

**ACDC NEAR 43RD AVENUE  
FDC GAGE ID# 4823**

**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** - 56 mi<sup>2</sup>, below Cave Buttes Dam. Cave Buttes Dam drainage area not included.

**GAGE** - There is one level sensors located at this location. A non-submersible pressure transducer is at gage height 0.90 feet, levels of February 2, 2000.

There are two staff gages at this location, both located opposite the PT gage on the south side of the channel. The painted staff gage does not read in gage height, but is approximately 0.5 feet low compared to gage height. The metal staff plate does read in gage height, but due to its small size is difficult to read from the north bank.

There is no crest stage gage at this location.

**ZERO GAGE HEIGHT ELEVATION** - Zero gage height is defined as the invert of the channel. Elevation 1,198.52 feet M.S.L.

**HISTORY** - Channel construction 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.

**REFERENCE MARKS**

RP1 - Square chiseled into southeast bridge rail. Elevation = 1,230.28 feet MSL or 31.76 feet gage height.

RP2 - Channel floor at wall by pressure transducer. Elevation = 1,199.42 feet MSL or 0.90 feet gage height.

**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 at or below the 100-year return period.

**RATING** - The current rating is Rating #3, applied since October 1, 1999. Rating #3 is identical to Rating #2 with the change in gage datum from 0.1 to 0.9 feet. Rating #2 was effective October 1,

1996 to September 30, 1999. The rating is from an HEC-RAS model using the variable roughness with water surface elevation option. The rating also included several direct measurements incorporated into the rating. Rating #1 was developed using HEC-2 model.

**DISCHARGE MEASUREMENTS** - At low flows direct measurements could be taken at the gage cross section. Higher flows may be measured using a bridge crane at the downstream side of the 43rd Avenue bridge. The width of the sidewalk over the bridge should be checked for adequacy and feasibility of using a bridge crane.

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

**FLOODS** - August 3, 2005 - 3,849 cfs and 5.20 feet. July 6, 1998 - 2,490 cfs and 3.08 feet; October 6, 1993 - 1,946 cfs and 3.90 feet; January 11, 1993 - 1,781 cfs and 3.70 feet; July 7, 1999 - 1,395 cfs and 1.95 feet; July 15, 1999 - 1,195 cfs and 1.73 feet gage height.

**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 in the ACDC

**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, monitor downstream flows generated from Cave Buttes Dam and Dreamy Draw Dam.

**UPDATE** - August 19, 2010  
DE Gardner