

**ACDC NEAR 43RD AVENUE  
FDC GAGE ID# 11307**

**STATION DESCRIPTION**

**LOCATION** - The gage is located on the north bank of the Arizona Canal Diversion Channel, approximately 1,000 feet northwest of the intersection of Peoria and 43rd Avenues. Located at Latitude N 33° 35' 03"; Longitude W112° 09' 16". Located in SE1/4 SE1/4 S22 T3N R2E in the Glendale 7.5-minute quadrangle.

**ESTABLISHMENT** - The gage was established on November 14, 1990.

**DRAINAGE AREA** – 59.7 mi<sup>2</sup>, below Cave Buttes Dam. 255.3 mi<sup>2</sup> including drainage above Cave Buttes Dam.

**GAGE** - There is one level sensors located at this location. A non-submersible pressure transducer is at elevation 0.95 feet gage height, levels of January 17, 2019.

There are two staff gages at this location, both located opposite the PT gage on the left wall of the channel.

The painted staff gage does not display in gage height, but is approximately 0.5 feet low compared to gage height, levels of January 17, 2019.

The metal staff plate does display in gage height, levels of January 17, 2019. Due to its small size, it is difficult to read from the north bank.

There is one crest stage gage at this location. It has a pin elevation of 1.35 feet gage height, levels of January 17, 2019.

**ZERO GAGE HEIGHT ELEVATION** – Zero gage height is defined as the invert of the channel at the gage cross section. It is equivalent to 1,200.704 feet NAVD88, levels of January 17, 2019.

**HISTORY** – The channel construction was completed in 1990. Float gage installed on November 14, 1990. Float gage replaced with pressure transducer on December 5, 1991. PT was moved to edge of channel from bottom of stilling well on December 17, 1991. Staff gage changed in October 1999 to reflect start at 0.9 feet gage height, rather than 0.0. Datum was changed on October 1, 1999 in the NovaStar database to reflect the change in the staff gage datum. A crest gage was added in 2017.

**REFERENCE MARKS** –

BM-4823 is an FCDMC brass cap located directly in front of the station house on top of the right bank of the channel. It is at elevation 23.863 feet gage height and 1,224.567 feet NAVD88, levels of January 17, 2019. It has coordinates Northing 940094.000, Easting 627646.779.

TBM-4823 is a rebar located about 20 feet southwest of BM-4823. It is at elevation 23.520 feet gage height and 1,224.224 feet NAVD88, levels of January 17, 2019.

RM-1 is a chiseled 'X' on the channel bottom at the staff plate near the left side wall. It is at elevation 0.922 feet gage height and 1,201.626 feet NAVD88, levels of January 17, 2019.

RM-2 is a chiseled 'X' on the channel bottom at the transducer gage near the right side wall. It is at elevation 0.951 feet gage height and 1,201.655 feet NAVD88, levels of January 17, 2019.

RP-1 and RP-2 from previous surveys are no longer valid.

RP-3 is the top of the angle iron on right wall upstream of transducer gage. It is at elevation 2.369 feet gage height, levels of January 17, 2019.

**CHANNEL AND CONTROL** – The channel at the gage is concrete lined with vertical sidewalls. Width of the channel is 110 feet and height of the channel is 20 feet. The channel is the control for all flows.

**RATING** - The current rating is Rating #4 NS table #943. It was developed from a December 2020 survey of the channel. Cross section data collected were used in an HEC-RAS model to develop water surface elevations for given discharges.

**DISCHARGE MEASUREMENTS** – Direct measurements should only be done with caution. Indirect measurements are possible if high water marks are present.

**POINT OF ZERO FLOW** - The PZF is at 0.00 feet gage height and is located in the channel invert.

**FLOODS** – The peak discharge recorded was 5,601 cfs at 6.58 feet gage height on September 8, 2014. The next largest peak was 3,849 cfs at 5.20 feet gage height on August 3, 2005.

**REGULATION** - Inflow into the ACDC is controlled by two dams in the watershed. The largest regulation is Cave Buttes Dam which regulates flows into Cave Creek to approximately 3,000 cfs. Dreamy Draw Dam is a smaller impoundment that also limits inflow.

**DIVERSIONS** - None upstream

**ACCURACY** - Good

**JUSTIFICATION** - Monitor flows into the recreation portions of the ACDC in Glendale, approximately 2 miles downstream. Gage provides flood warning to the Thunderbird Paseo Park. Also provide early warning to inflow that will flow to the New, Agua Fria and Gila Rivers.

**UPDATE** -       December 14, 2023  
                  ES Thomas