

SKUNK CREEK AT CAREFREE HIGHWAY FCDMC GAGE ID# 65707

STATION DESCRIPTION

LOCATION – The station is located at the Skunk Creek crossing of Carefree Highway, about ¼ mile east of I-17. Latitude 33.79849°; Longitude -112.12309°. Located in S02 T5N R2E, in the New River SE 7.5-minute quadrangle.

ESTABLISHMENT - The gage was installed August 19, 2015.

DRAINAGE AREA – 48.8 mi² via UGSG Streamstats.

GAGE - The gage is a pressure transducer type instrument. The PT diaphragm is at 1.49 feet gage height, levels of September 12, 2019.

There is one crest-stage gage at this site. The pin elevation is 3.02 feet gage height, levels of September 12, 2019.

There is a painted staff gage on the right, downstream side of the bridge. It is viewable from the southwest corner of the bridge. It does not read in gage height, but the readings can be converted to gage height by subtracting 3.13 feet from the PT gage readings.

ZERO GAGE HEIGHT – Zero gage height is defined as 0.00 feet gage height, and is an arbitrary point below the current channel bed. It is equivalent to -3.13 feet on the painted staff gages. It is also equal to 1,672.858 feet NAVD88.

HISTORY – Gaging established on August 19, 2015. No previous gaging history at this location. The rating was updated in March 2017 and applied to the entire runoff history of the gage. The crest gage pin elevation was raised in August 2019.

REFERENCE MARKS

BM-65707 is an FCDMC brass cap located streamward from the station tube on the left bank of the upstream side of the westbound bridge. It is at elevation 14.406 feet gage height, levels of August 20, 2015, and 1,687.264 feet NAVD88, levels of September 29, 2015.

RP-1 is a white paint spot on the higher point on the upstream bridge abutment on the left bank. It is at elevation 15.288 feet gage height and 1,688.146 feet NAVD88, levels of September 12, 2019.

RP-2 is a white paint spot on the lower point on the upstream bridge abutment on the left bank. It is at elevation 9.931 feet gage height and 1,682.789 feet NAVD88, levels of September 12, 2019.

RP-3 is a white paint spot on the downstream bridge abutment on the left bank. It is at elevation 10.162 feet gage height and 1,683.020 feet NAVD88, levels of September 12, 2019.

RP-4 is the lower downstream crest gage bolt, painted white. It is at elevation 5.569 feet gage height, levels of September 12, 2019.

CHANNEL AND CONTROL – The channel approaches Carefree Highway in a southwest direction from the north.

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, dated December 12, 2023. There have been several rating defined since the gage was installed. The current rating was developed from combining survey data from 2023 and early 2020 to create a rating that better reflects the geometry of the channel.

DISCHARGE MEASUREMENTS – Direct measurements would be difficult at all but the lowest flows. Indirect measurements may be able to be taken downstream in a suitable section that has not yet been identified.

POINT OF ZERO FLOW - The PZF is at approximately 0.2 feet gage height, levels of August 20, 2015.

FLOODS – The largest event recorded occurred on July 23, 2021, at a peak of ~8.50 feet and ~11,000 cfs. The exact values are unknown due to the PT housing being destroyed during the event. Post event photos show the high-water mark above the top of the crest gage. More accurate measurements were not performed until 2023. By then many of the high-water marks were removed leaving the measurements to be of poor quality. The approximate discharge estimated corresponds to the measured discharges upstream and downstream during the same event.

REGULATION – None known.

DIVERSIONS - None known.

ACCURACY - Fair

JUSTIFICATION – Monitor flows in Skunk Creek at this location to provide early warning for roads and property downstream between where Skunk Creek goes from Carefree Highway to I-17. Gage installed at the request of the City of Phoenix

UPDATED - December 12, 2023
E S Thomas