

**QUEEN CREEK AT RITTENHOUSE ROAD
FCD GAGE ID #37707**

STATION DESCRIPTION

LOCATION – The gage location is near the intersection of Riggs Road and Rittenhouse Road in the town of Queen Creek. The gaging equipment is located on the upstream, right bank of the new Rittenhouse Road bridge. Latitude N 33° 13' 49.0", Longitude W 111° 35' 38.6". Located in the NE1/4 SE1/4 NW1/4 S25 T2S R7E in the Sacaton NE 7.5-minute USGS quadrangle.

ESTABLISHMENT – Gaging was established September 14, 1993.

DRAINAGE AREA – 236 mi²

GAGE – The recording gage is a pressure transducer type instrument. The PT is at 0.25 feet gage height, levels of August 7th 2023.

There is one staff gage at this location. The staff gage is located directly across from the transducer in the rightmost upstream culvert. Gage displays in gage height, levels of August 26, 2020.

There is one crest stage gage on site, located near the transducer gage. It is at elevation 0.57 feet gage height, levels of January 29, 2025.

ZERO GAGE HEIGHT - is defined as zero feet on the staff gage. It is equal to 1,438.000 feet NAVD88.

HISTORY – Gaging was established on September 14, 1993. Survey for rating done on January 26, 1994. Crest gage installed on July 25, 1997. Gaging equipment removed for construction in April 2000. Gaging equipment including new staff gage installed May 30, 2000 following construction. Gage datum changed as of May 30, 2000. Datum shifted - 2.03 feet from previous datum. Gage removed for construction on May 27, 2014. Gage reinstalled on June 30, 2014, with the transducer moved to the toe of the right bank. Gaging was removed for replacement of the road crossing on September 18, 2019. Gaging was reestablished on the newly constructed bridge on July 22, 2020.

REFERENCE MARKS –

NOTE: All references used prior to bridge construction in 2020 were destroyed. All references are new and not related to any past references.

BM-50377 is an FCDMC brass cap located on the top of the upstream right bank, near the station tube. It is at elevation 13.302 feet gage height and 1,451.302 feet NAVD88, levels of August 26, 2020.

RM-1 is a stake located southeast of the station tube on the top of the upstream right bank. It is at elevation 13.410 feet gage height and 1,451.410 feet NAVD88, levels of August 26, 2020.

RM-2 is a rebar located about 50 feet upstream of the Rittenhouse Road bridge on top of the right bank. It was a project control point used during the construction. It is at elevation 9.576 feet gage height and 1,447.576 feet NAVD88, levels of August 26, 2020.

RP-1 is a chiseled 'X' near the center of the upstream side of the set of culverts. It is at elevation -0.023 feet gage height, levels of August 26, 2020.

RP-2 is a chiseled 'X' at the base of the painted staff gage at the rightmost upstream culvert. It is at elevation 0.000 feet gage height, levels of August 26, 2020.

RP-3 is a chiseled 'X' near the transducer and crest gage. It is at elevation 0.016 feet gage height, levels of August 26, 2020.

CHANNEL AND CONTROL – The gage is located on the upstream side of a set of 11 identical 12-foot by 12-foot culverts which are 72 feet in length. The channel upstream of the gage is relatively straight for several hundred feet. The channel downstream of the gage bends slightly to the north, but is relatively straight approximately 100 feet downstream of the gage. The left bank of the channel is heavily vegetated with very large salt cedar trees. The main channel is vegetated in some locations. The right bank is somewhat vegetated, more so than the main channel but less so than the left bank.

RATING – The current rating is Rating #4, developed after moving the PT. An HEC-RAS analysis from surveyed cross sections was developed.

Previously, rating #3 was developed after the reconstruction of the bridge and created from surveyed cross sections downstream and upstream . An HEC-RAS model was developed from the surveyed cross sections.

Previously, rating #2 was used and developed from surveyed cross sections downstream from and including the Rittenhouse Road bridge. An HEC-RAS model was developed from the surveyed cross sections.

The previous rating was developed by Donaldson in 1994 following gage installation. The rating was developed similarly from surveyed cross sections and an HEC-2 model. The rating was reviewed in 1996 following an event that scoured the channel

approximately one foot. Inclusion of the scour did not alter the rating significantly and thus the original rating was not revised.

DISCHARGE MEASUREMENTS – Low flow discharge measurements could be made by wading the channel. Higher flow measurements from the bridge are not advisable since the bridge is not too wide. An indirect reach has not been identified. Downstream is private property. Permission could be requested and obtained from the Schenpf Farms office on Rittenhouse Road.

POINT OF ZERO FLOW – The PZF is located toward the left side of the culverts and is at - 0.00 feet gage height.

FLOODS – About 827 cfs at 2.25 feet gage height, January 5, 1995.

REGULATION – A large gravel pit is located about 4 miles upstream. A CAP diversion structure is located approximately 5 miles upstream and limits normal flow to approximately 1,200 cfs. Further upstream is Whitlow Ranch Dam.

DIVERSIONS – Whitlow Ranch Dam provides some diversions for irrigation in the Queen Valley area. A large gravel pit is located about 4 miles upstream.

ACCURACY – Fair for all flows.

JUSTIFICATION – Monitor flows in Queen Creek for flood warning for low flow crossings of Queen Creek. Also provides information about inflow into the EMF.

UPDATE - August 03, 2023
E.S. Thomas