

**GUADALUPE FRS
FCD GAGE ID# 68207**

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. Latitude N 33° 22' 21.1", Longitude W 111° 58' 07.3". 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 1.78 mi²

GAGE – The gage is a pressure transducer type instrument. The PT is at 0.18 feet gage height and 1,251.56 feet NAVD88, levels of June 20, 2024.

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, levels of May 25, 2017.

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. Staff gage was changed from displaying MSL values to gage height values in 2017.

REFERENCE MARKS –

SM-7 is a brass cap marker located west of the station tube and southeast of the spillway. It is at elevation 1,286.321 feet NAVD88 and 34.941 feet gage height, levels of May 25, 2017.

SM-9 is a brass cap marker located west of the station tube. It is at elevation 1,283.521 feet NAVD88 and 32.141 feet gage height, levels of May 25, 2017.

SM-10 is a brass cap marker located east of the station tube. It is at elevation 1,284.054 feet NAVD88 and 32.674 feet gage height, levels of May 25, 2017.

RM-1 is the bolt east (right) of the outlet gate near the old PT location at an elevation of 1.169 feet gage height, levels of May 25, 2017.

RM-2 is a chiseled 'X' on the left side sill of the spillway. It is at elevation 1,275.877 feet NAVD88 and 24.497 feet gage height, levels of May 25, 2017.

RP-1 is the northwest corner of the top of the concrete block holding the gate control at the top of the dam near the station tube. It is at elevation 1,285.481 feet NAVD88 and gage height of 34.101 feet, levels of May 25, 2017.

RP-2 is the southeast corner of the concrete block for irrigation control box about 15 feet northwest of the outlet house. The elevation is 1,260.152 feet NAVD88 and 8.772 feet gage height, levels of May 25, 2017.

RP-3 is a mark located in front of the outflow channel on the concrete bed. The elevation is 1,255.32 feet NAVD88 and 3.94 feet gage height, levels of June 20, 2024.

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

PRINCIPAL OUTLET / EMERGENCY SPILLWAY –

The principal outlet is a 30-inch pipe which has a gated opening. Elevation of the gated orifice is 0.48 ft gage height, levels per interim intake structure design plans sealed April 3, 2023, or 1,251.86 feet NAVD88.

The emergency spillway crest is at a given elevation of 24.64 feet gage height or 1,276.02 feet NAVD88. The spillway is 200 feet wide and is covered in turf grass. The survey of May 2017 found the minimum of 3 survey points on the spillway sill to be 24.43 feet gage height.

Top of dam elevation is approximately 32.14 feet gage height and 1,283.52 feet NAVD88.

RATING –

The current discharge rating includes a gated orifice at an elevation of 0.64 feet gage height which the rating assumes remains open and the emergency spillway that begins to discharge at 24.62 feet gage height. The latest rating curve comes from the HDR Inc., Guadalupe Food-Retarding Structure Final Hydraulic Report. This was completed in October 2013.

The current capacity rating is Rating #4 created in WY 2017. The current discharge rating is rating #4 from a recent FCDMC report and applied since September 2023.

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

POINT OF ZERO FLOW – The PZF for the gated inlet is 0.64 feet gage height, assuming the gate is open. The PZF for the ungated inlet is 9.60 feet gage height. The PZF for the spillway is at 24.62 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 20, 2024
E.S. Thomas