

**GOLDEN EAGLE PARK DAM
FCD GAGE ID# 78007 (5978)**

STATION DESCRIPTION

LOCATION – The dam and gage are located in the town of Fountain Hills. Access to the gage is from Golden Eagle Park near the intersection of Golden Eagle Boulevard and Palisades Boulevard. Latitude N 33° 37' 07". Longitude W 111° 44' 07". Located in the NW1/4 SW1/4 S10 T3N R6E, in the Granite Reef Dam 7.5-minute USGS quadrangle.

ESTABLISHMENT – The gage was installed on December 12, 1996. Gaging was reinstalled on the dam following construction on March 5, 2001.

DRAINAGE AREA – 7.13 mi², of which 5.75 mi² is controlled upstream.

GAGE – The gage is a Druck pressure transducer. The PT diaphragm is at 3.05 feet gage height, levels of June 26, 2018. The transducer is located on the right upstream wingwall of the left principal outlet.

There is no staff gage at this site.

There is no crest stage gage at this site.

ZERO GAGE HEIGHT – Zero gage height is defined as the invert of the right inlet. The equivalent datum elevation is 1,696.745 feet NAVD88, levels of January 24, 2018.

HISTORY – Gage installed December 12, 1996. Dam was modified beginning in May 2000. Stage gage was moved to the north wash inlet to the dam. Construction included a second outlet in the center of the dam and raising the dam crest by about four feet. The spillway crest elevation was not changed. The half outlet at the left side of the dam was completely filled with concrete during construction. New trash racks were installed on both outlets. Crest gage was eliminated from the outlet following construction. Gage was reinstalled on March 5, 2001 at the left outlet. Transducer gage was moved out of the outlet and into a small stilling well located about 15 feet west of the side outlet. Gage was moved on February 11, 2003 to avoid draw down effects from the outlet. The transducer gage was found moved in May 2018. A survey was done to determine the new elevation.

REFERENCE MARKS –

BM-5978 is an FCDMC brass cap located near the left side top of dam. It is at elevation 31.335 feet gage height and 1,728.080 feet NAVD88, levels of January 24, 2018.

RM-1 is a rebar near the top of the dam directly above the right outlet. It is at elevation 31.809 feet gage height and 1,728.554 feet NAVD88, levels of January 24, 2018.

RM-2 is a chiseled 'X' on the left side of the upstream headwall of the right outlet. It is at elevation 9.581 feet gage height and 1,706.326 feet NAVD88, levels of January 24, 2018.

RM-3 is a chiseled "x" on the right side of the upstream headwall of the left outlet. It is at elevation 11.526 feet gage height and 1,708.271 feet NAVD88, levels of January 24, 2018.

RM-4 is a chiseled 'X' on the sidewalk near the spillway. It is at elevation 17.859 feet gage height and 1,714.604 feet NAVD88, levels of January 24, 2018.

RM-5 is a chiseled 'X' on the spillway sill near the left side of the spillway. It is at elevation 20.060 feet gage height and 1,716.805 feet NAVD88, levels of January 24, 2018.

RM-6 is a chiseled 'X' on the spillway sill near the middle of the spillway. It is at elevation 19.945 feet gage height and 1,716.690 feet NAVD88, levels of January 24, 2018.

RM-7 is a chiseled 'X' on the center of the downstream headwall of the right outlet. It is at elevation 7.182 feet gage height and 1,703.927 feet NAVD88, levels of January 24, 2018.

RM-8 is a chiseled 'X' on the downstream headwall of the left outlet. It is at elevation 5.917 feet gage height and 1,702.662 feet NAVD88, levels of January 24, 2018.

CHANNEL AND CONTROL – The principal outlets for the dam consist of one 60-inch RCP (referred to as the Primary outlet in the design) and one 10-foot wide by 4-foot high concrete culvert in the center of the dam (referred to as the auxiliary outlet in the design.) The auxiliary outlet culvert pipe is 120 feet in length. The new culvert is 120 feet in length. There is one emergency spillway at the dam located on the right side of the dam.

PRINCIPAL OUTLET / EMERGENCY SPILLWAY –

There are two principal outlets for this dam. The primary outlet is the left culvert. It has one 60-inch diameter culvert pipe. The inlet invert is at elevation 0.060 feet gage height, or 1,696.805 feet NAVD88. The invert of the outlet of the left culvert invert is at elevation -1.387 feet gage height, or 1,695.358 feet NAVD88. The second, or auxiliary outlet is the rightmost outlet. The inlet invert elevation is 0.000 feet gage height or 1,696.745 feet NAVD88. The invert of the outlet of the right culvert is at elevation -0.870 feet gage height, or 1,695.875 feet NAVD88.

The emergency spillway is located on the right side of the dam. A concrete sill was found to run much of the length of the spillway crest. The minimum spillway crest elevation was found to be 19.95 feet gage height, and a second point on the spillway was found to be at elevation 20.06 feet gage height. For the purpose of dam parameters, the spillway elevation will be 20.00 feet gage height and 1,716.75 feet NAVD88. All levels are from January 24, 2018.

The minimum top of dam elevation was found to be is at about 31.74 feet gage height, or 1,728.483 feet NAVD88, levels of January 24, 2018.

RATING – The rating for the discharge is from the Stantec design As-Built. The current discharge rating is Rating #2.

The capacity rating is also from the Stantec design. The current capacity rating is Rating #2.

DISCHARGE MEASUREMENTS – It may be possible to capture a discharge measurement from either outlet channel. Flows through the auxiliary spillway may be too wide and shallow to be measured. Indirect measurements after the event may be more feasible than direct measurements.

POINT OF ZERO FLOW – The point of zero flow is the invert of the both outlet culverts, at 0.00 feet gage height. Both culvert inverts are at the same elevation.

FLOODS / SIGNIFICANT IMPOUNDMENTS – There have been no significant impoundments since installation.

REGULATION – Upstream flows are regulated by Hesperus Dam, Aspen Dam and North Heights Dam. Golden Eagle Park Dam regulates flows through the natural washes.

DIVERSIONS – None known

ACCURACY – Good

JUSTIFICATION – Monitor flows and impoundments in Golden Eagle Park Dam for safety in the town of Fountain Hills.

UPDATE – June 27, 2018
DE Gardner