

**EMF AT ARIZONA AVENUE  
FCD GAGE ID# 6598**

**STATION DESCRIPTION**

**LOCATION** – The gage is located on Arizona Avenue (SR 587) approximately three miles south of the Sun Lakes development. The instrumentation is located on the downstream (west) side of the bridge near the center of the channel. Latitude N 33° 10' 7.7", Longitude W 111° 51' 27.5". Located in the NE1/4 SE1/4 S16 T3S R5E, in the Gila Butte 7.5-minute quadrangle.

**ESTABLISHMENT** – The gage was installed February 10, 1989.

**DRAINAGE AREA** – 668 mi<sup>2</sup> (includes Queen Creek drainage.)

**GAGE** – The gage is a pressure transducer type instrument. It is located just inside the bridge crossing near the old stilling well. The PT is at gage height -0.15 feet gage height, levels of March 17, 2015.

There are three staff gages at this location. The first staff gage is painted near the gaging equipment. It reads directly in gage height and can be read from the south bank. A second staff gage is painted on the third pier and is viewable from the north bank. This staff gage reads approximately 0.06 feet higher than actual gage height. At 5 – 6 feet on the staff, the difference is closer to 0.1 feet. The third staff gage is on the upstream side of the bridge and is viewable from the southeast side of the bridge. Subtract 0.3 feet from readings to obtain gage height elevations.

There is one crest stage gage at this location. It is located under the bridge near the PT instrumentation. The CSG pin elevation is at -0.05 feet gage height, levels of March 17, 2015.

**ZERO GAGE HEIGHT** - Zero gage height is defined as zero on the painted staff gage. Elevation 1,210.500 feet NAVD88.

**HISTORY** – No previous history at this location. Float gage (6594) installed February 10, 1989. Float gage replaced with pressure transducer on August 16, 1994. Crest gage installed December 6, 1996. Staff gage painted following initial survey of February 1992. It is uncertain whether the old float gage zero is the same as the current PT zero. PT run was redone in May 2009. In February 2015, the PT conduit was reworked and the PT elevation was adjusted.

## **REFERENCE MARKS** –

BM-6598 is an FCDMC brass cap located on the top of the left bank on the downstream side of the Arizona Avenue bridge. Elevation is 8.620 feet gage height and 1,219.120 feet NAVD88, levels of March 30, 2016.

BM-1 is an ADOT brass cap located at the southwest bridge rail. Elevation = 11.200 feet gage height, or 1,220.809 feet NAVD88, levels of March 30, 2016.

RP-1 is the top of the lower brace on left bank side of stilling well. Elevation is 1.744 feet gage height, or 1,211.859 feet NAVD88, levels of March 30, 2016.

RP-2 is the top of the intake to the stilling well at the gage station. Elevation 2.250 feet gage height and 1,211.353 feet NAVD88, levels of March 30, 2016.

**CHANNEL AND CONTROL** – The channel is a trapezoidal shape with grass lining. The channel passes through the Arizona Avenue bridge at this location. The channel is relatively straight both up and downstream of the gage for several hundred feet both ways.

The channel is the control for all but the lowest stages.

**RATING** – The current rating is Rating #3 dated April 10, 1998. It was developed by R. W. Cruff following a two cross section survey and use of the design slope. An HEC-2 model was developed and run for the current rating. Rating #2 was developed by R. W. Cruff in 1992 from a nine cross section survey and a resulting HEC-2 step backwater model. Rating #1 was developed by S D Waters from an HEC-2 model of surveyed cross sections.

**DISCHARGE MEASUREMENTS** – Discharge measurements can be made by wading the channel at low flows. Higher flows require direct measurement possibly from the Arizona Avenue bridge, or via indirect methods. Measurements from the bridge may not be safe due to the volume and velocity of traffic.

**POINT OF ZERO FLOW** – The PZF is approximately 0.14 feet gage height, levels of March 17, 2015. The PT is below grade and a pool of water forms and no flow occurs below about 0.14 feet gage height.

**FLOODS** – A flood of 5,536 cfs at 4.07 feet gage height, was recorded on January 11, 1993.

**REGULATION** – Several man-made lakes in the Superstition Springs golf course and Leisure World golf course upstream may serve to retain water at low flows. Higher flows are likely unaffected.

**DIVERSIONS** – None known.

**ACCURACY** – Fair to good

**JUSTIFICATION** – Monitor flows in the East Maricopa Floodway at most downstream end of channel and as input just prior to the Gila River.

**UPDATE** – March 31, 2016  
David Gardner