BOX WASH
FCD GAGE ID# 47507

STATION DESCRIPTION

LOCATION - The gage is located about three miles northeast of the Vulture Mine and about 10 miles south of Wickenburg. Latitude N 33° 50' 58.9"; Longitude W 112° 47' 58.3". Located in NE1/4 SW1/4 NE1/4 S20 T6N R5W, in the Vulture Mine 7.5-minute quadrangle.

ESTABLISHMENT - The gage was installed on March 12, 2003.

DRAINAGE AREA – Approximately 5.9 mi^2

GAGE - The gage is a pressure transducer type instrument. The PT diaphragm is at gage height 0.20 feet, levels of February 6, 2018. The PT is on the left bank of the wash.

There is one crest gage located at the site on the left bank of the wash. The pin elevation is -0.10 feet gage height, levels of February 6, 2018. Crest gage is highly susceptible to being washed out and being buried.

There are no staff gages at this site.

ZERO GAGE HEIGHT – Zero gage height is defined as 2,256.149 feet NAVD 1988. Zero gage height is an arbitrary point based on the elevation of BM-BOX.

HISTORY – Gaging established on March 12, 2003. No previous gaging history at this location. Survey of cross sections and instrumentation done on April 7, 2003. A large flood on July 18, 2015 destroyed the PT and CSG. Both replaced on July 21, 2015. Significant scour occurred during this event and lowered the channel by about 0.8 feet and removed a lot of vegetation on both banks, but the left bank especially. A datum shift occurred of about -1.15 feet in 2015, with the channel change that occurred on July 18, 2015.

REFERENCE MARKS

RM-BOX is an FCD brass cap located near the standpipe. It has elevation of 7.680 feet gage height, levels of February 6, 2018 and July 16, 2018. It has elevation of 2,263.829 feet NAVD 1988.

RM-1 is a rebar located about 60 feet west of the main channel on the right bank. It is at elevation 5.904 feet gage height and 2,262.053 feet NAVD88, levels of February 6, 2018 and July 16, 2018.

RM-2 is a rebar located on the top of the left bank. It is at elevation 6.388 feet gage height and 2,262.537 feet NAVD88, levels of February 6, 2018 and July 16, 2018.

RP-1 is the top of the bracket holding the transducer gage that is attached to the conduit, not the station housing. It is at elevation 1.642 feet gage height, levels of February 6, 2018.

CHANNEL AND CONTROL - The channel has a natural bottom and sides. The channel bottom is composed mainly of sand and small cobble. Upstream of the gage, the left bank is quite high and sharp with no overbank. The right bank has a significant overbank. As the channel progresses downstream, the left bank is less high and a left overbank develops. The channel in general tends to widen and the flow become distributary about 600 feet downstream from the gage.

There is no permanent control for low stages. The channel becomes control at about 1.8 feet gage height. Channel capacity is about seven feet and about 9,000 cfs.

RATING - The current rating is Rating #2, dated July 21, 2015. The rating is a modification of Rating #1, accounting for a scoured channel, and a wider channel.

DISCHARGE MEASUREMENTS - Direct measurements could be made by wading in the area near the gage. Higher flows can be measured by indirect methods. Three cross sections were monumented for this purpose.

Cross-section One is located about 300 feet upstream from the gage cross-section. Both banks are marked with a large nail set at ground level. XS1LB is the left bank marker. It has elevation 2,269.83 feet NAVD 1988. XS1RB is the right bank marker. It has elevation 2,270.27 feet NAVD 1988.

Cross-section Two is located at the gage cross section. Both banks are marked with a large nail set at ground level. XS2LB is the left bank marker at elevation 2,262.06 feet NAVD 1988. XS2RB is the right bank marker at elevation 2,264.03 feet NAVD 1988.

Cross-section Three is located about 300 feet downstream from the gage cross-section. XS3LB is the left bank marker. It has elevation 2,256.96 feet NAVD 1988. XS3RB is the right bank marker. It has elevation 2,261.95 feet NAVD 1988.

POINT OF ZERO FLOW - The low point in the gage cross section of the channel was found at -0.3 feet gage height on July 21, 2015.

FLOODS – A large flow occurred on July 18, 2015 as a result of 5+ inches of rain in less than 90 minutes. The peak stage was 5.65 feet with a peak discharge of 4,160 cfs. The highest peak previously had been 839 cfs and 2.90 feet gage height on August 19, 2014.

REGULATION - Some may occur in the watershed for cattle watering, but none are known.

DIVERSIONS - None known

ACCURACY - Fair

JUSTIFICATION - Monitor flows in Box Wash MCDOT for road closure at Whispering Ranch Road.

UPDATED - June 11, 2020
DE Gardner