

STATE OF CALIFORNIA
CALIFORNIA NATURAL RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
DIVISION OF SAFETY OF DAMS

INSPECTION OF DAM AND RESERVOIR IN CERTIFIED STATUS

Name of Dam Syphon Canyon Dam No. 1029-4 County Orange
Type of Dam Earth Type of Spillway Concrete weir and open channel
Water is 11.1 feet below spillway crest and 18.1 feet below dam crest.

Weather Conditions Cool, overcast

Contacts Made Steve Habiger & Tyler Dillman with IRWD; Doug Harriman & Will Kulikowski with Genterra

Reason for Inspection Annual Maintenance Inspection

Important Observations, Recommendations or Actions Taken

Remove the vegetation on the right upstream groin by November 1, 2018.

Consider replacing the highly deteriorated gunite liner on the spillway channel in the future.

Conclusions

From the known information and visual inspection, the dam, reservoir, and the appurtenances are judged safe for continued use.

Observations and Comments

<u>Dam</u>	The graveled crest was reasonably well aligned and level, showing no depressions or cracks. The upstream slope contains wave-action caused benches below the high-water line. Riprap slope protection on the upstream slope consists of uniformly sized chunks of broken up concrete, thinning out on the lower portions of the slope. Vegetation on the right upstream groin should be cleared to permit inspection. The downstream slope was well mowed and contained no unfavorable vegetation. The slope appeared uniform and well maintained. The abutments were uniform and revealed no seepage or erosion. Minor rodent activity near the right abutment calls for increased rodent control measures.
<u>Spillway</u>	The spillway is an open trapezoidal shaped channel cut through the left abutment. The approach and channel were clear and unobstructed. If this dam is slated to serve for another ten years or longer, it is suggested that the deteriorating gunite lining be included in future plans for redesign and replacement.
<u>Outlet</u>	The outlet consists of a 12-inch upstream butterfly and two 16-inch downstream butterfly valves, installed sometime after 2014. All valves were fully cycled satisfactorily. The exit portal inside the storm drain manhole was clear.
<u>Seepage</u>	No seepage or indications thereof, were observed on the downstream slope, groins, and toe of the dam. The seepage from the toe drain was estimated at about 2 gpm. This is within normal limits.
<u>Instr.</u>	Instrumentation at this dam consists of 12 piezometers and one seepage point. The most recent surveillance report submittal was dated August 25, 2017, and included data through December 2016. I reviewed the data and found all readings for this reporting period were within the boundaries of historical norms. No abnormal trends were observed. The piezometers at the crest tend to be influenced by the reservoir level, due to proximity, but all readings plotted within the expected phreatic zone and pore pressure gradients. The instrumentation data indicates the dam is performing satisfactorily and no additional instrumentation is judged necessary at this time.

Photos taken? Yes <u>X</u> No <u> </u>	Electronic Signature: Philip Lee, P.E. Safety of Dams 9/5/2018; 3:01 pm	Inspected by <u>PW Lee</u> Date of Inspection <u>5/2/2018</u> Date of Report <u>6/5/2018</u>
cc for <u>Owner/Book</u>		

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Crest



Vegetation on Right Upstream Groin must be cleared to permit inspection

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Upstream Slope



Downstream Slope

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Spillway Channel Approach



Outlet Valve Operation