

**FREESTONE BASIN CAPACITY
FCD GAGE ID# 6608**

STATION DESCRIPTION

LOCATION - Freestone basin is located in the southwest corner of Freestone Park and on the northeast corner of Lindsay Road and the Western Canal alignment in Gilbert, Arizona in Freestone Park. Latitude N 33° 21' 29"; Longitude W 111° 46' 21". Located in the SW1/4 NW1/4 S08 T1S R6E in the Chandler USGS 7.5-minute quad map.

ESTABLISHMENT - The gage was installed on December 19, 1995.

DRAINAGE AREA - The drainage area at the dam is 2.2 mi² for more frequent events and up to an additional 2.05 mi² for larger events for the area downstream of the Eastern Canal. The area of the Val Vista Lakes development is considered non-contributing to Freestone Basin. According to the ADMS, during the 100-year event, the Eastern Canal capacity is exceeded bringing in an additional drainage area at US60, Baseline Road, Guadalupe Road, and Elliot Road.

GAGE - The gage is a pressure transducer type instrument located in the pump well shaft at the southwest corner of the basin. The PT is at an elevation 2.83 feet gage height, or 1,220.32 feet M.S.L. according to as-builts obtained from the town of Gilbert. Measurement of the location was done by taping down 23 feet from the top of the concrete slab.

ZERO GAGE HEIGHT - is defined as the original position of the PT as installed on December 19, 1995. The elevation was 25 feet 10 inches below the top of the concrete slab for the access to the vault containing the PT. The zero elevation is 1,217.49 feet M.S.L.

HISTORY - The gage was moved to its current location on January 18, 2000. The PT was raised by 2.83 feet from 1,217.49 feet MSL to 1,220.32 feet M.S.L.

REFERENCE MARKS -

RM1 is the north corner of the top of the concrete pad atop the well shafts. Its elevation according to As-Builts is 1,243.32 feet MSL, or 25.83 feet gage height, as measured on January 18, 2000.

RM2 is the center of the top of the concrete headwall with a railing in the southwest corner of the bottom of the basin southwest of the tall cottontail reeds. Elevation 1,228.89 feet MSL or 11.40 feet gage height, levels of August 17, 1998 and adjustment for gage height datum change of January 18, 2000.

RM3 is the center of the plastic top of the north of two irrigation boxes located about halfway up the slope from RM2 to the bike path above. Its elevation is 1,234.87 feet MSL or 17.38 feet gage height, levels of August 17, 1998 and adjustment for datum change of January 18, 2000.

CHANNEL AND CONTROL - The basin has no gravity outflow and is evacuated by pump. The 'auxiliary' spillway begins to overflow at about 25.0 feet gage height (1,242.5 feet MSL - from levels of October 22, 1996.) The spillway is a low area near a gate east of the standpipe.

RATING - The stage-storage rating curve was developed via GIS from digitized contours taken off the As-Builts obtained from the town of Gilbert. The basin maximum storage near the spillway is 218 acre-feet.

DISCHARGE MEASUREMENTS - Discharge measurements cannot be taken since the main evacuation of the basin is by pump.

POINT OF ZERO FLOW - The PZF is where the basin begins to overtop. The elevation of this is about 25.0 feet gage height.

FLOODS – Maximum impoundment occurred July 26, 2006 with 13.38 feet stage and 56.4 acre-feet. Second largest impoundment was on August 28, 1999, with an impoundment of 11.3 feet, 36.2 acre-feet.

REGULATION – Some development retention facilities within the drainage area. The park is to serve as retention for some of the nearby development.

DIVERSIONS – None

ACCURACY – Fair

JUSTIFICATION – Monitor Freestone Basin for town of Gilbert.

UPDATE - September 15, 2011
D E Gardner