

HARTMAN WASH AT US 60 NR WICKENBURG FCD GAGE ID# 7063

STATION DESCRIPTION

LOCATION - Gage is located on the east end of the upstream side of the US60 highway bridge, approximately 4 miles west of downtown Wickenburg near milepost 104. Latitude N 33° 57' 47" N; Longitude W 112° 49' 40" W. Located in the NW1/4 SE1/4 S15 T7N R6W in the Vulture Peak 7.5-minute USGS quadrangle.

ESTABLISHMENT - The FCD gage was installed in July 1994. The USGS installed their peak flow crest stage gage in 1963.

DRAINAGE AREA - 5.44 mi²

GAGE - The stage gage is a pressure transducer type instrument located on the right bank, upstream side of the US60 highway bridge. The pressure transducer is at gage height 0.05 feet gage height in FCD gage datum and 1.39 feet gage height in USGS gage datum, comparing several surveys from 1994 through 2004.

There are two staff gages at this location. The FCD gage is located in the rightmost culvert on the upstream side of the US60 bridge. The gage reads in gage height, levels of March 31, 2004. To convert to USGS gage datum, add 1.44 feet. A USGS staff gage is located on a post near the upper staff gage, levels of September 27, 2000.

A crest gage was installed about 100 feet upstream of the bridge on the left bank in 1963. A second crest stage gage was installed on January 24, 1996 streamward of the first crest stage gage.

CSG#1 (upper USGS gage) is at gage height 2.004 feet gage height in FCD gage datum and 3.48 feet gage height in USGS gage datum, levels of July 23, 2015.

CSG#2 (lower FCD gage) is at gage height 0.811 feet gage height in FCD gage datum, and 2.28 feet gage height in USGS gage datum, levels of July 23, 2015.

CSG#3 is an FCD crest-stage gage located at the bridge above the pressure transducer location. Elevation 0.788 feet gage height in FCD gage datum and 3.47 feet gage height in USGS gage datum, levels of July 23, 2015.

ZERO GAGE HEIGHT - Zero gage height in FCDMC datum is defined as 0.00 feet on the staff gage in the bridge culvert. USGS gage datum is 2,490.00 feet M.S.L. USGS datum and is 1.44 feet higher than FCDMC datum. Thus, zero gage height in USGS datum

equals -1.44 feet gage height, FCDMC datum, and zero feet gage height FCDMC datum equals 1.44 feet gage height in USGS datum.

HISTORY - The pressure transducer was initially located on the left bank downstream side of the bridge. On January 24, 1996 the gage was moved to its present location. A second crest gage was installed on January 24, 1996. On January 11, 2000, the pin elevation of CSG#2 was raised. The lower crest gage (CSG#2) was raised on September 19, 2000. A third crest-stage gage was installed on June 20, 2006 just above the pressure transducer.

REFERENCE MARKS

RM-HRTMN is an FCDMC brass cap located on the right, upstream bank of the wash, just east of the station housing. Elevation 8.152 feet gage height, levels of July 23, 2015.

CHANNEL AND CONTROL - The gage is located in a culvert. The culvert is the control for all flows through the culverts.

The bridge is comprised of 4, 12-foot wide by 8-foot high concrete box culverts. The culverts lie at a 28-degree skew to the roadway. According to USGS levels of August 29, 1995 the invert elevation at the entrance slopes from 1.78 feet at the left edge to 1.37 feet on the right edge. The outlet invert slopes from 0.97 feet at the left to 0.54 feet on the right. According to levels by RW Cruff on January 24, 1996 the upstream invert slopes from 1.86 feet gage height (USGS datum) on the left to 1.29 feet gage height (USGS datum) on the right at the bridge face. The elevation differences may be due to the bridge skew. Perhaps the USGS levels surveyed the section perpendicular to flow instead of along the bridge face. The culvert bridge was constructed in 1952.

RATING - The current rating for the pressure transducer is Rating #4. The rating was developed from a graphical representation of all USGS water year peaks from 1997 through 2005. It was done as a way to rectify the differences between the USGS data and the FCD data.

DISCHARGE MEASUREMENTS - Direct measurements could be made by wading upstream from the bridge. Indirect methods could be employed with a suitable section.

POINT OF ZERO FLOW - The point of zero flow is -0.14 feet gage height (FCDMC datum) or 1.30 feet gage height (USGS datum), levels of September 27, 2000.

FLOODS - Floods of record: July 30, 2005 - 3,400 cfs and 9.38 feet gage height. August 14, 1967 - 2,600 cfs. There were several other instances of floods with discharges above 1,000 cfs in 1964, 1970, 1971 and 1997.

REGULATION - None known

DIVERSIONS - None known

ACCURACY - Fair

JUSTIFICATION - The crest gage operation is to obtain long-term hydrologic data for use in flood frequency analyses. The PT gage monitors flows as a contribution to Sols Wash in the Wickenburg flood warning program.

UPDATE August 13, 2015
 D E Gardner