

# **ACDC AT 67TH AVENUE FCD GAGE ID# 13807 (5523)**

## **STATION DESCRIPTION**

**LOCATION** – The station is located on the 67th Avenue bridge over the Arizona Canal Diversion Channel approximately 1/4 mile south of Greenway Road. Located at Latitude N 33° 37' 17.8", Longitude W 112° 12' 9.6". Located in the SE1/4 NE1/4 S12 T3N R1E in the Glendale 7.5-minute quadrangle.

**ESTABLISHMENT** – June 7, 1990.

**DRAINAGE AREA** – Approximately 86 square miles below Cave Buttes Dam. An additional 191 square miles is regulated by Cave Buttes Dam that limits flows to about 600 cfs through the principle outlet at maximum head.

**GAGE** – The gage is a pressure transducer type instrument. The transducer gage is at the invert of the low flow channel. It is at elevation 0.00 feet gage height, levels of January 17, 2019.

There are four crest stage gages at this site. They are numbered from lowest to highest.

CSG#1 is located in the low flow channel near the transducer gage. The pin elevation is 2.53 feet gage height, levels of January 17, 2019.

CSG#2 is located on the left bank of the channel. It has pin elevation of 8.82 feet gage height, levels of June 5, 2024.

CSG#3 is located on the left bank of the channel. It has pin elevation of 12.71 feet gage height, levels of January 17, 2019.

CSG#4 is located on the left bank of the channel. It has pin elevation of 15.94 feet gage height, levels of January 17, 2019.

There are two staff gages at this location.

A large painted staff gage is visible from the downstream right (north) bank. This gage does not display gage height elevations. Add 2.64 feet to displayed values from this staff gage to obtain an equivalent gage height elevation, levels of January 17, 2019.

A smaller staff plate gage is located on the pier near the gage housing. It displays 0.08 feet high. Subtract 0.08 feet from staff gage readings to get true gage height, levels of January 17, 2019.

**ZERO GAGE HEIGHT** – Zero gage height is defined as the invert of the low flow channel. It is equivalent to 1,189.057 feet NAVD88, levels of January 17, 2019.

**HISTORY** – Established as a float type gage on June 7, 1990. Float replaced by a pressure transducer on May 12, 1992. Four crest-stage gages were installed on November 15, 1996. The PT was moved out of a below grade sump to the center of the low flow channel in March 1999. Former gage location was -0.20 feet gage height. The lowest crest-stage gage was moved to the low flow channel in November 1999. Crest gage 2 was found destroyed in February 2024, and was replaced on June 5, 2024 near the same location but with the pin at a slightly lower elevation.

**REFERENCE MARKS** –

BM-5523 is an FCDMC brass cap located near the southwest corner of the bridge. It is at elevation 27.045 feet gage height and 1,216.102 feet NAVD88, levels of January 17, 2019. It has coordinates Northing 953619.908 and Easting 612925.715.

BM-2 is an Army Corps of Engineers brass cap, AC-89-02-DC, on the SW corner of the bridge by the walkway. It is at elevation 29.131 feet gage height and 1,218.188 feet NAVD88, levels of January 17, 2019.

RM-1 is chiseled 'X' on the concrete deck slab to the left of the low flow channel directly across from the transducer gage. It is at elevation 2.867 feet gage height and 1,191.924 feet NAVD88, levels of January 17, 2019.

RP-1 is the most streamward (toward the right bank), downstream bolt securing the transducer gage pipe. It is at elevation 0.358 feet gage height, levels of January 17, 2019.

RP-2 is the top of the lower brace on the left side of the gage where it bolts to the gage. It is at elevation 4.547 feet gage height, levels of January 17, 2019.

RP-3 is a very faint chiseled 'X' on the same concrete slab as RM-1. It is at elevation 2.862 feet gage height, levels of January 17, 2019.

RP-4 is the top of the cap of the brace pole for crest gage #1. It is at elevation 3.998 feet gage height, levels of January 17, 2019.

**CHANNEL AND CONTROL** – The channel is very wide and flat on the bottom. The channel is the control for all flows. A low flow channel along the left side of the channel controls flows up to about 2.5 feet gage height. Above 2.5 feet the entire channel section below the gage is the control.

**RATING** – The current rating is #6, updated in 07/01/2019 based on 2019 survey

Rating #1's development is unknown. It may be data from the original design. Rating #2 was developed by R.W. Cruft using survey data and HEC-2 model. Rating #3 appears to be an adjustment to Rating #2 to account for the PT being moved. Rating #4 is a modification of Ratings #2 and #3 accounting for real direct discharge data. Rating #5 is an adjustment of Rating #4 when the PT was moved.

**DISCHARGE MEASUREMENTS** – Low flow measurements may be made by wading downstream of the gage up to about 3.5 ft gage height. Higher stage flows possibly could be measured from the downstream side of the 67th Ave. bridge.

**POINT OF ZERO FLOW** – The point of zero flow is at the invert of the concrete low flow channel. The PZF is at 0.00 feet gage height.

**FLOODS** – The peak discharge of record is 5,511 cfs at 8.40 feet gage height and occurred on September 8, 2014. The next highest discharge was 2,966 at 6.75 feet gage height and occurred on August 3, 2005.

**REGULATION** – Cave Buttes Dam regulates flows into Cave Creek, which flows into the ACDC near I-17, to about 600 cfs through its principal outlet.

**DIVERSIONS** – None

**ACCURACY** – Good to fair.

**JUSTIFICATION** – Monitors flows at the end of the ACDC for flow input into New River, the Agua Fria River and the Gila River.

**UPDATE:** June 19, 2024  
DE Gardner