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 SW1/4NW1/4 sec. 30, T.6 S., R.21 W., Gila and Salt River meridian, Yuma County, Hydrologic Unit 15030104; the California end is in NW1/4SW1/4 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 mi^2, approximately, including 3,959 mi^2 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 RECORD-1934-2003.--Maximum discharge, 40,800 ft^3/s Sept. 5, 1939; minimum, 538 ft^3/s Aug. 3, 1934; minimum daily since regulation of Hoover Dam began, 1,450 ft^3/s Feb. 17, 1935.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7470	5020	5280	3460	5030	6850	9300	7320	8890	9810	8760	8050
2	8020	4820	5900	3870	5640	6550	8930	8670	9050	8940	9740	8290
3	6600	4810	5360	3670	5460	6550	8490	8870	8640	8400	10100	7230
4	7440	4810	5100	4840	5520	6590	10000	9290	7630	8920	8640	6500
5	7270	4920	4390	4950	5350	6850	10400	9740	7320	9390	8480	7090
6	7740	5080	4020	4150	4980	6100	10400	10000	8710	10000	7500	7850
7	7790	4400	5040	3730	6140	6830	10600	8530	8590	9930	6720	8480
8	7500	4920	4800	3140	6170	6660	10100	7930	9150	9870	7460	8180
9	7210	4960	4010	3160	6080	6990	9110	9660	9050	9060	7900	7920
10	6720	5240	3450	3220	5810	7290	8500	10200	8920	8680	9140	7640
11	7130	5540	3240	3350	5550	7740	10200	11000	8000	9710	8720	6910
12	7730	5260	3380	3180	5740	7600	10600	9530	7620	10200	7760	7630
13	7650	5070	3530	3680	4000	6740	11200	8730	9050	10100	6060	8320
14	7500	4690	3460	3640	3190	8140	10300	7600	9210	10900	4930	8210
15	7070	5380	3490	3750	3290	9260	9940	7230	9450	10600	6610	8260
16	6260	5750	3380	3700	3790	9330	8940	9020	9700	9340	6800	8150
17	6330	5890	3530	4950	3660	9550	8450	9430	9250	9020	7750	7510
18	6570	6260	3660	5180	3320	9270	10100	9410	8300	10100	7590	6790
19	6620	6440	3570	5280	3410	8240	10600	9530	7640	10400	7770	6700
20	6440	5730	4540	5290	3670	7110	10600	9340	8950	10500	7460	7120
21	6580	5140	4990	4980	3080	8960	10400	8130	9450	10200	7000	7600
22	6860	5380	5150	5050	3060	10300	9740	7780	9570	9960	8050	7760
23	6750	5300	5250	4520	4710	10800	8390	9530	9590	8480	7990	7770
24	5640	4380	3900	5390	5740	10400	7400	9800	9160	8320	8240	7440
25	5750	3450	2930	5420	4470	9280	9670	9810	8460	9270	8040	7210
26	6380	3420	3300	5510	5840	7840	10000	9580	7790	10200	7750	7820
27	5260	3420	4190	5310	6110	7670	9730	8960	9250	9400	6800	8060
28	4290	4160	4240	4220	6840	9620	9060	8170	9660	9280	6640	8090
29	4840	4080	3960	3920	---	10200	8600	7560	9900	8890	7540	8380
30	5180	4720	3880	3790	---	10200	7540	8420	9860	7990	7870	8260
31	4640	---	3170	4690	---	10200	---	8400	---	7780	7850	---
TOTAL	205230	148440	128090	132990	135650	255710	287290	277170	265810	293640	239660	231220
MEAN	6620	4948	4132	4290	4845	8249	9576	8941	8860	9472	7731	7707
MAX	8020	6440	5900	5510	6840	10800	11200	11000	9900	10900	10100	8480
MIN	4290	3420	2930	3140	3060	6100	7400	7230	7320	7780	4930	6500
AC-FT	407100	294400	254100	263800	269100	507200	569800	549800	527200	582400	475400	458600
(*)	8746	8536	2516	6375	9125	6381	8368	8813	7381	5550	8346	6985
(**)	799	536	624	600	625	738	716	776	839	853	676	655

CAL YR 2004 TOTAL 2787480 MEAN 7616 MAX 12200 MIN 2930 AC-FT 5529000 (**) 9390
WTR YR 2005 TOTAL 2600900 MEAN 7126 MAX 11200 MIN 2930 AC-FT 5159000 (**) 8440

(*) Monthend contents, in acre-feet, for Senator Wash Reservoir
(**) Diversions, in acre-feet, to Mittry Lake Diversion (09522400)

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA—CONTINUED

WATER-QUALITY RECORDS

LOCATION.--Water samples collected above trash racks at All-American Canal headworks at west end of Imperial Dam.
PERIOD OF RECORD.--Aug. 1969 to Sept. 1992, Aug. 1996 to Sept. 2000, Aug. 2001 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct. 1969 to Sept. 2000.
WATER TEMPERATURE: Oct. 1974 to Sept. 2000.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum observed, 1,970 microsiemens, Aug. 23, 1977; minimum observed, 866 microsiemens, Sept. 12, 1986.
WATER TEMPERATURE: Maximum observed, 33.0°C, Aug. 20, 1977, Aug. 28, 29, 1981; minimum recorded, 6.5°C Dec. 25, 26, 1990.
INSTRUMENTATION.--Streamflow not gaged by USGS.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instantaneous discharge, cfs (00061)	Turbdty white light, det ang 90+/-30 corrctd NTRU (63676)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Noncarb hardness, wat flt field, mg/L as CaCO3 (00904)	Calcium water, fltrd, mg/L (00915)
DEC													
14...	0845	3030	3.1	769	6.2	62	8.2	1420	15.5	15.5	400	210	102
APR													
26...	0830	8060	9.0	760	6.3	71	8.1	1160	21.0	21.0	340	200	87.3
JUL													
27...	0800	6810	4.9	756	6.8	91	8.0	1230	27.0	30.0	360	230	90.8
AUG													
30...	0820	6180	38	752	5.5	74	7.9	1220	27.0	30.0	360	220	89.7

Date	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, fltrd, mg/L (00925)	Magnesium, water, unfltrd recoverable, mg/L (00927)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt Gran, field, mg/L as CaCO3 (29802)	Bicarbonate, wat flt Gran titr., field, mg/L (63786)	Carbonate, wat flt Gran titr., field, mg/L (63788)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)
DEC													
14...	95.2	35.6	32.3	5.67	3	158	195	237	<1	147	.5	330d	898
APR													
26...	90.9	30.0	30.9	5.05	3	116	137	167	<1	104	.4	281	706
JUL													
27...	90.4	33.1	33.5	5.33	3	127	135	165	<1	113	.5	294	747
AUG													
30...	86.9	33.6	34.3	5.18	3	118	141	172	<1	112	.4	295	740

Date	Residue water, fltrd, tons/acre-ft (70303)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Total nitrogen, water, unfltrd mg/L (00600)	Phosphorus, water, unfltrd mg/L (00665)	E coli, m-TEC MF, water, col/100 mL (31633)	Antimony, water, fltrd, ug/L (01095)	Antimony, water, unfltrd ug/L (01097)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)
DEC													
14...	1.30	953	<10	.23	E.02n	.21	.44	<.02	52k	.21	E.2n	2.5	2
APR													
26...	1.01	741	17	.23	<.04	.33	.56	.02	5k	.35	.3	2.3	2
JUL													
27...	1.08	797	<10	.24	<.04	.26	.51	E.02n	8k	.33	.4	2.5	E1n
AUG													
30...	1.08	793	28	.26	<.04	.26	.52	.03	27	.37	.4	2.4	2.6oc

Date	Barium, water, unfltrd recoverable, ug/L (01007)	Beryllium, water, fltrd, ug/L (01010)	Beryllium, water, unfltrd recoverable, ug/L (01012)	Boron, water, unfltrd recoverable, ug/L (01022)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recoverable, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, fltrd, ug/L (71890)
DEC													
14...	128	<.06	<.06	202	E.03n	E.03n	<.8	1.7	7.0	<.08	.20	17	.02
APR													
26...	141	<.06	<.06	150	E.02n	E.03n	<.8	1.3	3.3	<.08	.56	36	<.01
JUL													
27...	159	<.06	<.06	166d	<.04	E.03n	<.8	2.1	1.6	<.08	.38	35	.01
AUG													
30...	147	<.06	<.06	182d	E.02n	E.03n	.34oc	3.3	1.8	.10	.54	34	<.01

Date	Mercury water, unfltrd recover -able, ug/L (71900)	Selen-ium, water, unfltrd ug/L (01147)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
DEC							
14...	.01	1.8	1.6	3	90	50	409
APR							
26...	<.01	2.5	1.6	3	94	40	870
JUL							
27...	<.01	2.3	8.6	2	90	24	441
AUG							
30...	E.01n	1.4	26.0	5	97	73	1220

Remark codes used in this table:
< -- Less than.
E -- Estimated.

Value qualifier codes used in this table:
c -- See laboratory comment
d -- Diluted sample: method hi range exceeded
k -- Counts outside acceptable range
n -- Below the LRL and above the LT-MDL
o -- Result determined by alternate method