

09522500 GILA GRAVITY MAIN CANAL AT IMPERIAL DAM, AZ-CA

Lower Colorado Basin
Lower Colorado Subbasin

LOCATION.--Lat 32°52'34", long 114°27'18" referenced to North American Datum of 1927, in SE ¼ SW ¼ sec.30, T.6 S., R.21 W., Yuma County, AZ, Hydrologic Unit 15030107, Gila and Salt River meridian, on left bank 0.8 mi downstream from intake at east end of Imperial Dam.

SURFACE-WATER RECORDS

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

GAGE.--(New Gaging Station) A Design Analysis H-522+ Data Collection Platform (DCP) with internal GOES Transmitter collects gage-height data at fifteen minute intervals. The DCP is connected to an H-331 Shaft Encoder, driven by a graduated float-tape. The encoder is the primary stage sensor. A Design Analysis H-424-MS Radio Transceiver (the slave radio) transmits gage-height data to the Imperial Irrigation District control house, where the master radio is located.

Equipment is housed in a 2 ft x 2 ft x 2 ft steel half-shelter mounted over a concrete stilling well located on the left bank of the canal. The gage is on the upstream side of the flume, about 0.8 mi downstream from the gates at Imperial Dam. A Wire-Weight Gage, mounted at the end of the walkway just upstream of the gage/well, is used as the outside reference. The check bar is set at 23.43 ft. Gila Gravity users mounted a sloping staff, calibrated to read discharge (ft³/sec), on the left bank between the gage/well and the walkway. Discharge measurements are made from a bank-operated pulley system located at the gage.

(Old Gaging Station) A Data collection platform with satellite telemetry and a 15 minute recording interval is driven by an encoder (water-stage sensor) operated by a graduated float-tape. Equipment is housed in a celotex lined sheet-iron half shelter mounted over a concrete stilling well on the right bank of the canal about 3,200 ft downstream from gates at Imperial Dam. The reference is an outside staff gage, which is located directly under the walkway on the west side of the stilling well. It reads from 3.36 ft to 20.34 ft. An inside staff gage, located inside the stilling well, is constructed of standard enamel sections mounted on a one by six. It reads from 3.36 ft to 23.74 ft, at a point near the top of the well.

Well is a concrete stilling well with inside dimensions of 1.60 ft x 3.45 ft, sitting on a 4.0 ft square concrete footing 0.75 ft thick. Well is 22 ft high not including the shelter. There are three 2 inch galvanized iron intake pipes at gage-heights of 4.8 ft, 6.8 ft and 9.0 ft. The well has no cleanout doors.

Cableway is located 50 ft above the gage. Cable is 0.88 inch galvanized plow-steel tramway with a span of 98.5 ft. The cable is marked at 5 ft intervals using the Arizona District system, with initial point at the right pull point. A sit down cable car is locked to the right bank, 5.5 ft, A-frame. Left bank is supported from a 3 ft concrete wedge portion of the deadman.

Discharge measurements can be made from the cableway or at a location just upstream of the bridge to Hidden Shores RV Village, about 300 ft downstream of the gates at Imperial Dam.

REMARKS.--Record is rated good except those discharges below 500 ft³/sec which are rated fair. Gila Gravity Main Canal diverts water from Colorado River at Arizona abutment of Imperial Dam for irrigation of lands in the Gila Project area in Arizona. Diversions to this canal began August 17, 1943. Diversions to North Gila Valley from this canal began December 16, 1954.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge of 2,240 ft³/sec on May 25, 1965; no flow at canal intake at times in several years when intake gates were closed.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2,100 ft³/sec, May 20; minimum daily discharge, 95 ft³/sec, December 18.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1,470	636	221	292	244	453	1,540	1,360	1,360	1,590	839	1,360
2	1,450	374	268	459	888	1,130	1,650	819	1,400	1,490	491	1,560
3	1,180	1,080	272	432	911	1,350	1,290	532	1,530	1,180	1,510	1,540
4	902	843	474	290	962	1,530	773	1,480	1,660	516	1,510	1,280
5	721	1,120	169	768	981	1,210	551	1,570	1,280	570	1,450	1,040
6	1,310	958	217	883	684	844	1,400	1,680	948	1,700	1,530	921
7	1,280	725	238	834	469	473	1,430	1,540	365	1,760	1,620	1,310
8	1,280	691	286	566	269	308	1,350	1,400	1,680	1,710	908	1,320
9	1,270	334	238	544	673	1,130	1,440	928	1,700	1,710	504	1,340
10	936	990	309	442	371	1,070	1,290	454	1,640	1,700	1,540	1,180
11	748	1,050	276	334	362	1,120	714	1,700	1,470	956	1,810	1,200
12	469	929	294	936	335	1,430	575	1,840	1,230	707	1,840	980
13	1,140	842	345	884	355	909	1,640	1,880	742	1,550	1,640	1,210
14	1,310	689	353	879	322	786	1,760	1,690	502	1,740	1,630	1,380
15	1,370	517	865	774	267	573	1,390	1,420	1,470	1,630	872	1,440
16	1,250	320	569	598	681	1,510	1,440	768	1,570	1,650	707	1,380
17	1,010	1,170	210	381	695	1,650	1,340	632	1,430	1,480	1,510	1,790
18	694	1,030	95	340	773	1,760	855	1,470	1,590	1,100	1,590	1,430
19	479	997	138	790	940	1,750	619	1,820	1,350	885	1,660	1,110
20	1,070	640	161	987	599	857	1,400	2,100	725	1,780	1,760	735
21	1,080	708	158	980	480	597	1,440	1,860	451	1,710	1,420	1,390
22	1,170	511	268	808	304	449	1,630	1,620	1,770	1,800	835	1,410
23	1,110	422	231	690	991	1,420	1,640	882	1,550	1,780	533	1,550
24	842	950	104	469	1,080	1,700	1,590	524	1,500	1,510	1,590	1,300
25	542	908	121	403	1,060	1,780	926	1,630	1,500	623	1,650	1,020
26	422	820	422	941	943	1,630	625	1,590	1,480	521	1,840	838
27	1,310	152	197	912	758	1,020	1,560	1,780	800	1,350	1,600	836
28	1,140	99	228	957	566	801	1,630	1,650	561	1,590	1,380	1,490
29	1,120	198	467	842	---	451	1,770	1,540	1,580	1,600	785	1,440
30	1,110	245	422	756	---	1,570	1,730	794	1,540	1,660	659	1,410
31	935	---	606	536	---	1,350	---	501	---	1,400	1,160	---
Total	32,120	20,948	9,222	20,707	17,963	34,611	38,988	41,454	38,374	42,948	40,373	38,190
Mean	1,036	698	297	668	642	1,116	1,300	1,337	1,279	1,385	1,302	1,273
Max	1,470	1,170	865	987	1,080	1,780	1,770	2,100	1,770	1,800	1,840	1,790
Min	422	99	95	290	244	308	551	454	365	516	491	735
Ac-ft	63,710	41,550	18,290	41,070	35,630	68,650	77,330	82,220	76,110	85,190	80,080	75,750

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2009, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	830	630	481	461	676	911	1,155	1,259	1,356	1,366	1,251	1,140
Max	1,281	1,008	814	747	1,058	1,377	1,643	1,857	1,873	1,918	1,975	1,742
(WY)	(1988)	(1988)	(1991)	(2002)	(1971)	(1976)	(1970)	(1966)	(1963)	(1971)	(1974)	(1987)
Min	56.2	61.9	66.8	46.8	69.9	74.9	113	77.5	96.8	102	89.7	93.2
(WY)	(1944)	(1945)	(1944)	(1949)	(1945)	(1944)	(1944)	(1944)	(1944)	(1944)	(1944)	(1944)

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SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1943 - 2009	
Annual total	379,225		375,898			
Annual mean	1,036		1,030		962	
Highest annual mean					1,312	1971
Lowest annual mean					87.6	1944
Highest daily mean	1,910	May 6	2,100	May 20	2,240	May 25, 1965
Lowest daily mean	95	Dec 18	95	Dec 18	0.00	Feb 10, 1947
Annual seven-day minimum	165	Dec 18	165	Dec 18	0.00	Nov 16, 1964
Annual runoff (ac-ft)	752,200		745,600		696,900	
10 percent exceeds	1,630		1,660		1,750	
50 percent exceeds	1,060		991		943	
90 percent exceeds	330		334		190	

