

**APACHE JUNCTION FRS
FCD GAGE ID # 6673**

STATION DESCRIPTION

LOCATION – The gage location is in the city of Apache Junction in Pinal County, approximately three miles east of the Maricopa County border. The gage is at the outlet at the western end of the structure. Latitude N 33° 26' 28", Longitude W111° 33' 07". Located in the SW1/4 NE1/4 NE1/4 S08 T1N R8E in the Apache Junction 7.5-minute quadrangle.

ESTABLISHMENT – The gage was installed on September 15, 1988.

DRAINAGE AREA – 5.8 mi²

GAGE – The recording gage is a pressure transducer type instrument located at the principal outlet of the structure. Elevation 0.13 feet gage height, levels of March 8, 2012.

There are five staff gages at the principal outlet. The staff gages are in five foot increments. All the staff gages read high or low by no more than 0.2 feet.

There is no crest gage at this location.

ZERO GAGE HEIGHT – Zero gage height is defined as the lip of the lower inlet to the intake tower. Elevation 1,785.787 feet NAVD 1988, levels of March 8, 2012.

HISTORY – No previous history at this location.

REFERENCE MARKS –

A-9 is an FCDMC brass cap settlement marker located on top of the dam structure north of the outlet at station 105+00. Elevation is 1,811.654 feet NAVD 1988, or 25.867 feet gage height, levels of March 8, 2012.

RP-1000 is a chiseled 'X' on the left side of the spillway floor. Elevation is 1801.824 feet NAVD 1988, or 16.037 feet gage height, levels of March 8, 2012.

CHANNEL AND CONTROL – The principal outlet for the structure is a 2-foot diameter opening into a 2.5-foot diameter pipe. The top of the inlet tower allows water into the outlet. For levels above about 16.0 feet gage height, the spillway also begins to flow.

PRINCIPAL OUTLET / EMERGENCY SPILLWAY –

The principal outlet is a 30-inch diameter culvert pipe. The culvert length is 146 feet. The invert of the inlet to the outlet is at 0.00 feet gage height and the culvert bottom immediately downstream of the inlet is –0.25 feet. There are two entry points to the intake tower. A culvert with a circular opening of 24-inch diameter is near the bottom of the intake tower. The lip of the tower inlet is at 0.00 feet gage height. The second inlet to the intake tower occurs by flow over the top of the tower at about 9.7 feet gage height.

The emergency spillway is a concrete spillway in the dam, located to the left of the principal outlet. The spillway is about 100 feet wide and acts as a broad crested weir. The elevation of the spillway is 16.00 feet gage height.

The top of the dam elevation is about 27.0 feet gage height.

RATING – The current rating is Rating #3. R. W. Cruff computed the rating for the principal outlet in March 1992. The principal outlet rating was computed using the orifice equation for the 24-inch opening and HY8 for the 30-inch culvert under the dam. The spillway rating was computed by the weir equation using a coefficient of 2.9. Although the site survey performed March 1997 showed slightly different elevation for the 30-inch opening and the spillway, they were not considered significant enough to warrant change to the original rating. The spillway rating was revised based on new data in 1998, thus causing the rating #3 to be produced.

The current capacity rating is Rating #2. The rating was developed using DTM information from the McLain Harbers survey information.

DISCHARGE MEASUREMENTS – Direct measurements could be made from the floodway below the dam. No direct measurements can be made from the auxiliary spillway.

POINT OF ZERO FLOW – The PZF for the primary outlet is 0.00 feet gage height at the inlet to the intake tower.

The PZF for the auxiliary spillway is at about 16.0 feet gage height.

FLOODS / SIGNIFICANT IMPOUNDMENTS – The largest impoundment on record occurred on August 17, 2010 with a peak stage of 6.48 feet and a volume of 43 acre-feet, and about 6.4 percent full.

REGULATION – The dam regulates normal flows from the Goldfield and Superstitions Mountains.

DIVERSIONS – None known

ACCURACY – Good

JUSTIFICATION – Monitor levels behind Apache Junction FRS for public safety.

UPDATE – June 30, 2016
D E Gardner