

**WHITE TANK FRS #4  
FCD GAGE #87807**

**STATION DESCRIPTION**

**LOCATION** - The dam is located south of I-10 and north of Van Buren Street and is along the west side of Jackrabbit Trail (195th Avenue). The gages are nearest the southeast part of the dam. Latitude W 33° 27' 04"; Longitude W 112° 29' 40". Located in SE1/4 SW1/4 S05 T1N R2W in the Perryville 7.5-minute USGS quad map.

**ESTABLISHMENT** – Gaging was established on January 9, 1986.

**DRAINAGE AREA** - 18.6 mi<sup>2</sup>

**GAGE** – There is one pressure transducer gage located at this dam. It is at the principal outlet that is located on the southeast corner of the structure. The transducer is at elevation -0.60 feet gage height, levels of June 28, 2017, and adjusted with levels of December 19, 2017.

There are six staff gages located near the principal outlet of the structure at the southeast corner of the dam. Each gage displays in 5-foot increments, from 0 to 30 feet gage height. The staff gages display in feet gage height above the invert of the inlet at the principal outlet, as surveyed on March 22, 2018.

There are no crest gages at this location.

**ZERO GAGE HEIGHT** – Zero gage height is defined as 1,030.000 feet NAVD88, levels of December 19, 2017.

**HISTORY** – No previous history at this location. Station established on January 9, 1986. At that time a PT station was installed at the west outlet. Station removed for dam rehabilitation on June 1, 2011. Stations reinstalled in temporary locations for the duration of the dam rehabilitation. The station with level ID 6823 was installed in the pool area on November 17, 2011. PT elevation is at 1,032.50 feet NAVD88. The station with level ID 6822 was installed on November 22, 2011 near the crest of dam at east outlet station 17+32 is at elevation 1,041.07 feet NAVD88. All instrumentation removed in December 2016 for construction. Dam rehabilitated, and reconstructed with completion at the end of June 2017. Station reinstalled at the principal outlet on June 28, 2017. In December 2017, the Zero Gage Height was changed from the concrete apron at the outlet to the invert of the inlet. Staff gages were added near the new principal outlet in March 2018. Cap on principal ungated outlet was removed around March 1, 2021. Discharge and drawdown ratings were updated to reflect the available principal outlet.

### **REFERENCE MARKS -**

BM-1 is an FCDMC brass cap at station 228+93, marked SM-2C3 on top of the structure west of the outlet works. It is at elevation 29.668 feet gage height and 1,059.668 feet NAVD88, levels of March 22, 2018.

RM-1 is a chiseled 'X' at the left side of the concrete apron about 25 feet east of the outlet riser. It is at elevation -0.465 feet gage height and 1,029.535 feet NAVD88, levels of March 22, 2018.

RM-2 is a chiseled 'X' at the left side of the outlet riser. It is at elevation -1.072 feet gage height and 1,028.928 feet NAVD88, levels of March 22, 2018.

RM-3 is a chiseled 'X' on top of the outlet box at top of structure. It is at elevation 31.641 feet gage height and 1,061.641 feet NAVD88, levels of March 22, 2018.

RM-4 is a chiseled 'X', labeled PO-1, and located about 25 feet north of the principal outlet on the concrete apron. It is at elevation -0.569 feet gage height and 1,029.431 feet NAVD88, levels of March 22, 2018.

RP-1 is a chiseled 'X' on the left stem pillar, fifth from the top. It is at elevation 11.047 feet gage height and 1,041.047 feet NAVD88, levels of June 28, 2017.

### **CHANNEL AND CONTROL –**

There are two gated inlets that are 18-inches in diameter and are at elevation 0.00 feet gage height. The invert of the pipe inside the outlet works is 3 feet below the inlet elevation or approximately 1,027.00 feet NAVD88.

There is an ungated inlet to the outlet at elevation 7.70 feet gage height, but it is currently blocked, pending the completion of the connection to the final outfall to the Loop 303 channel and Gila River outfall.

The emergency spillway is a long, 560-foot concrete weir with a minimum elevation of 23.0 feet gage height.

### **PRINCIPAL OUTLET / EMERGENCY SPILLWAY**

The principal outlet is a 42-inch RCCP that takes the flow under the dam from the drop inlet. The invert of the outlet pipe is 1,027.00 feet NAVD88. Discharge into the outlet is via two 18-inch gated inlets on the outlet riser. The gated inlet elevations are assumed to be identical, and the inlets themselves are assumed to be identical. The invert elevation is estimated to be 0.00 feet gage height. Normal operations have these inlets

closed. An ungated inlet to the principal outlet has an invert elevation of 7.70 feet gage height and 1,037.70 feet NAVD88.

There is a single concrete sill emergency spillway located near the southwest part of the structure. It is 560 feet in width. The minimum elevation of the spillway is 23.00 feet gage height and 1,053.00 feet NAVD88, levels of June 28, 2017.

Top of dam elevation is approximately 29.7 feet gage height and 1,059.70 feet NAVD88, levels of June 28, 2017. This is not the official top of dam elevation, which is approximately 29.0 feet gage height.

**RATING** -

The current discharge rating is from the design. The rating assumes the gated inlets are open, but operationally they remain closed until manually opened as needed. The rating is rating #5.

The current volumetric rating is from the Wood Patel design, and is rating #4.

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

**POINT OF ZERO FLOW** –

The PZF for the gated inlet is 0.00 feet gage height, levels of December 19, 2017. The PZF for the ungated inlet to the outlet is 7.70 feet gage height, levels of June 28, 2017.

The PZF for the emergency spillway is at 23.00 feet gage height, levels of June 28, 2017.

**FLOODS / SIGNIFICANT IMPOUNDMENTS** –

An impoundment of 644 acre-feet and 0.75 feet gage height, was recorded on August 15, 1990. A large impoundment occurred on September 8, 2014 and reached a volume of 601 acre-feet, and 1,042.50 feet NAVD88.

**REGULATION** - The dam is a regulation of flows from the inlet channel north of the dam.

**DIVERSIONS** - I-10 acts as a diversion of natural overland flows into the dam on the north. A diversion channel conveys water from the watershed on the north side of I-10 into the structure.

**ACCURACY** - Fair to good.

**JUSTIFICATION** - Monitor White Tank FRS #4 for public safety and historic record.

**UPDATE** -

May 20, 2021  
DE Gardner