# SALT RIVER AT PRIEST DRIVE
# FCD GAGE ID# 67307

## STATION DESCRIPTION

**LOCATION** – The gage is located at the Priest Drive crossing of the Salt River in the city of Tempe. Gaging equipment is located on the left bank side. Latitude N 33° 26' 03.4", Longitude W 111° 57' 41.0". Located in S17 T1N R4E in the Tempe 7.5-minute quadrangle.

**ESTABLISHMENT** – Gaging was established on December 7, 1993.

**DRAINAGE AREA** – The drainage area is approximately 12,914 $mi^2$.

**GAGE** – The gage is a non-submersible pressure transducer type instrument connected with an orifice line in the river channel. The orifice is at elevation 2.60 feet gage height (USGS datum).

There is no crest gage at this location.

There are staff gages at this location, located near both orifice lines in the river channel.

**ZERO GAGE HEIGHT** – Zero is defined as 0.00 feet on the staff gages, currently below the current channel bottom. It is equivalent to 1,121.809 feet NAVD88, levels of February 27, 2019.

**HISTORY** – Several discharge measurements were made from the bridge during the January 1993 flood events. Gaging established on December 7, 1993. Due to the presence of a significant amount of water in the channel, the level-loop survey of February 27, 2019 only tied BM-4523 to RM-3, and the newly created reference points (RP-1, RP-2, and RP-3.)

**REFERENCE MARKS** –

BM-4523 is an FCDMC brass cap located at the top of the downstream left bank near the station house. It is at elevation 31.841 feet gage height and 1,153.650 feet NAVD88, levels of February 27, 2019.

RM-1 is the high point on 5/8-inch bolt on downstream side of third bridge pier from left bank. Same pier where outside staff and orifice are attached. Elevation 5.990 feet gage height, levels of December 9, 1993.

RM-2 is a brass cap on top of downstream end of rectangular footing on second bridge pier from left bank. Elevation 4.72 feet gage height, levels of December 9, 1993.

RM-3 is the high point on a 5/8-inch bolt in the left bridge abutment about four feet shoreward from shelter. Elevation 31.680 feet gage height, levels of December 9, 1993.

RP-1 is a chiseled 'X' on the northwest corner of the station house on the left bank. It is at elevation 31.424 feet gage height, levels of February 27, 2019.

RP-2 is a chiseled 'X' on the top of the headwall above the recreation path on the left bank about 20 feet downstream of the Priest Drive bridge. It is at elevation 24.938 feet gage height, levels of February 27, 2019.

RP-3 is a chiseled 'X' on the right side of the recreation path on the left bank about 20 feet downstream of the Priest Drive bridge. It is at elevation 19.404 feet gage height, levels of February 27, 2019.

**CHANNEL AND CONTROL** – The channel is approximately 1,000 feet wide and consists of bedrock with numerous boulder, cobble, and sandbars. It is essentially straight for one mile above, and one mile below the gage. Both right and left banks and parts of the channel have been sculpted from construction.

Low flows are braided between exposed bars, with the present low flow control being a local channel at the gage. At higher flows, all bars are submerged, and the full channel and enclosing banks become the control.

**RATING** – The current rating is Rating #4, developed by the USGS shortly after the 2023 Spring release event and applied by the flood control district after noticing substantial differences in discharge measured between the two organizations.

**DISCHARGE MEASUREMENTS** – Direct measurements can be obtained by wading at low flows or by use of bridge boom from downstream side of Priest Drive bridge. Indirect measurements can be made in a reach about 1,000 feet downstream from the bridge.

**POINT OF ZERO FLOW** – The PZF has changed several times due to channel construction and fluctuations. It is not currently determined.

**FLOODS** – Maximum recorded by gage was 78,850 cfs on February 16, 1995. Higher flows have occurred at this location prior to gage installation.

**REGULATION** – A number of dams upstream on both the Salt and Verde Rivers store water for agricultural and domestic purposes.

**DIVERSIONS** – Granite Reef Diversion Dam, about 15 miles upstream diverts water into the Arizona Canal and the Southern Canal.

**ACCURACY** – Fair for channel control, about 2,000 cfs.

**UPDATE** July 17, 2023
E S Thomas