SKUNK CREEK AT DESERT HILLS DRIVE
FCDMC GAGE ID #64807

STATION DESCRIPTION

LOCATION – The station is located at approximately 15th Avenue and Desert Hills Drive. Latitude 33.84323°; Longitude -112.09204°. Located in S19 T6N R3E, in the New River SE 7.5-minute quadrangle.

ESTABLISHMENT - The gage was installed July 23, 2015.

DRAINAGE AREA – 40.8 mi^2 via UGSG Streamstats.

GAGE - The gage is a pressure transducer type instrument. The PT diaphragm is at 0.22 feet gage height, levels of November 18, 2021.

There is one crest-stage gage at this site. The pin elevation is 0.71 feet gage height, levels of November 18, 2021.

There is no staff gage at this site.

ZERO GAGE HEIGHT – Zero gage height is defined as 1,848.000 feet NAVD88, and is an arbitrary point at the channel bed.

HISTORY – Gaging established on July 23, 2015. No previous gaging history at this location. Station permanently relocated 110 feet upstream on May 12, 2021 to accommodate future construction. Because of this move, new datum is established at the new location. Station was destroyed during the flood event of July 23, 2021. Gaging reestablished on November 18, 2021. A five cross section RTK survey was done on December 7, 2021 for rating evaluation.

REFERENCE MARKS

BM-64807 is an FCDMC brass cap located on the right bank about 20 feet downstream of the current gage site location. It is at elevation 5.273 feet gage height and 1,853.273 feet NAVD88, levels of November 18, 2021.

BM-50648 is an FCDMC brass cap located near the previous station location, about 110 feet downstream of the current station tube. It is at elevation 6.575 feet gage height and 1,854.575 feet NAVD88, levels of May 25, 2021. It was surveyed on November 18, 2021 but was an obscured view, so the May 25, 2021 elevation remains.

RM-1 is a rebar on top of the right bank about 15 feet upstream of Desert Hills Drive. It is at elevation 7.581 feet gage height and 1,855.581 feet NAVD88, levels of May 25, 2021. It was not surveyed on November 18, 2021.

RM-2 is a rebar on the right bank about 5 feet upstream of the current gage station. It is at elevation 4.697 feet gage height and 1,852.697 feet NAVD88, levels of November 18, 2021.

RP-1 is a rock at the previous gage location. It is at elevation 7.223 feet gage height, levels of May 25, 2021. It was found disturbed on November 18, 2021 and is no longer usable.

RP-2 is the top of the sign channel that secures the transducer gage at the current gage station location. It is at elevation 1.882 feet gage height, levels of May 25, 2021. It was destroyed on July 23, 2021.

RP-3 is the top of the streamward sign channel securing the transducer gage. It is at elevation 1.133 feet gage height, levels of November 18, 2021.

CHANNEL AND CONTROL – The channel is fairly straight up and downstream from the gage. The flow is generally northeast to southwest.

The control for the gage is not defined at low flows. The channel is the control at most stages.

RATING – The current rating is Rating #3, developed from cross sections collected in December 2021 and using a previously collected cross section across Desert Hills Drive. The cross-section data were used in an HEC-RAS model at various discharges. Rating is in effect upon reinstallation on November 18, 2021.

The previous rating is Rating #2, developed from a mix of cross sections collected in 2021 and one from 2019. Older cross sections were usable because there had not been any significant channel change since that September 2019 survey when common cross sections were compared. Cross sections were used in an HEC-RAS model for various discharges. Rating is applied to the new gage station.

Rating 1 was the rating at the previous gage location.

DISCHARGE MEASUREMENTS – Direct measurements would be difficult at all but the lowest flows. Indirect measurements may be able to be taken upstream where the stream passes through two hills.

POINT OF ZERO FLOW - The PZF is at approximately 0.0 feet gage height, levels of December 7, 2021.

FLOODS – The highest recorded event at this site occurred on July 23, 2021. It destroyed the gage station. The peak was computed based on high water marks and an HEC-RAS computation. The peak was 8,650 cfs at 9.45 feet gage height. The previous largest event recorded since installation was a peak of 3.88 feet gage height and discharge of 1,593 cfs on October 20, 2015.

REGULATION – None known.

DIVERSIONS - None known.

ACCURACY - Fair

JUSTIFICATION – Monitor flows in Skunk Creek at this location to provide warning at Desert Hills Drive, 19th Avenue, 27th Avenue, and locations downstream. Gage installed at the request of the City of Phoenix

UPDATED - December 28, 2021
D E Gardner