OLD CROSSCUT CANAL NEAR MCDOWELL ROAD
FCD GAGE ID# 4707

STATION DESCRIPTION

LOCATION – The gage is located on the Old Cross Cut canal approximately 1/4 mile south of McDowell Road between SR143 and 48th Street. The instrumentation is on the left bank of the channel. Latitude N 33° 27' 54.7"; Longitude W 111° 58' 52.3". Located in the SE1/4 NE1/4 S06 T1N R4E in the Tempe 7.5-minute USGS quad map.

ESTABLISHMENT – The gage was installed July 27, 1994.

DRAINAGE AREA – Undetermined

GAGE – The gage is a pressure transducer type instrument. The diaphragm of the PT is at 0.20 feet gage height, levels of January 16, 2019. Gage height is defined in terms of the staff gage on the right bank wall, with 0.0 feet gage height being the bottom of the toe of the right bank.

There is one staff gage at the gage location. The staff plate displays in feet gage height, in 0.10-foot increments. The staff gage is on the right bank of the channel.

A painted staff gage is located at the access ramp north of the station tube. It is a flood observation location. It displays in gage height of the invert of the channel at that point being zero feet gage height. In terms of the ALERT gage, is displays about 1.1 feet lower than the station gage height.

There are two crest stage gages at this site, both are located on the left wall near the transducer gage.

CSG#1 is the lower gage and has pin elevation of 0.69 feet gage height, levels of January 16, 2019.

CSG#2 is the upper gage and has pin elevation of 4.42 feet gage height, levels of January 16, 2019.

ZERO GAGE HEIGHT - Zero is based on the staff gage and is equivalent to 1,167.013 feet NAVD88, levels of January 16, 2019.

HISTORY – No previous history at this location. Gage established on July 27, 1994. The gage has been moved since installation. Originally the instrumentation was located at the outlet culvert at McDowell Road. The gage was moved downstream to its current location on August 1, 1995. Crest stage gages were installed on October 21, 1996.

REFERENCE MARKS –

BM-4748 is an FCDMC brass cap located on top of the left bank near the station tube. It is at elevation 16.047 feet gage height and 1,183.060 feet NAVD88, levels of January 16, 2019.

RM-1 is a chiseled 'X' on top of the left bank wall near the station tube. It is at elevation 15.986 feet gage height and 1,182.999 feet NAVD88, levels of January 16, 2019.

RM-2 is a chiseled 'X' at the transducer gage at the toe of the left bank. It is at elevation 0.014 feet gage height and 1,167.027 feet NAVD88, levels of January 16, 2019.

RM-3 is a chiseled 'X' at the base of the staff plate at the toe of the right bank. It is at elevation -0.029 feet gage height and 1,166.984 feet NAVD88, levels of January 16, 2019.

RP-1 is the downstream low bolt on the lower crest gage. It is at elevation 1.042 feet gage height, levels of January 16, 2019.

RP-2 is the upstream upper bolt on the lower crest gage. It is at elevation 3.055 feet gage height, levels of January 16, 2019.

RM1 is a '+' chiseled into the concrete floor of the channel near the PT. It has gage height elevation of –0.01 feet gage height, levels of February 2, 2000.

CHANNEL AND CONTROL – The channel is a concrete lined rectangular channel. The channel is control for all discharges.

RATING – The current rating is Rating #4. The rating was developed from a March 2021 survey of 5 cross sections. It is valid for water year 2021 and forward.

DISCHARGE MEASUREMENTS – A discharge measurement could be done by wading for low flows only. The concrete bottom is conducive to algae growth that makes for slippery footing.

POINT OF ZERO FLOW – The PZF is the low point in the invert in the center of the channel. The channel invert at the gage cross section is –0.28 feet gage height, levels of January 16, 2019.

FLOODS – A flow of 647 cfs at 3.15 feet gage height occurred on August 3, 2017.

REGULATION – Flows into the Old Crosscut Channel are both regulated by SRP and generated by rainfall runoff. The channel is connected to the Arizona Canal

approximately 3 miles north of the gage location. Periodically, SRP will release water into the channel.

DIVERSIONS – Downstream approximately one mile, SRP has built a gate within the OCC to divert water possibly to the Grand Canal.

ACCURACY – Good. Some discharge measurements would be helpful to verify an N value.

JUSTIFICATION – Monitor flows for safety of those working in the channel.

UPDATE - April 1, 2021
D E Gardner