

**PHOENIX ZOO DAM #5**  
**FCD ALERT2 STATION ID= 50044, DEVICE ID= 4407**

**STATION DESCRIPTION**

**LOCATION** – The dam is located inside the Phoenix Zoo property near the south end. Latitude N 33° 26' 57.1" Longitude W 111° 57' 04.2". Located in the S09 T1N R4E in the Tempe 7.5-minute quadrangle.

**ESTABLISHMENT** – The gage was established on April 25, 2016.

**DRAINAGE AREA** – 0.23 mi<sup>2</sup>, via Papago Park Emergency Action Plan

**GAGE** – The gage is a pressure transducer type instrument located near the south end of the dam structure. It is at elevation 7.75 feet gage height, levels of March 6, 2019.

There are no staff gages at this dam.

There are no crest gages at this location.

**ZERO GAGE HEIGHT** - Zero is defined as the base elevation of the dam as defined by the emergency action plan. According to the EAP, this elevation is 1,204.50 feet MSL and is equivalent to 1,205.00 feet NAVD88.

**HISTORY** – The lakes in Papago Park have existed for many years. Water for the lakes is taken from the Crosscut Canal to the east. Aerial photographs from 1937 indicate their presence. It is unknown what type of stage gaging was done prior to FCDMC gage installation in 2016.

**REFERENCE MARKS** –

BM-50049 is an FCDMC brass cap located near the station house. It is at elevation 9.395 feet gage height and 1,214.039 feet NAVD88, levels of March 6, 2019.

RP-1 is a chiseled 'X' on the right downstream wingwall of the right weir outfall. It is at elevation 8.380 feet gage height, levels of March 6, 2019.

RP-2 is a chiseled 'X' on the downstream left side of the left weir outfall. It is at elevation 9.091 feet gage height, levels of March 6, 2019.

**CHANNEL AND CONTROL** – The site is a lake with a permanent water pool. The operational water level is 1,213.09 feet MSL or 8.59 feet gage height and 1,213.59 feet NAVD88.

There are several low level spots where small amounts of water freely leaves the lake. It is also assumed there is a drain near the bottom of the lake to drain all the water if necessary. It is unknown what the invert elevation of this might be. The left and right weirs have minimum elevations of 8.31 feet gage height, levels of March 6, 2019.

There is an emergency spillway that discharges higher flows. The lowest elevation of the spillway was found at 9.00 feet gage height and 1,214.00 feet NAVD88, levels of March 6, 2019.

**PRINCIPAL OUTLET / EMERGENCY SPILLWAY** –

The principal outlet is unknown. There likely is one, but there is no information about it.

The emergency spillway is located near the center of the concrete dam structure. The elevation of the spillway is just above the average operating water surface elevation. The minimum spillway elevation is at 1,213.20 feet MSL, or 8.70 feet gage height. The lowest spillway elevation was found at 9.00 feet gage height, levels of March 6, 2019.

The average crest elevation is 1,213.70 feet MSL and 9.20 feet gage height and 1,214.20 feet NAVD88.

**RATING** – There is no current discharge rating.

The current capacity rating is Rating #1. Rating #1 was based on information provided from the emergency action plan for volumes given at the spillway and the operating water surface elevation.

**DISCHARGE MEASUREMENTS** – Direct measurements are not practical.

**POINT OF ZERO FLOW** – Flow leaves the lake at approximately 8.6 feet gage height. Flow begins through the emergency spillway at approximately 8.70 feet gage height.

**FLOODS / SIGNIFICANT IMPOUNDMENTS** – None recorded to date.

**REGULATION** – There are 4 dams upstream from this dam.

**DIVERSIONS** – None

**ACCURACY** – Fair

**JUSTIFICATION** – Monitor water levels behind dam for public safety.

**UPDATE** – April 9, 2019, D E Gardner