POWERLINE FRS
FCD GAGE ID# 6683

STATION DESCRIPTION

LOCATION – Powerline FRS begins southeast of Ironwood Avenue and Baseline Road in Apache Junction. The station is located approximately one mile south of Baseline Road along the east side of the CAP canal. The primary outlet discharges directly to Powerline Floodway. Latitude N 33° 21' 06", Longitude W111° 32' 34". Located in the SE1/4 SW1/4 SW1/4 S09 T1S R8E in the Desert Well 7.5-minute quadrangle.

ESTABLISHMENT – The gage was installed on September 27, 1988.

DRAINAGE AREA – about 46.8 mi^2, from KHA, 2012.

GAGE – The gage is a pressure transducer type instrument. The PT is at 0.20 feet gage height or 1,564.02 feet NAVD 1988.

There are five staff gages at this location.

1 – 5 foot staff reads 0.07 feet high
5 – 10 foot staff reads 0.13 feet high
10 – 15 foot staff reads 0.05 feet high
15 – 20 foot staff reads 0.02 feet high
20 – 25 foot staff reads 0.02 feet low

There are no crest gages at this location

ZERO GAGE HEIGHT – Zero gage height is taken as invert of the principal outlet. Zero gage height is equivalent to 1,563.82 feet NAVD1988.

HISTORY – No previous gaging at this location

REFERENCE MARKS –

All RMs should be surveyed and tied to new datum references.

Marker, 'A-27' located atop Vineyard FRS at Station 350+00 is at elevation 1,579.62 feet NAVD1988, or 15.80 feet gage height.

RP1 is a brass cap on headwall at the principal outlet. Elevation 7.45 feet gage height, or 1,571.27 feet NAVD1988.

There is a monumented cross section in the emergency spillway.

PWR RB is an FCD brass cap to the right of the right bank levee at the crest cross section. Elevation 21.25 feet gage height, levels of February 27, 1997, or 1,585.07 feet NAVD1988.

PWR LB is an FCD brass cap to the left of the left bank levee at the crest cross section. Elevation 20.68 feet gage height, levels of February 27, 1997, or 1,584.50 feet NAVD1988.

CHANNEL AND CONTROL – The principal outlet is a 36-inch pipe that is 160 feet in length. The emergency spillway is located at the southeast end of the structure.

PRINCIPAL OUTLET / EMERGENCY SPILLWAY –

The principal outlet is a 36-inch pipe that is 160 feet in length. The invert of the inlet is at 0.00 feet gage height.

The emergency spillway is located at the southeast end of the structure. The crest of the spillway is at about 21.1 feet gage height. The spillway is about 600 feet wide and has an earthen makeup covered in various desert shrubs. Flow through the spillway is subcritical from an HEC-RAS analysis.

Top of dam elevation is at about 25.6 feet gage height.

RATING – The current discharge rating is Rating #3 from JE Fuller Hydrology and Geomorphology, Inc.

The current capacity rating is Rating #4 from JE Fuller Hydrology and Geomorphology, Inc. memorandum “New stage-storage data for modified Powerline FRS”, dated July 21, 2009.

DISCHARGE MEASUREMENTS – Low flow measurements could be made at both the primary and auxiliary outlets.

POINT OF ZERO FLOW – The PZF at the principal outlet is 0.00 feet gage height. The PZF of the emergency spillway is at approximately 21.1 feet gage height.

FLOODS / SIGNIFICANT IMPOUNDMENTS –

REGULATION – Powerline FRS controls natural flows upstream of the dam area.

DIVERSIONS – There may be small stock tanks created in the drainage area upstream of the dam.

ACCURACY – Good

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

UPDATE – July 6, 2016
D E Gardner