

**PHOENIX WEST PARK DAM
FCD GAGE ID# 4858**

STATION DESCRIPTION

LOCATION – The dam is located near the intersection of Peoria and Seventh Avenues. The gage is located at the principal outlet of the dam. Latitude N33° 35' 2.3", Longitude W112° 04' 55.2". Located in the SW1/4 SW1/4 SW1/4 S29 T3N R3E in the Sunnyslope 7.5-minute quadrangle.

ESTABLISHMENT – The gage was established on November 29, 2001.

DRAINAGE AREA – 0.49 mi² from USGS Streamstats.

GAGE – The gage is a pressure transducer type instrument located at the outlet from the dam pool. The orifice is at elevation 0.10 feet gage height, or 1,315.82 feet NAVD88, levels of March 8, 2016.

There is a split staff gage at the outlet with a range from 4 to 10 and 10 to 24 feet gage height. From the survey of March 8, 2016, it was found that both the lower and upper staff gages read 0.40 feet low. In other words, when reading 5.0 on the staff gage, the actual water surface elevation is 5.4 feet gage height.

There are no crest gages at this location.

ZERO GAGE HEIGHT - Zero gage height is defined as the elevation of the inlet invert of the principal outlet, elevation 1,315.722 feet NAVD88.

HISTORY – No history at this location prior to gage installation. The dam was constructed in the mid-1970's. A staff gage was added in 2010 or 2011.

REFERENCE MARKS –

BM-PWPARK is an FCD brass cap located on the top of the dam just west of the station standpipe. Elevation 28.792 feet gage height and 1,344.514 feet NAVD88, levels of March 8, 2016.

BM-4858 is an FCDMC brass cap located on top of the dam just north of the station. It is at elevation 28.238 feet gage height, and 1,343.960 feet NAVD88, levels of March 8, 2016.

RP-1 is the concrete immediately in front of the outlet inlet. Elevation 0.00 feet gage height and 1,315.722 feet NAVD88 levels of March 8, 2016.

RP-2 is the top southwest corner of the inlet headwall. It is at elevation 4.021 feet gage height and 1,319.743 feet NAVD88, levels of March 8, 2016.

CHANNEL AND CONTROL – The principal outlet from the dam is a reinforced concrete pipe culvert. The culvert length is 235 feet. The emergency spillway for the dam is located to the southeast of the principal outlet.

PRINCIPAL OUTLET / EMERGENCY SPILLWAY –

The principal outlet is a 27-inch diameter concrete culvert pipe. There is a steel plate with a 16-inch by 16-inch opening that is covering the inlet. The invert of the inlet is at 0.00 feet gage height, or 1,315.722 feet NAVD88. The invert of the outlet is at –2.60 feet gage height, or 1,313.122 feet NAVD88. The culvert length is 235 feet. Flow begins through the culvert at 0.00 feet gage height through a square orifice covering the culvert pipe.

The emergency spillway is located to the southeast of the principal outlet. The bottom width of the spillway is 115 feet. The minimum spillway crest elevation was designed to be at 24.0 feet gage height and 1,339.722 feet NAVD, or 1,336.00 feet M.S.L. The elevation was not verified during the survey of March 8, 2016.

The dam crest elevation was found to be about 28.47 feet gage height and 1,344.19 feet NAVD88, levels of March 8, 2016. The structure design called for the dam crest to be 30.0 feet gage height.

RATING – The current discharge rating is Rating #1. The rating was developed from a culvert analysis using HY8 for the principal outlet, and the weir equation for a broad-crested weir for the spillway.

The current capacity rating is Rating #1. Rating #1 was taken from the As-Built design plans.

DISCHARGE MEASUREMENTS – Direct measurements could be taken from the natural channel below the dam.

POINT OF ZERO FLOW – Flow begins through the primary outlet at 0.00 feet gage height. Flow begins through the auxiliary spillway at approximately 24.0 feet gage height.

FLOODS / SIGNIFICANT IMPOUNDMENTS – The largest impoundment recorded occurred on July 14, 2002, with a peak stage of 10.73 feet and a volume of 18.4 acre-feet, and 16.3 percent full.

REGULATION – None known upstream of the dam. The dam regulates natural flows on from drainage from the slopes of North Mountain and Shaw Butte.

DIVERSIONS – None known

ACCURACY – Fair

JUSTIFICATION – Monitor water levels behind dam for public safety.

UPDATE – March 14, 2016
D E Gardner