31N., R.2E., Coconino County, Hydrologic Unit 15010002			11-19-01	0.0030
Monument Spring in Grand Canyon	do.	Lat 36° 03'56", long 112° 10'32", sec. 16, T.31N., R.2E., Coconino County, Hydrologic Unit 15010002	----	2001	11-19-01	0.0440
Monument Spring in Grand Canyon	do.	Lat 36° 03'56", long 112° 10'32", sec. 16, T.31N., R.2E., Coconino County, Hydrologic Unit 15010002	----	2001	05-02-02	0.0380
Monument Spring in Grand Canyon	do.	Lat 36° 03'56", long 112° 10'32", sec. 16, T.31N., R.2E., Coconino County, Hydrologic Unit 15010002	----	2001	05-16-02	0.0400
Cable Spring in Grand Canyon	do.	Lat 36° 04'37", long 112° 12'26", sec. 7, T.31N., R.2E., Coconino County, Hydrologic Unit 15010002	----	2001	01-19-02	0.0004
Boucher Spring in Grand Canyon	do.	Lat 36° 05'23", long 112° 15'35", sec. 11, T.31N., R.1E., Coconino County, Hydrologic Unit 15010002	----		04-25-02	0.0010
Slate Spring in Grand Canyon	do.	Lat 36° 06'58", long 112° 17'07", sec. 33, T.32N., R.1E., Coconino County, Hydrologic Unit 15010002	----	2001	04-24-02	0.0002
Sapphire Spring in Grand Canyon	do.	Lat 36° 07'11", long 112° 18'46", sec. 32, T.32N., R.1E., Coconino County, Hydrologic Unit 15010002	----		04-23-02	0.0009
Turquoise Creek in Grand Canyon	do.	Lat 36° 08'14", long 112° 19'51", sec. 30, T.32N., R.1E., Coconino County, Hydrologic Unit 15010002	----		04-22-02	0.0020
Ruby Spring in Grand Canyon	do.	Lat 36° 09'52", long 112° 20'35", sec. 13, T.32N., R.1W., Coconino County, Hydrologic Unit 15010002	----		04-21-02	0.0004
Serpentine Spring in Grand Canyon	do.	Lat 36° 11'41", long 112° 21'11", sec. 2, T.32N., R.1W., Coconino County, Hydrologic Unit 15010002	----		04-21-02	0.0007
Royal Arch Spring in Grand Canyon	do.	Lat 36° 11'19", long 112° 27'15", sec. 1, T.32N., R.2W., Coconino County, Hydrologic Unit 15010002	----	2001	03-23-02	0.0160
Forster Canyon Spring #2 in Grand Canyon	do.	Lat 36° 14'04", long 112° 31'43", sec. 29, T.33N., R.2W., Coconino County, Hydrologic Unit 15010002	----		05-03-02	0.0010
Fossil Spring in Grand Canyon	do.	Lat 36° 16'48", long 112° 31'51", sec. 5, T.33N., R.2W., Coconino County, Hydrologic Unit 15010002	----		05-18-02	0.0020
Matkatamiba Spring in Grand Canyon	do.	Lat 36° 19'28", long 112° 39'33", sec. 30, T.34N., R.3W., Coconino County, Hydrologic Unit 15010002	----		01-21-02	0.0200
Matkatamiba Spring in Grand Canyon	do.	Lat 36° 19'28", long 112° 39'33", sec. 30, T.34N., R.3W., Coconino County, Hydrologic Unit 15010002	----		05-05-02	0.0150
National Canyon Spring in Grand Canyon	do.	Lat 36° 13'47", long 112° 52'15", sec. 30, T.33N., R.5W., Coconino County, Hydrologic Unit 15010002	----		05-06-02	0.0005
Mohawk Canyon Spring in Grand Canyon	do.	Lat 36° 12'50", long 112° 58'10", sec. 30, T.33N., R.6W., Coconino County, Hydrologic Unit 15010002	----	2001	05-19-02	0.0110
Gila River Basin						
Gila River at Geronimo	Colorado River	Lat 33° 05'38", long 110° 01'49", SE ¹ / ₄ SW ¹ / ₄ SW ¹ / ₄ , sec.7 T.4 S., R.22 E., Graham County, Hydrologic Unit 15040005.	11,229		11-01-01 02-12-02 03-05-02 03-21-02 03-29-02 04-15-02 05-02-02 05-17-02 05-30-02 08-22-02	26.7 136 54.2 42.8 35.6 29.7 24.7 16.1 12.4 69.1

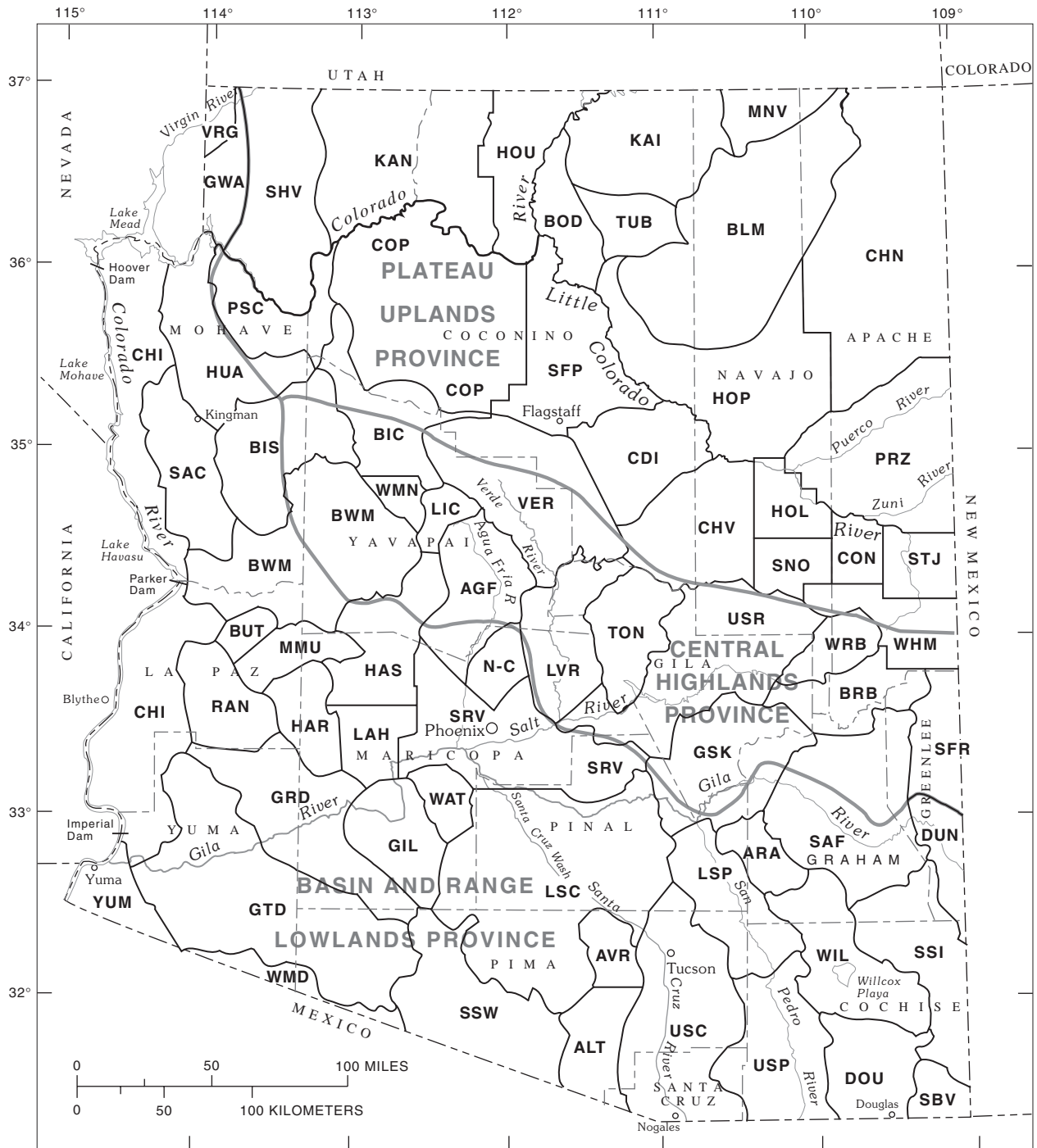


Base from U.S. Geological Survey
 State base maps, 1:500,000,
 Arizona, 1974; Nevada, 1965;
 New Mexico, 1965; and Utah, 1959

EXPLANATION

- BOUNDARY OF GROUND-WATER BASIN OR SUBBASIN
- BOUNDARY OF ACTIVE MANAGEMENT AREA (AMA)

Figure 8. Arizona Department of Water Resources ground-water basins, Active Management Areas (AMAs), and Irrigation Non-Expansion Areas (INAs).



Base from U.S. Geological Survey
 State base maps, 1:500,000,
 Arizona, 1974; Nevada, 1965;
 New Mexico, 1965; and Utah, 1959

EXPLANATION

———— BOUNDARY OF GROUND-WATER AREA

Figure 9. U.S. Geological Survey ground-water areas in Arizona.

GROUND-WATER AREAS AND ABBREVIATIONS

AGF — Agua Fria basin	LHA — Lower Hassayampa
ALT — Altar Valley	LSP — Lower San Pedro basin
ARA — Aravaipa Valley	LSC — Lower Santa Cruz basin
AVR — Avra Valley	LVR — Lower Verde River
BIC — Big Chino Valley	MMU — McMullen Valley
BIS — Big Sandy Valley	MNV — Monument Valley
BWM — Bill Williams	N-C — New River-Cave Creek
BLM — Black Mesa	PSC — Peach Springs Canyon
BRB — Black River basin	PRZ — Puerco-Zuni
BOD — Bodaway Mesa	RAN — Ranegras Plain
BUT — Butler Valley	SAC — Sacramento Valley
CDI — Canyon Diablo	SAF — Safford basin
CHV — Chevelon	SRV — Salt River Valley
CHN — Chinle	SBV — San Bernardino Valley
COP — Coconino Plateau	SFP — San Francisco Peaks
CHI — Colorado River, Hoover Dam to Imperial Dam	SFR — San Francisco River basin
CON — Concho	SSI — San Simon basin
DOU — Douglas basin	SSW — San Simon Wash
DUN — Duncan basin	SHV — Shivwits
GIL — Gila Bend basin	SNO — Snowflake
GRD — Gila River from Painted Rock Dam to Texas Hill	STJ — St. Johns
GSK — Gila River from head of San Carlos Reservoir to Kelvin	TON — Tonto basin
GTD — Gila River from Texas Hill to Dome	TUB — Tuba City
GWA — Grand Wash	USR — Upper Salt River basin
HAR — Harquahala Plains	USP — Upper San Pedro basin
HAS — Hassayampa basin	USC — Upper Santa Cruz basin
HOL — Holbrook	VER — Upper Verde River
HOP — Hopi	VRG — Virgin River
HOU — House Rock	WAT — Waterman Wash
HUA — Hualapai Valley	WMD — Western Mexican drainage
KAI — Kaibito	WHM — White Mountains
KAN — Kanab	WRB — White River basin
LIC — Little Chino Valley	WIL — Willcox basin
	WMN — Williamson Valley
	YUM — Yuma

WATER LEVELS IN SELECTED WELLS IN GROUND-WATER AREAS IN ARIZONA

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

KANAB CREEK BASIN

SITE: 365403112452801
LOCAL NUMBER: B-40-04 06AAC

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 01, 2001	86.1	JAN 23, 2002	86.0	APR 22, 2002	85.6	JUL 30, 2002	86.1
	HIGHEST	85.6	APR 22, 2002				
	LOWEST	86.1	NOV 01, 2001	JUL 30, 2002			

LITTLE COLORADO RIVER BASIN

SITE: 342024109220301
LOCAL NUMBER: A-11-28 22BDA2

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29, 2001	82.4	APR 30, 2002	84.1	JUN 27, 2002	84.4
	HIGHEST	82.4	OCT 29, 2001		
	LOWEST	84.4	JUN 27, 2002		

SITE: 343637109374901
LOCAL NUMBER: A-14-26W18DBC

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29, 2001	37.2	JAN 29, 2002	32.9	APR 30, 2002	33.4	JUN 27, 2002	38.7
	HIGHEST	32.9	JAN 29, 2002				
	LOWEST	38.7	JUN 27, 2002				

SITE: 344928109515301
LOCAL NUMBER: A-17-23 35DDB

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29, 2001	314.4	APR 30, 2002	310.0	SEP 27, 2002	316.2
JAN 29, 2002	311.6	JUL 10, 2002	316.9		
	HIGHEST	310.0	APR 30, 2002		
	LOWEST	316.9	JUL 10, 2002		

SITE: 345023110111401
LOCAL NUMBER: A-17-20 26DBC

DATE	WATER LEVEL
NOV 06, 2001	303.5

SITE: 345310110062501
LOCAL NUMBER: A-17-21 10CBA

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29, 2001	55.8	JAN 29, 2002	55.3	MAY 13, 2002	55.4	JUN 27, 2002	55.9
	HIGHEST	55.3	JAN 29, 2002				
	LOWEST	55.9	JUN 27, 2002				

SITE: 345333109474501
LOCAL NUMBER: A-17-24 09ABD

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29, 2001	270.6	APR 30, 2002	266.4	SEP 27, 2002	269.2
JAN 29, 2002	267.6	JUL 10, 2002	268.3		
	HIGHEST	266.4	APR 30, 2002		
	LOWEST	270.6	OCT 29, 2001		

WATER LEVELS IN SELECTED WELLS IN GROUND-WATER AREAS IN ARIZONA

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

SITE: 345603110450301
LOCAL NUMBER: A-18-15 28AAD

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 06, 2001	267.0	MAY 13, 2002	267.0	SEP 26, 2002	267.0
JAN 29, 2002	266.8	JUN 27, 2002	267.0		
	HIGHEST 266.8	JAN 29, 2002			
	LOWEST 267.0	NOV 06, 2001	MAY 13, 2002	JUN 27, 2002	SEP 26, 2002

SITE: 350002110355501
LOCAL NUMBER: A-19-16 36DBB

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29, 2001	37.4	JAN 29, 2002	36.1	MAY 13, 2002	36.0	JUN 27, 2002	36.7
	HIGHEST 36.0	MAY 13, 2002					
	LOWEST 37.4	OCT 29, 2001					

SITE: 350828111391501
LOCAL NUMBER: A-20-07 04DAC

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26, 2001	824.6	MAY 09, 2002	823.9	SEP 25, 2002	823.6
JAN 14, 2002	824.2	AUG 12	823.5		
	HIGHEST 823.5	AUG 12, 2002			
	LOWEST 824.6	OCT 26, 2001			

SITE: 350848111381701
LOCAL NUMBER: A-20-07 03ACA

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26, 2001	929.4	MAY 09, 2002	928.0	SEP 25, 2002	927.4
JAN 14, 2002	928.0	AUG 12	928.0		
	HIGHEST 927.4	SEP 25, 2002			
	LOWEST 929.4	OCT 26, 2001			

SITE: 351025111303701
LOCAL NUMBER: A-21-08 26DAB

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30, 2001	1568.2	FEB 12, 2002	1570.5	AUG 16, 2002	1573.9
	HIGHEST 1568.2	OCT 30, 2001			
	LOWEST 1573.9	AUG 16, 2002			

SITE: 351127111360001
LOCAL NUMBER: A-21-07 24AAD

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 04, 2001	1355.0	FEB 04, 2002	1340.0	MAY 09, 2002	1313.0	AUG 12, 2002	1313.0
	HIGHEST 1313.0	MAY 09, 2002	AUG 12, 2002				
	LOWEST 1355.0	OCT 04, 2001					

SITE: 351223111342802
LOCAL NUMBER: A-21-08 17BCA2

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 02, 2001	1310.2	FEB 04, 2002	1760.0	MAY 09, 2002	1309.0	AUG 12, 2002	1309.0
	HIGHEST 1309.0	MAY 09, 2002	AUG 12, 2002				
	LOWEST 1760.0	FEB 04, 2002					

WATER LEVELS IN SELECTED WELLS IN GROUND-WATER AREAS IN ARIZONA
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

SITE: 352214111324601
LOCAL NUMBER: A-23-08 21AAD

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30, 2001	1961.6	FEB 05, 2002	1961.6	MAY 14, 2002	1961.5	AUG 15, 2002	1961.9
	HIGHEST	1961.5	MAY 14, 2002				
	LOWEST	1961.9	AUG 15, 2002				

SITE: 353410111284001
LOCAL NUMBER: A-25-09 06CCD

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30, 2001	1587.7	FEB 06, 2002	1587.2	MAY 14, 2002	1587.5	AUG 16, 2002	1587.4
	HIGHEST	1587.2	FEB 06, 2002				
	LOWEST	1587.7	OCT 30, 2001				

SITE: 354229109345801
LOCAL NUMBER: 17 110-04.68X02.91

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29, 2001	137.5	APR 03, 2002	140.7	SEP 27, 2002	138.2
JAN 30, 2002	137.3	JUL 10	138.3		
	HIGHEST	137.3	JAN 30, 2002		
	LOWEST	138.2	SEP 27, 2002		

SITE: 354646111294801
LOCAL NUMBER: 03 098-13.94X15.20

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30, 2001	1066.3	FEB 06, 2002	1077.6	MAY 14, 2002	1040.6	AUG 16, 2002	1074.1
	HIGHEST	1040.6	MAY 14, 2002				
	LOWEST	1077.6	FEB 06, 2002				

QUALITY OF WATER IN SELECTED WELLS IN GROUND-WATER AREAS IN ARIZONA

SITE INFORMATION

LOCAL WELL NUMBER	STATE	COUNTY	LATITUDE (DEGREES)	LONGITUDE (DEGREES)	HYDROLOGIC UNIT (OWDC)	PRIMARY USE OF WATER	DEPTH OF WELL (FEET)	TOP OF OPEN INTERVAL (FEET)	BOTTOM OF OPEN INTERVAL (FEET)
AGUA FRIA BASIN									
A-09-02 27CBB1	AZ	YAVAPAI	340525	1120900	15070102	H	100	--	--
A-11-02 25BDD	AZ	YAVAPAI	341815	1120615	15070102	P	232	32	232
A-12-01 26DAD2	AZ	YAVAPAI	342320	1121300	15070102	P	335	35	335
B-14-01 14ACC	AZ	YAVAPAI	343535	1122000	15070102	P	496	26	496
COLORADO RIVER, HOOVER DAM TO IMPERIAL DAM									
B-04-19 29BCB1	AZ	LA PAZ	333945	1141500	15030106	P	591	365 511	403 591
GILA BEND BASIN									
C-04-04 04DAA	AZ	MARICOPA	330630	1124000	15070101	I	650	--	--
C-05-04 31ADD	AZ	MARICOPA	325700	1124200	15070101	I	1220	80.0 505 1100	505 1100 1220
GILA RIVER FROM PAINTED ROCK DAM TO TEXAS HILL									
C-04-11 21BCB	AZ	YUMA	330410	1132430	15070201	I	580	300 460 530 550	415 490 535 560
C-07-13 24ADA2	AZ	YUMA	324825	1133130	15070201	I	701	10	690
C-11-06 24ACA	AZ	PIMA	322730	1125000	15070202	P	1330	--	--
HARQUAHALA PLAINS									
C-01-09 05CCC	AZ	MARICOPA	332150	1131245	15070104	P	1100	741 845	831 1100
HASSAYAMPA BASIN									
B-09-06 02DCD	AZ	YAVAPAI	340840	1125045	15070103	P	1400	921 1030	1030 1400
LOWER HASSAYAMPA									
B-02-06 29BAB	AZ	MARICOPA	332935	1125350	15070104	I	1000	292	992
LOWER SANTA CRUZ BASIN									
D-06-04N04ABB	AZ	PINAL	325615	1115605	15050303	I	1010	313	607
D-07-04W01DAD	AZ	PINAL	325040	1115340	15050303	I	1460	500 764 1370	822 1370 1460
D-07-06 29DDD2	AZ	PINAL	324640	1114420	15050303	I	270	115 200	190 270
D-09-07 02CDD	AZ	PINAL	323940	1113540	15050303	I	562	126 416	542 562
D-09-07 03ADD	AZ	PINAL	324005	1113610	15050303	I	1000	250	980
D-10-10 05DAD	AZ	PINAL	323440	1111945	15050303	I	580	170	450
D-11-11 35DDD	AZ	PIMA	322530	1111100	15050303	I	502	400	480
MCMULLEN VALLEY									
B-07-09 11AAA	AZ	MARICOPA	335815	1130930	15070104	I	1020	380 755	755 1010
NEW RIVER-CAVE CREEK									
A-04-02 11ADB	AZ	MARICOPA	334230	1120710	15070102	T	900	425	600
A-05-02 03DCB	AZ	MARICOPA	334805	1120830	15070102	H	410	295 385	380 410
A-06-04 26DCC	AZ	MARICOPA	334945	1115500	15060106	P	485	150 423	435 485
RANEGRAS PLAIN									
B-03-14 11DDC	AZ	LA PAZ	333635	1133940	15030105	P	665	--	--
B-05-15 06ACB	AZ	LA PAZ	334825	1135140	15030105	S	500	400	500

See codes used to identify Primary Use of Water at end of table.

QUALITY OF WATER IN SELECTED WELLS IN GROUND-WATER AREAS IN ARIZONA

SITE INFORMATION-CONTINUED

SALT RIVER VALLEY

A-01-01 11ADD	AZ	MARICOPA	332645	1121315	15060106	I	863	--	--
A-01-02 13CDD2	AZ	MARICOPA	332520	1120630	15060106	I	401	110	390
A-01-02 14AAD	AZ	MARICOPA	332600	1120700	15060106	I	420	70.0	400
A-01-02 24BBB2	AZ	MARICOPA	332520	1120700	15060106	I	1680	200	800
								786	1500
								1480	1670
								1670	1680
A-01-02 31AAA	AZ	MARICOPA	332330	1121105	15060106	I	156	40	141
A-01-03 18BBB	AZ	MARICOPA	332600	1120550	15060106	I	410	--	--
A-01-05 30BBA	AZ	MARICOPA	332425	1115320	15060106	I	904	300	670
								680	684
								684	900
A-02-01 26DAA	AZ	MARICOPA	332915	1121315	15060106	I	701	170	685
A-02-06 27CAC	AZ	MARICOPA	332910	1114400	15060106	I	687	350	520
								520	687
B-01-01 28CDC	AZ	MARICOPA	332335	1122205	15070101	I	421	55.0	416
B-01-01 29CAD	AZ	MARICOPA	332345	1122300	15070101	I	335	50.0	115
								160	190
								215	320
B-01-01 30DBB	AZ	MARICOPA	332355	1122355	15070101	I	475	70.0	300
B-01-02 25BBC2	AZ	MARICOPA	332415	1122530	15070101	I	543	400	450
								540	543
B-01-02 27DAD	AZ	MARICOPA	332350	1122640	15070101	I	124	40.0	105
								116	124
B-01-02 29CCC	AZ	MARICOPA	332335	1122940	15070101	I	156	45.0	156
D-01-05 04CCC2	AZ	MARICOPA	332155	1115130	15050100	I	1000	400	990
D-01-05 23BDA	AZ	MARICOPA	331955	1114855	15050100	I	1000	450	982
								1000	1000
D-01-06 08DDD	AZ	MARICOPA	332102	1114519	15050100	I	440	160	426
D-01-10 35DBC	AZ	PINAL	331755	1111735	15050100	P	500	38	500

SAN FRANCISCO PEAKS

A-22-05 16DBC	AZ	COCONINO	351710	1115210	15060202	N	850	--	--
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UPPER SANTA CRUZ BASIN

D-11-14 32CCC2	AZ	PIMA	322529.5	1105631.0	15050301	P	--	--	--
D-12-12 16DDD	AZ	PIMA	322252	1110650	15050301	I	234	68.0	225
D-19-13 29CBB2	AZ	PIMA	314445	1110230	15050301	H	--	--	--
D-19-17 17BBB	AZ	PIMA	314715	1103800	15050302	S	845	331	845
D-22-13 34ADD UNSURV	AZ	SANTA CRUZ	312820	1105940	15050301	I	200	30.0	200
D-23-17 14CDD	AZ	SANTA CRUZ	312540	1103515	15050301	S	35.0	--	--
D-24-14 05ADB2	AZ	SANTA CRUZ	312225	1105540	15050301	N	550	--	--

UPPER VERDE RIVER

A-13-05 04BBA	AZ	YAVAPAI	343315	1114955	15060203	Z	205	100	205
A-13-05 27DCD1	AZ	YAVAPAI	342856	1114827	15060203	I	225	39.2	145
A-14-05 01BCD	AZ	YAVAPAI	343811	1114633	15060202	P	350	180	200
								210	350
A-15-03 12CDC	AZ	YAVAPAI	344215	1115910	15060202	P	700	500	700
A-15-04 02BCA1	AZ	YAVAPAI	344337	1115357	15060202	I	260	204	260
A-16-02 12CAD2	AZ	YAVAPAI	344642	1120520	15060202	N	833	640	833
A-16-03 34ADC	AZ	YAVAPAI	344428	1120048	15060202	P	300	75.0	300
A-17-06 08BDC	AZ	COCONINO	345210	1114520	15060202	P	747	505	706
A-18-07 15CCC2	AZ	COCONINO	345616	1113854	15060202	P	1250	1190	1250

WESTERN MEXICAN DRAINAGE

C-17-05 17ACB UNSURV	AZ	PIMA	315700	1124805	15080102	P	430	365	425
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YUMA

C-08-22 28CCC	AZ	YUMA	324158	1143145	15070201	I	169	116	168
C-10-24 12BCC	AZ	YUMA	323430	1144058	15030108	D	190	150	178

CODES USED TO IDENTIFY PRIMARY USE OF WATER

D Dewater	P Public Supply
H Domestic	S Stock Supply
I Irrigation	T Institutional
N Industrial	Z Other

QUALITY OF WATER IN SELECTED WELLS IN GROUND-WATER AREAS IN ARIZONA

WATER-QUALITY DATA

Local ident- i- fier	Station	number	Date	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)
AGUA FRIA BASIN										
A-09-02 27CBB1	340527112085801		05-28-02	7.3	696	21.3	210	56.0	17.0	2.60
A-11-02 25BDD	341816112061301		05-30-02	7.5	696	19.5	300	91.0	17.0	1.60
A-12-01 26DAD2	342322112130001		05-31-02	7.2	888	18.5	390	118	23.0	.80
B-14-01 14ACC	343540112195701		05-31-02	7.8	519	18.5	230	68.0	15.0	1.00
COLORADO RIVER, HOOVER DAM TO IMPERIAL DAM										
B-04-19 29BCB1	333946114150101		04-30-02	7.7	877	31.5	230	77.0	10.0	4.70
GILA BEND BASIN										
C-04-04 04DAA	330632112395901		05-02-02	7.2	4440	27.5	1000	337	49.0	12.0
C-05-04 31ADD	325700112415901		05-02-02	7.9	2650	28.0	210	78.0	3.20	8.60
GILA RIVER FROM PAINTED ROCK DAM TO TEXAS HILL										
C-04-11 21BCB	330415113242701		05-01-02	7.8	2720	30.0	590	213	13.0	9.10
C-07-13 24ADA2	324823113312901		05-01-02	8.1	1760	34.5	110	36.0	4.50	5.10
C-11-06 24ACA	322728112500201		04-29-02	8.1	970	42.0	44	13.0	2.90	3.50
HARQUAHALA PLAINS										
C-01-09 05CCC	332149113124601		05-03-02	8.0	1040	37.0	84	18.0	9.50	4.50
HASSAYAMPA BASIN										
B-09-06 02DCD	340838112504501		05-02-02	7.5	429	30.0	150	52.0	5.80	2.10
LOWER HASSAYAMPA										
B-02-06 29BAB	332936112535001		04-04-02	7.8	1220	29.0	150	49.0	7.90	4.70
LOWER SANTA CRUZ BASIN										
D-06-04N04ABB	325617111560601		05-29-02	7.5	1140	28.5	290	97.0	12.0	3.80
D-07-04W01DAD	325041111534201		05-31-02	8.3	511	31.0	31	8.30	2.40	1.30
D-07-06 29DDD2	324645111442301		05-29-02	7.2	3330	24.5	1200	375	55.0	6.30
D-09-07 02CDD	323954111353101		05-30-02	7.5	1080	25.5	340	110	15.0	3.50
D-09-07 03ADD	324007111361001		05-30-02	7.5	707	26.0	190	62.0	8.00	2.90
D-10-10 05DAD	323438111194501		05-31-02	7.7	453	28.0	130	44.0	5.00	2.50
D-11-11 35DDD	322530111110001		05-06-02	7.2	929	22.0	350	113	16.0	2.40
MCMULLEN VALLEY										
B-07-09 11AAA	335815113093001		04-29-02	8.2	556	31.0	98	21.0	11.0	3.10
NEW RIVER-CAVE CREEK										
A-04-02 11ADB	334230112070901		04-10-02	7.8	429	28.5	140	28.0	16.0	3.00
A-05-02 03DCB	334803112083201		04-11-02	8.1	529	31.0	88	17.0	11.0	3.80
A-06-04 26DCC	334943111545901		04-05-02	7.9	461	27.5	120	22.0	17.0	3.00
RANEGRAS PLAIN										
B-03-14 11DDC	333637113394001		04-30-02	8.1	1570	31.0	130	51.0	1.50	2.40
B-05-15 06ACB	334826113513801		05-01-02	7.7	2860	28.0	240	71.0	14.0	6.20
SALT RIVER VALLEY										
A-01-01 11ADD	332646112131501		09-18-02	7.3	2200	23.5	420	81.0	52.0	5.00
A-01-02 13CDD2	332520112063801		09-20-02	7.4	1530	--	250	60.0	23.0	5.20
A-01-02 14AAD	332600112070001		09-25-02	7.5	1230	23.5	200	50.0	19.0	4.70
A-01-02 24BBB2	332518112065601		09-25-02	7.4	1660	23.5	300	73.0	29.0	5.70
A-01-02 31AAA	332330112110601		09-11-02	7.6	2780	22.5	390	93.0	37.0	6.00
A-01-03 18BBD	332600112054801		09-20-02	7.6	1190	23.5	190	48.0	18.0	4.60
A-01-05 30BBA	332425111531801		09-12-02	7.5	1600	25.5	430	102	43.0	6.00
A-02-01 26DAA	332915112131601		09-18-02	7.5	1960	26.5	720	136	91.0	6.20
A-02-06 27CAC	332906111431601		09-19-02	7.7	1150	22.0	180	47.0	14.0	3.80
B-01-01 28CDC	332334112220701		09-13-02	7.3	4550	22.5	770	165	86.0	6.40
B-01-01 29CAD	332347112225401		09-23-02	7.2	3720	25.0	590	138	58.0	6.10
B-01-01 30DBB	332353112235601		09-23-02	7.2	4400	24.0	890	220	83.0	6.20
B-01-02 25BRC2	332416112253201		04-23-02	8.0	2250	40.0	100	33.0	4.40	5.20
B-01-02 27DAD	332349112264101		09-13-02	7.1	6170	24.0	1400	324	151	7.60
B-01-02 29CCC	332336112294101		09-13-02	7.1	4910	23.5	930	213	95.0	6.10
D-01-05 04CCC2	332153111513001		09-19-02	7.9	1160	29.0	190	43.0	19.0	4.80
D-01-05 23BDA	331953111485501		09-17-02	8.0	1520	32.5	200	48.0	20.0	5.30
D-01-06 08DDD	332102111451901		09-17-02	8.6	1270	36.5	44	17.0	.42	1.70
D-01-10 35DBC	331756111173701		04-12-02	7.2	1260	21.0	620	182	39.0	3.50
SAN FRANCISCO PEAKS										
A-22-05 16DBC	351716111520901		06-25-02	8.1	189	13.0	85	18.0	9.80	1.20

WATER-QUALITY DATA-CONTINUED

Local ident- i- fier	Date	SODIUM AD- SORP- TION RATIO (00931)	SODIUM DIS- SOLVED (MG/L AS NA) (00930)	ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	BROMIDE DIS- SOLVED (MG/L AS BR) (71870)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
AGUA FRIA BASIN										
A-09-02 27CBB1	05-28-02	2	75.0	245	--	27.0	.9	21.0	66.0	417
A-11-02 25BDD	05-30-02	.7	27.0	224	--	40.0	.4	35.0	63.0	414
A-12-01 26DAD2	05-31-02	.8	38.0	260	--	56.0	.3	26.0	110	538
B-14-01 14ACC	05-31-02	.5	17.0	152	--	10.0	.1	23.0	89.0	322
COLORADO RIVER, HOOVER DAM TO IMPERIAL DAM										
B-04-19 29BCB1	04-30-02	3	90.0	155	--	62.0	.8	39.0	170	560
GILA BEND BASIN										
C-04-04 04DAA	05-02-02	7	520	150	--	1140	.7	25.0	390	2610
C-05-04 31ADD	05-02-02	14	450	62	--	680	3.8	24.0	170	1470
GILA RIVER FROM PAINTED ROCK DAM TO TEXAS HILL										
C-04-11 21BCB	05-01-02	6	310	48	--	670	2.6	33.0	230	1580
C-07-13 24ADA2	05-01-02	13	320	71	--	320	4.8	18.0	250	1010
C-11-06 24ACA	04-29-02	12	180	103	--	150	4.8	46.0	92.0	572
HARQUAHALA PLAINS										
C-01-09 05CCC	05-03-02	9	190	158	--	130	2.5	22.0	120	608
HASSAYAMPA BASIN										
B-09-06 02DCD	05-02-02	1	29.0	155	--	17.0	.3	37.0	15.0	272
LOWER HASSAYAMPA										
B-02-06 29BAB	04-04-02	6	170	75	--	250	4.7	20.0	110	675
LOWER SANTA CRUZ BASIN										
D-06-04N04ABB	05-29-02	3	110	104	--	170	.2	24.0	160	675
D-07-04W01DAD	05-31-02	8	98.0	127	--	30.0	1.4	25.0	60.0	313
D-07-06 29DDD2	05-29-02	4	300	221	--	380	.3	44.0	900	2360
D-09-07 02CDD	05-30-02	2	87.0	128	--	99.0	.3	31.0	130	712
D-09-07 03ADD	05-30-02	2	68.0	128	--	53.0	.4	31.0	84.0	448
D-10-10 05DAD	05-31-02	2	42.0	126	--	19.0	.4	31.0	59.0	286
D-11-11 35DDD	05-06-02	1	59.0	209	--	80.0	.3	35.0	120	580
MCMULLEN VALLEY										
B-07-09 11AAA	04-29-02	3	77.0	144	--	57.0	2.4	27.0	29.0	336
NEW RIVER-CAVE CREEK										
A-04-02 11ADB	04-10-02	1	37.0	169	--	15.0	1.0	40.0	11.0	268
A-05-02 03DCB	04-11-02	4	81.0	199	--	17.0	3.3	51.0	17.0	343
A-06-04 26DCC	04-05-02	2	49.0	163	--	24.0	1.0	40.0	15.0	286
RANEGRAS PLAIN										
B-03-14 11DDC	04-30-02	10	260	61	--	200	3.5	23.0	320	923
B-05-15 06ACB	05-01-02	13	470	122	--	340	7.0	35.0	580	1630
SALT RIVER VALLEY										
A-01-01 11ADD	09-18-02	6	300	278	.6	430	.2	22.0	150	1250
A-01-02 13CDD2	09-20-02	6	210	238	.4	270	.3	22.0	110	857
A-01-02 14AAD	09-25-02	5	170	234	.3	180	.3	24.0	85.0	689
A-01-02 24BBB2	09-25-02	5	210	227	.4	310	.2	22.0	110	922
A-01-02 31AAA	09-11-02	10	430	350	.6	530	.5	29.0	220	1620
A-01-03 18BBB	09-20-02	5	170	230	.3	180	.3	23.0	71.0	669
A-01-05 30BBA	09-12-02	3	150	231	.3	300	.1	31.0	100	893
A-02-01 26DAA	09-18-02	2	93.0	115	.8	430	.2	23.0	120	1080
A-02-06 27CAC	09-19-02	5	160	179	.2	210	.3	21.0	50.0	617
B-01-01 28CDC	09-13-02	11	690	438	1.3	990	.3	29.0	430	2710
B-01-01 29CAD	09-23-02	10	550	289	1.1	820	.5	27.0	330	2140
B-01-01 30DBB	09-23-02	8	580	327	1.5	1010	.4	28.0	410	2580
B-01-02 25BBC2	04-23-02	17	400	85	--	550	4.9	25.0	130	1220
B-01-02 27DAD	09-13-02	9	820	302	2.6	1390	.9	38.0	850	3850
B-01-02 29CCC	09-13-02	10	720	277	2.1	1030	1.2	33.0	670	3030
D-01-05 04CCC2	09-19-02	4	140	89	.2	270	.6	24.0	40.0	598
D-01-05 23BDA	09-17-02	6	200	84	.4	360	.8	29.0	79.0	809
D-01-06 08DDD	09-17-02	15	230	37	.4	290	.9	20.0	71.0	674
D-01-10 35DBC	04-12-02	.7	40.0	237	--	44.0	.4	35.0	390	882
SAN FRANCISCO PEAKS										
A-22-05 16DBC	06-25-02	.3	5.8	88	--	2.30	<.1	23.0	4.00	119

QUALITY OF WATER IN SELECTED WELLS IN GROUND-WATER AREAS IN ARIZONA

WATER-QUALITY DATA-CONTINUED

Local ident- i- fier	Date	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	ORTHO- PHOS- PHATE, DIS- SOLVED (MG/L AS P) (00671)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)
AGUA FRIA BASIN										
A-09-02 27CBB1	05-28-02	.01	.76	<.010	<.01	--	--	604	--	--
A-11-02 25BDD	05-30-02	.01	1.10	<.010	<.01	--	--	45	--	--
A-12-01 26DAD2	05-31-02	.01	2.20	<.010	<.01	--	--	40	--	--
B-14-01 14ACC	05-31-02	.02	1.80	<.010	<.01	--	--	17	--	--
COLORADO RIVER, HOOVER DAM TO IMPERIAL DAM										
B-04-19 29BCB1	04-30-02	<.01	2.80	<.010	<.01	--	--	263	--	--
GILA BEND BASIN										
C-04-04 04DAA	05-02-02	.11	10.0	<.010	<.01	--	--	579	--	--
C-05-04 31ADD	05-02-02	.06	3.40	<.010	<.01	--	--	1070	--	--
GILA RIVER FROM PAINTED ROCK DAM TO TEXAS HILL										
C-04-11 21BCB	05-01-02	.01	17.0	<.010	<.01	--	--	427	--	--
C-07-13 24ADA2	05-01-02	<.01	2.70	<.010	<.01	--	--	1560	--	--
C-11-06 24ACA	04-29-02	<.01	3.90	<.010	<.01	79	--	502	--	--
HARQUAHALA PLAINS										
C-01-09 05CCC	05-03-02	.02	3.60	.010	<.01	--	--	461	--	--
HASSAYAMPA BASIN										
B-09-06 02DCD	05-02-02	<.01	4.80	<.010	<.01	--	--	43	--	--
LOWER HASSAYAMPA										
B-02-06 29BAB	04-04-02	.01	2.80	<.010	<.01	--	--	763	--	--
LOWER SANTA CRUZ BASIN										
D-06-04N04ABB	05-29-02	.02	8.00	<.010	<.01	--	--	192	--	--
D-07-04W01DAD	05-31-02	.01	2.40	<.010	<.01	--	--	203	--	--
D-07-06 29DDD2	05-29-02	.02	37.0	<.010	<.01	--	--	815	--	--
D-09-07 02CDD	05-30-02	.02	36.0	<.010	<.01	--	--	89	--	--
D-09-07 03ADD	05-30-02	.01	14.0	<.010	<.01	--	--	95	--	--
D-10-10 05DAD	05-31-02	.01	1.70	<.010	<.01	--	--	55	--	--
D-11-11 35DDD	05-06-02	<.01	6.50	<.010	<.01	--	--	87	--	--
MCMULLEN VALLEY										
B-07-09 11AAA	04-29-02	.01	4.90	<.010	<.01	--	--	163	--	--
NEW RIVER-CAVE CREEK										
A-04-02 11ADB	04-10-02	.02	3.50	<.010	<.01	--	--	75	--	--
A-05-02 03DCB	04-11-02	.02	5.00	<.010	<.01	38	--	150	--	--
A-06-04 26DCC	04-05-02	.01	4.00	<.010	<.01	--	--	94	--	--
RANEGRAS PLAIN										
B-03-14 11DDC	04-30-02	<.01	5.50	<.010	<.01	--	--	804	--	--
B-05-15 06ACB	05-01-02	<.01	6.30	<.010	<.01	--	--	1560	--	--
SALT RIVER VALLEY										
A-01-01 11ADD	09-18-02	<.01	8.00	<.010	<.01	<4	93.0	459	6	<2
A-01-02 13CDD2	09-20-02	<.01	2.80	<.010	.02	6	83.0	486	<1	<2
A-01-02 14AAD	09-25-02	<.01	3.10	<.010	.02	8	67.0	370	19	<2
A-01-02 24BBB2	09-25-02	<.01	5.50	<.010	.01	5	110	470	1	<2
A-01-02 31AAA	09-11-02	<.01	13.0	<.010	.03	8	43.0	1340	2	<2
A-01-03 18BBD	09-20-02	<.01	3.30	<.010	.02	8	61.0	339	<1	<2
A-01-05 30BBA	09-12-02	<.01	4.50	<.010	<.01	<4	51.0	217	6	<2
A-02-01 26DAA	09-18-02	<.01	25.0	<.010	<.01	<4	150	134	14	<2
A-02-06 27CAC	09-19-02	<.01	.57	<.010	.01	7	41.0	135	<1	<2
B-01-01 28CDC	09-13-02	<.01	11.0	<.010	.02	<4	49.0	1440	2	<2
B-01-01 29CAD	09-23-02	<.01	8.10	<.010	.05	7	40.0	1200	4	<2
B-01-01 30DBB	09-23-02	<.01	10.0	<.010	.06	8	42.0	1500	4	<2
B-01-02 25BBC2	04-23-02	.01	3.10	<.010	<.01	--	--	726	--	--
B-01-02 27DAD	09-13-02	<.01	18.0	<.010	.03	4	40.0	2270	8	<2
B-01-02 29CCC	09-13-02	<.01	20.0	<.010	.01	7	36.0	2090	8	<2
D-01-05 04CCC2	09-19-02	<.01	.60	<.010	<.01	11	56.0	126	14	<2
D-01-05 23BDA	09-17-02	<.01	3.30	<.010	<.01	8	43.0	178	16	<2
D-01-06 08DDD	09-17-02	<.01	4.40	<.010	<.01	7	3.2	149	17	<2
D-01-10 35DBC	04-12-02	.02	1.30	<.010	.02	--	--	52	--	--
SAN FRANCISCO PEAKS										
A-22-05 16DBC	06-25-02	<.01	.37	<.010	.05	--	--	11	--	--

WATER-QUALITY DATA-CONTINUED

Local ident- i- fier	Date	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
AGUA FRIA BASIN										
A-09-02 27CBB1	05-28-02	189	--	--	15	--	--	--	--	2
A-11-02 25BDD	05-30-02	4	--	--	1	--	--	--	--	16
A-12-01 26DAD2	05-31-02	17	--	--	1	--	--	--	--	98
B-14-01 14ACC	05-31-02	<2	--	--	<1	--	--	--	--	<2
COLORADO RIVER, HOOVER DAM TO IMPERIAL DAM										
B-04-19 29BCB1	04-30-02	11	--	--	4	--	--	1120	--	103
GILA BEND BASIN										
C-04-04 04DAA	05-02-02	4	--	--	<1	--	--	--	--	<2
C-05-04 31ADD	05-02-02	11	--	--	<1	--	--	--	--	<2
GILA RIVER FROM PAINTED ROCK DAM TO TEXAS HILL										
C-04-11 21BCB	05-01-02	2	--	--	<1	--	--	--	--	2
C-07-13 24ADA2	05-01-02	16	--	--	1	--	--	--	--	4
C-11-06 24ACA	04-29-02	4	--	--	<1	--	--	--	--	<2
HARQUAHALA PLAINS										
C-01-09 05CCC	05-03-02	9	--	--	1	--	--	--	--	<2
HASSAYAMPA BASIN										
B-09-06 02DCD	05-02-02	<2	--	--	<1	--	--	--	--	20
LOWER HASSAYAMPA										
B-02-06 29BAB	04-04-02	8	--	--	<1	--	--	--	--	<2
LOWER SANTA CRUZ BASIN										
D-06-04N04ABB	05-29-02	2	--	--	<1	--	--	--	--	<2
D-07-04W01DAD	05-31-02	<2	--	--	<1	--	--	--	--	<2
D-07-06 29DDD2	05-29-02	7	--	--	<1	--	--	--	--	7
D-09-07 02CDD	05-30-02	2	--	--	<1	--	--	--	--	<2
D-09-07 03ADD	05-30-02	<2	--	--	<1	--	--	--	--	<2
D-10-10 05DAD	05-31-02	4	--	--	<1	--	--	--	--	<2
D-11-11 35DDD	05-06-02	<2	--	--	<1	--	--	--	--	<2
MCMULLEN VALLEY										
B-07-09 11AAA	04-29-02	<2	--	--	<1	--	--	--	--	5
NEW RIVER-CAVE CREEK										
A-04-02 11ADB	04-10-02	<2	--	--	<1	--	--	--	--	<2
A-05-02 03DCE	04-11-02	<2	--	--	<1	--	--	--	--	9
A-06-04 26DCC	04-05-02	<2	--	--	<1	--	--	--	--	8
RANEGRAS PLAIN										
B-03-14 11DDC	04-30-02	3	--	--	3	--	--	--	--	8
B-05-15 06ACE	05-01-02	2	--	--	3	--	--	1730	--	4
SALT RIVER VALLEY										
A-01-01 11ADD	09-18-02	4	<2	157	<1	<2	<4	2550	10	<2
A-01-02 13CDD2	09-20-02	<2	<2	155	81	<2	<4	640	5	<2
A-01-02 14AAD	09-25-02	<2	<2	128	<1	<2	<4	520	6	<2
A-01-02 24BBB2	09-25-02	4	<2	146	4	<2	<4	810	5	<2
A-01-02 31AAA	09-11-02	<2	<2	284	<1	<2	<4	960	7	<2
A-01-03 18BBD	09-20-02	<2	<2	122	<1	<2	<4	490	6	<2
A-01-05 30BBA	09-12-02	4	<2	130	<1	<2	<4	1200	4	<2
A-02-01 26DAA	09-18-02	6	<2	56	<1	<2	<4	3080	10	<2
A-02-06 27CAC	09-19-02	4	<2	103	<1	<2	<4	430	6	<2
B-01-01 28CDC	09-13-02	4	<2	316	<1	<2	<4	2990	12	<2
B-01-01 29CAD	09-23-02	<2	<2	202	<1	3	<4	2120	12	2
B-01-01 30DBB	09-23-02	<2	<2	148	<1	4	<4	2360	14	<2
B-01-02 25BBC2	04-23-02	4	--	--	<1	--	--	--	--	<2
B-01-02 27DAD	09-13-02	<2	<2	194	<1	2	<4	4500	16	<2
B-01-02 29CCC	09-13-02	<2	<2	185	2	4	<4	3290	24	<2
D-01-05 04CCC2	09-19-02	8	<2	119	<1	<2	<4	570	13	<2
D-01-05 23BDA	09-17-02	4	<2	160	<1	2	<4	750	12	<2
D-01-06 08DDD	09-17-02	7	<2	109	<1	<2	<4	100	14	<2
D-01-10 35DBC	04-12-02	2	--	--	<1	--	--	--	--	101
SAN FRANCISCO PEAKS										
A-22-05 16DBC	06-25-02	<2	--	--	<1	--	--	--	--	36

QUALITY OF WATER IN SELECTED WELLS IN GROUND-WATER AREAS IN ARIZONA
WATER-QUALITY DATA--CONTINUED

Local ident- i- fier	Station number	Date	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)
UPPER SANTA CRUZ BASIN									
D-11-14 32CCC2	322530110563101	05-06-02	7.5	257	22.0	83	24.0	5.70	1.50
D-12-12 16DDD	322252111065001	05-07-02	7.7	355	25.0	110	36.0	5.40	1.90
D-19-13 29CBB2	314448111023301	05-09-02	7.7	883	19.0	290	93.0	15.0	3.00
D-19-17 17BBD	314719110383001	05-10-02	8.3	335	19.0	29	11.0	.36	1.00
D-22-13 34ADD UNSURV	312818110594501	05-09-02	7.2	641	18.0	230	74.0	12.0	3.20
D-23-17 14CDD	312538110351601	05-08-02	7.9	309	20.5	130	41.0	7.00	1.80
D-24-14 05ADB2	312223110554201	05-09-02	6.8	570	19.5	210	65.0	11.0	3.60
UPPER VERDE RIVER									
A-13-05 04BBA	343313111495701	06-25-02	7.5	602	21.0	250	46.0	34.0	4.20
A-13-05 27DCD1	342856111482701	06-24-02	7.4	1000	18.0	420	75.0	56.0	4.30
A-14-05 01BCD	343811111463301	06-26-02	7.1	830	20.5	340	81.0	34.0	5.50
A-15-03 12CDC	344213111591101	06-27-02	7.5	594	22.0	260	40.0	40.0	1.80
A-15-04 02BCA1	344337111535701	06-28-02	6.9	1240	21.0	540	134	49.0	6.10
A-16-02 12CAD2	344642112052001	06-27-02	7.2	795	27.0	370	90.0	35.0	1.70
A-16-03 34ADC	344428112004801	06-27-02	7.3	577	21.0	270	59.0	29.0	1.90
A-17-06 08BDC	345212111452001	06-26-02	7.7	314	17.0	150	35.0	16.0	1.10
A-18-07 15CCC2	345616111385401	06-26-02	8.1	269	11.0	130	26.0	15.0	1.10
WESTERN MEXICAN DRAINAGE									
C-17-05 17ACB UNSURV	315655112480301	04-29-02	7.9	745	32.5	110	27.0	11.0	4.30
YUMA									
C-08-22 28CCC	324158114314501	04-30-02	7.7	3380	22.0	530	123	53.0	6.10
C-10-24 12BCC	323430114405801	04-30-02	7.7	2320	25.0	530	142	43.0	5.40

QUALITY OF WATER IN SELECTED WELLS IN GROUND-WATER AREAS IN ARIZONA

WATER-QUALITY DATA--CONTINUED

Local ident- i- fier	Date	SODIUM AD- SORP- TION RATIO (00931)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	BROMIDE DIS- SOLVED (MG/L AS BR) (71870)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
UPPER SANTA CRUZ BASIN										
D-11-14 32CCC2	05-06-02	1	21.0	100	--	5.60	.3	31.0	12.0	168
D-12-12 16DDD	05-07-02	1	28.0	119	--	15.0	.4	31.0	25.0	226
D-19-13 29CBB2	05-09-02	2	79.0	237	--	29.0	.5	39.0	170	583
D-19-17 17BBD	05-10-02	5	66.0	114	--	3.20	.6	15.0	41.0	207
D-22-13 34ADD UNSURV	05-09-02	1	41.0	217	--	26.0	.4	33.0	60.0	387
D-23-17 14CDD	05-08-02	.5	13.0	138	--	5.10	.4	25.0	8.20	190
D-24-14 05ADB2	05-09-02	1	36.0	178	--	24.0	.3	39.0	45.0	352
UPPER VERDE RIVER										
A-13-05 04BBA	06-25-02	.8	30.0	255	--	15.0	.7	81.0	40.0	405
A-13-05 27DCD1	06-24-02	1	58.0	288	--	41.0	.2	45.0	180	636
A-14-05 01BCD	06-26-02	1	43.0	374	--	33.0	.4	29.0	12.0	465
A-15-03 12CDC	06-27-02	.7	27.0	269	--	22.0	.4	63.0	15.0	373
A-15-04 02BCA1	06-28-02	1	73.0	586	--	52.0	.4	16.0	25.0	714
A-16-02 12CAD2	06-27-02	.6	28.0	238	--	23.0	.2	21.0	150	501
A-16-03 34ADC	06-27-02	.4	16.0	241	--	31.0	.2	21.0	7.70	314
A-17-06 08BDC	06-26-02	.2	5.3	155	--	3.60	<.1	18.0	2.20	175
A-18-07 15CCC2	06-26-02	.2	6.0	128	--	4.90	<.1	20.0	3.80	159
WESTERN MEXICAN DRAINAGE										
C-17-05 17ACB UNSURV	04-29-02	5	120	151	--	86.0	2.1	63.0	54.0	478
YUMA										
C-08-22 28CCC	04-30-02	10	520	254	--	740	.8	25.0	360	1990
C-10-24 12BCC	04-30-02	5	290	214	--	450	.3	25.0	310	1390

Remark codes used in this report:
 < -- Less than

QUALITY OF WATER IN SELECTED WELLS IN GROUND-WATER AREAS IN ARIZONA
WATER-QUALITY DATA--CONTINUED

Local ident- i- fier	Date	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	ORTHO- PHOS- PHATE, DIS- SOLVED (MG/L AS P) (00671)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)
UPPER SANTA CRUZ BASIN										
D-11-14 32CCC2	05-06-02	<.01	1.50	<.010	.02	--	--	18	--	--
D-12-12 16DDD	05-07-02	<.01	2.70	<.010	<.01	--	--	34	--	--
D-19-13 29CBB2	05-09-02	<.01	2.70	<.010	.03	--	--	118	--	--
D-19-17 17BBD	05-10-02	<.01	<.02	<.010	<.01	--	--	251	--	--
D-22-13 34ADD UNSURV	05-09-02	.04	1.70	<.010	.04	--	--	77	--	--
D-23-17 14CDD	05-08-02	<.01	1.10	<.010	<.01	--	--	17	--	--
D-24-14 05ADB2	05-09-02	<.01	4.50	<.010	.34	--	--	66	--	--
UPPER VERDE RIVER										
A-13-05 04BBA	06-25-02	<.01	.20	<.010	.02	--	--	199	--	--
A-13-05 27DCD1	06-24-02	<.01	.71	<.010	.05	--	--	297	--	--
A-14-05 01BCD	06-26-02	<.01	.50	<.010	.03	--	--	536	--	--
A-15-03 12CDC	06-27-02	<.01	.50	<.010	.02	--	--	158	--	--
A-15-04 02BCA1	06-28-02	<.01	1.60	<.010	.02	--	--	545	--	--
A-16-02 12CAD2	06-27-02	<.01	2.20	<.010	.02	--	--	144	--	--
A-16-03 34ADC	06-27-02	<.01	.86	<.010	.01	--	--	49	--	--
A-17-06 08BDC	06-26-02	<.01	.12	<.010	.01	--	--	14	--	--
A-18-07 15CCC2	06-26-02	<.01	1.20	<.010	.02	--	--	8	--	--
WESTERN MEXICAN DRAINAGE										
C-17-05 17ACB UNSURV	04-29-02	<.01	4.40	<.010	<.01	--	--	433	--	--
YUMA										
C-08-22 28CCC	04-30-02	.11	.84	.010	.06	--	--	721	--	--
C-10-24 12BCC	04-30-02	.18	<.02	<.010	<.01	--	--	271	--	--

Remark codes used in this report:
 < -- Less than

QUALITY OF WATER IN SELECTED WELLS IN GROUND-WATER AREAS IN ARIZONA

WATER-QUALITY DATA--CONTINUED

Local ident- i- fier	Date	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
UPPER SANTA CRUZ BASIN										
D-11-14 32CCC2	05-06-02	2	--	--	<1	--	--	--	--	<2
D-12-12 16DDD	05-07-02	<2	--	--	<1	--	--	--	--	<2
D-19-13 29CBB2	05-09-02	3	--	--	<1	--	--	--	--	15
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YUMA										
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CONVERSION FACTORS

Multiply	By	To obtain
<i>Length</i>		
inch (in.)	2.54×10^1	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^0	kilometer
<i>Area</i>		
acre	4.047×10^3	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi ²)	2.590×10^0	square kilometer
<i>Volume</i>		
gallon (gal)	3.785×10^0	liter
	3.785×10^0	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^3	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft ³)	2.832×10^1	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic-foot-per-second day [(ft ³ /s) d]	2.447×10^3	cubic meter
	2.447×10^{-3}	cubic hectometer
acre-foot (acre-ft)	1.233×10^3	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
<i>Flow</i>		
cubic foot per second (ft ³ /s)	2.832×10^1	liter per second
	2.832×10^1	cubic decimeter per second
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^1	cubic decimeter per second
	4.381×10^{-2}	cubic meter per second
<i>Mass</i>		
ton (short)	9.072×10^{-1}	megagram or metric ton

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$\text{°F} = (1.8 \times \text{°C}) + 32$$