

**GUADALUPE FRS
FCD GAGE ID# 6503**

STATION DESCRIPTION

LOCATION – Guadalupe FRS is located immediately west of Interstate Highway 10 and south of Baseline Road in Tempe at the Pointe at South Mountain. Access to the gage can be gained off the northbound Pointe Parkway or from behind part of the hotel room buildings from the southbound Pointe Parkway. The gage is in the gage house, a white building located in the golf course. Latitude N 33° 22' 16", Longitude W 111° 58' 10". Located in the NW1/4 SW1/4 NE1/4 S05 T1S R4E in the Guadalupe 7.5-minute quadrangle.

ESTABLISHMENT – The gage was installed on June 29, 1989.

DRAINAGE AREA – The drainage area is 1.87 mi²

GAGE – The gage is a pressure transducer type instrument. The PT is at 0.26 feet gage height and 1,251.64 feet NAVD88, levels of May 14, 1998.

There is one staff gage at this location. It reads in M.S.L. The gage reads such that the bottom of a number is the elevation reading. Thus the top of 54 feet on the staff gage is equivalent to 1,255.0 feet M.S.L. and is equivalent to 5.57 feet gage height, levels of May 14, 1998.

There is no crest gage at this site.

ZERO GAGE HEIGHT – Zero gage height is defined as the concrete floor immediately in front of the gated inlet opening. Zero gage height is 1,251.38 feet NAVD88.

HISTORY – No previous gaging at this location. Datum was changed for Water Year 1998. The datum 0.0 beginning WY1998 is taken as the concrete floor in front of the gated inlet opening. Previously, the datum 0 elevation had been taken to be the PT diaphragm (which had moved at least once without a datum change.) Dam updated to NAVD88 elevations in June 2016, using the DFERM elevations.

REFERENCE MARKS –

RM1 is the bolt east (right) of the outlet gate near the old PT location at an elevation of 1.20 feet gage height, levels of May 14, 1998.

RP1 is the northwest corner of the top of the concrete block holding the gate control at a gage height of 34.10 feet, levels of May 14, 1998.

RP2 is the southeast corner of the concrete block for irrigation control box about 15 feet northwest of the outlet house. Elevation 8.92 feet gage height, levels of May 14, 1998.

CHANNEL AND CONTROL – The principal outlet for the dam is a 30-inch pipe with a gated opening. There is an emergency spillway for the dam, located to the northwest of the outlet.

PRINCIPAL OUTLET / EMERGENCY SPILLWAY –

The principal outlet is a 30-inch pipe which has a gated opening. Elevation of the gated orifice is 1,250.00 feet M.S.L. or 0.64 feet gage height, levels of May 14, 1998, or 1,252.02 feet NAVD88 as updated in June 2016. Since the outlet is closed, it is not considered in the stage-discharge relationship. Flow begins over the uncontrolled outlet at 1,261.66 feet NAVD88, or 9.64 feet gage height.

The emergency spillway crest is at an elevation of 24.64 feet gage height. The spillway is 200 feet wide and is covered in turf grass.

Top of dam elevation is approximately 32.14 feet gage height.

RATING –

The current discharge rating is for the emergency spillway only. The principal outlet is not considered in the rating. However a rating for the principal outlet was developed using the orifice equation. The current rating is Rating #2, which is essentially rating #1 with a shift in datum. Rating #1 was developed by R. W. Cruff in 1992 using the weir equation.

The current capacity rating is Rating #3. The rating was developed from an analysis of recently acquired terrain data. Rating is applied beginning in WY 2003.

DISCHARGE MEASUREMENTS – Discharge measurements are not practical at this location.

POINT OF ZERO FLOW – The PZF for the primary outlet is 0.64 feet gage height, assuming the gate is open. The PZF for the uncontrolled outlet is 9.64 feet gage height. The PZF for the spillway is at 24.64 feet gage height.

FLOODS / SIGNIFICANT IMPOUNDMENTS – The highest impoundment recorded to date occurred on September 8, 2014, with a peak stage of 14.86 feet gage height, a peak volume of 96 acre-feet, and 34.4 percent full.

REGULATION – Guadalupe FRS regulates natural flows in washes from the east end of South Mountain.

DIVERSIONS – None

ACCURACY – Good

JUSTIFICATION – Monitor water levels behind Guadalupe FRS for public safety.

UPDATE – June 29, 2016
 D E Gardner