
North Coast Regional Water Quality Control Board

Inspection Memo

To: Gil Falcone, Senior Environmental Scientist, Southern Non-point Source and 401 Certification Unit

From: Scott A. Gergus, Engineering Geologist, Northern Non-point Source and 401 Certification Unit

Date: September 13, 2023

Subject: July 13, 2023, inspection of Valley of the Moon Club flashboard dam maintenance project.

File: Valley of the Moon Club, 7025 Oakmont Drive, Santa Rosa, CA, Sonoma County, APN 016-150-014-000
ECM PIN: CW-889988, WDID No. 1B23134WNSO

Background

North Coast Regional Water Quality Control Board (Regional Water Board) staff Ryan Bey received an anonymous complaint on July 11, 2023. The Complainant alleged unpermitted work on a flashboard dam located in Santa Rosa Creek on the Valley of the Moon Club golf course, 7025 Oakmont Drive, in Santa Rosa, 95409. The flashboard dam is located between the second and seventh holes on APN 016-150-014-000, approximately 8.8 miles east of Santa Rosa, Sonoma County (Property). Four photographs were included in the complaint. The property is owned by Oakmont Village Association, 6637 Oakmont Drive, Suite A, Santa Rosa, 95409. On July 12, 2023, I spoke to King Wayman, Superintendent of the golf course, (831) 236-3045, kwayman@playvom.com, and requested a site visit, and we agreed to meet on-site on July 13, 2023, at 0900 hours. In an Email dated August 8, 2023, Mr. Wayman informed me future correspondence should be sent to Hilary Gruendle, General Manager of Valley of the Moon Club, hgruendle@playvom.com and Christel Antone, General Manager of the Oakmont Village Association, Christel@oakmontvillage.com.

Inspection

Valley of the Moon Club golf course is located at 7025 Oakmont Drive in Santa Rosa. According to LandVision, the flashboard dam is on APN 016-150-014-000 and is 28 acres in area. The 18-hole golf course is approximately 130 acres in area and

encompasses many APNs. The headwaters of Santa Rosa Creek flow through the golf course as an intermittent stream. Santa Rosa Creek is tributary to the Laguna de Santa Rosa. The Laguna de Santa Rosa is tributary to Mark West Creek and eventually flows to the Russian River and is located within the Santa Rosa Hydrologic Subarea 114.22. Laguna de Santa Rosa is listed for nutrients, dissolved oxygen, sediment, and temperature. California Department of Fish and Wildlife, Fish Species by Watershed, dated February 26, 2014, lists steelhead, chinook, and coho in Santa Rosa Creek, all species of concern. The Property is accessed by Oakmont Drive and the complaint site is located at the west end of a water hazard/irrigation dam (Image 1).

Inspection participants included:

King Wayman, Superintendent, Valley of the Moon Club, 7025 Oakmont Drive, Santa Rosa, CA, 95409, (707) 539-0415 and cell (831) 236-3045, kwayman@playvom.com

Scott Gergus, Engineering Geologist, North Coast Regional Water Quality Control Board, 5550 Skylane Boulevard, Suite A, Santa Rosa, CA, (707) 576-2685, scott.gergus@waterboards.ca.gov



Image 1: Complaint site located in the orange oval showing a water hazard/irrigation dam between the second and seventh holes on the Valley of the Moon Club golf course.

At 0900 hrs. on July 13, 2023, I met Mr. Wayman, Superintendent, in the Valley of the Moon Club golf course Pro Shop parking lot. We commenced the inspection by taking a golf cart to the flashboard dam between the second and seventh holes shown in Image

1 (latitude 38.4364, longitude -122.5951). The purpose of the inspection was to respond to the complaint alleging unpermitted work on a flashboard dam on Santa Rosa Creek.

The flashboard dam is located within the headwaters of Santa Rosa creek a water of the state. The Property, including the flashboard dam was constructed in 1964 and used as a water hazard and irrigation pond. Approximately 16 miles downstream of the Property, Santa Rosa Creek discharges into the Laguna de Santa Rosa.

The dam structure is constructed of mortared concrete bricks set onto a concrete foundation and a wooden flashboard dam an estimated 12 feet long and 2 feet high. The wooden flashboard dam is constructed of six-foot-long 2 X 6-inch flashboards that are inserted into "C" steel channel checks on both ends of the dam. A "H" steel channel check is located in the center of the dam. The 2 X 6-inch flashboards are held in place by the force of the pond water retained behind the dam. Concrete brick wing walls were constructed along the earthen banks (Photograph 1). When full, excess water spills over the top of the wooden flashboards and onto a concrete apron constructed of grouted broken concrete used for energy dissipation.



Photograph 1: Photographer is looking downstream at the flashboard dam. The photograph shows the irrigation pond, the two wing walls, and wooden flashboard dam. The flashboards have been recently covered with a brown tarp to help prevent water leakage.

Mr. Wayman alleged extremely high winter flows during the 2022 - 2023 winter damaged the dam causing the dam to leak 200,000+ gallons of water per day. Water was allegedly leaking between the 2 x 6-inch flashboards and under the dam foundation and concrete dam apron.

Mr. Wayman said maintenance work on the flashboard dam occurred on July 11, 2023. Prior to commencing the maintenance work, water elevation behind the dam was very low and had nearly stopped due to leakage from the dam. Plastic tarps were placed over the flashboard dam and foundation and weighed down using 60 sandbags along the interior and broken concrete along the exterior of the dam (Photographs 2a and 2b). Two holes in the dam apron were plugged using pre-mixed Sakrete concrete. Sandbags were placed over the curing concrete. Mr. Wayman began filling the dam after the concrete had cured the following day on July 12, 2023. I informed Mr. Wayman that concrete has a high pH and if curing concrete comes into contact with water, it can alter the pH of that water. Mr. Wayman said concrete mix was not used in the pond, only on the apron and absent flowing water during the curing process. I observed residual moisture on the apron and around the cured concrete (Photograph 3). The recently applied concrete did not appear to have been eroded by flowing water.



Photographs 2a and 2b: Brown plastic tarp is placed over the flashboard dam and concrete foundation and weighted down using 60 sandbags along the interior and broken concrete along the exterior of the dam. The photograph on the left (Photograph 2a) does not show the broken concrete because it is the dark shadow of the dam. The significantly lightened photograph on the right (Photograph 2b) shows the broken concrete along the dam's exterior and sandbags on the interior of the dam.

The irrigation pond within the stream channel is also filled with groundwater pumped from an onsite well with 300,000 gallons of water per day irrigated to the golf course lawns. Mr. Wayman alleged prior to installing the tarp over the flashboard dam and apron repair, groundwater was pumped into the irrigation pond from 4:30 a.m. until 3:00 p.m. everyday. After the tarp(s) and sandbags were applied to the flashboard dam, groundwater is now pumped into the pond from 4:30 a.m. until 9:00 a.m., alleging a reduction in dam leakage and groundwater use.



Photograph 3: Two holes in the dam apron that leaked a large quantity of water were plugged with pre-mix Sakrete concrete. White plastic sandbags were placed over the curing concrete (circled in red). Residual moisture is shown adjacent to the curing concrete.

Mr. Wayman alleged dam leakage had been significantly reduced from 200,000+ gallons to 15,000 to 20,000 gallons per day. Mr. Wayman said he estimated water volumes by comparing the amount of time the groundwater pump operated. Leakage appeared to be primarily under the concrete apron indicating leakage originating under the dam's concrete foundation.

I explained to Mr. Wayman, typically work performed on a flashboard dam structure and apron including placing fill in a water of the State and federal waters requires a Clean Water Act section 401 Permit from our office or at least telephone/email notification for emergency permitting before commencing work. The placement of tarp(s), sandbags, broken concrete, and pre-mix Sakrete in the stream are an unauthorized discharge to waters of the state and represent a violation. These items are a threat to discharge pollutants to the stream that can include very high pH cement and plastic debris. I explained to Mr. Wayman that activities that directly or indirectly impact waters of the state require a permit from the Regional Water Board. I informed him he might also need other state and/or federal permits/licenses.

Mr. Wayman informed me long-term dam and cutoff wall repair and replacement opportunities were being explored, but he was unsure if and when this would occur. Clear Pond Solutions, a pond maintenance and repair company, has been contacted by Mr. Wayman to replace the dam and install a new cutoff wall. Mr. Wayman said they were familiar with permits required for working in state and federal waters. Mr. Wayman was advised to start the permitting process early because plans were needed and he will be obtaining a permit from our agency as well as other state, federal, and local permitting agencies.

Mr. Wayman did not know when the pond replacement would occur because Clear Pond Solutions representatives have not visited the Property or provided a construction bid. Dam replacement will depend on the contractor's availability and cost. During the interim, I interpreted the use of plastic tarps, sandbags, and broken concrete would continue to be installed and removed annually. I told Mr. Wayman he might need a permit from our agency for these annual temporary activities.

I told Mr. Wayman the 401 permit will also involve developing a mitigation plan for impacts to the stream during dam and cutoff wall replacement and he should consider potential mitigation projects involving habitat improvement. I told Mr. Wayman typically mitigation is located in the same watershed as the project, in this case Santa Rosa Creek. Downstream of the flashboard dam, the stream is heavily armored with broken concrete and could be considered for a potential habitat improvement project (Photographs 4 and 5).



Photograph 4: Photographer is standing on the concrete apron and looking downstream at Santa Rosa Creek channel hardened with broken concrete.



Photograph 5: Photographer is standing on the Santa Rosa Creek bank and looking upstream at Santa Rosa Creek channel hardened with broken concrete.

Conclusions and Recommendations

The Regional Water Board received a complaint alleging unpermitted work on a flashboard dam in Santa Rosa Creek operated by the Valley of the Moon Club golf course. The unpermitted temporary maintenance work on the flashboard dam was allegedly performed to address dam leakage into Santa Rosa Creek. As a temporary repair, Valley of the Moon Club representatives placed plastic tarps over the dam and foundation and weighed down the tarps using sandbags along the interior and broken concrete along the exterior of the dam to stop the leakage without permits. I interpreted the use of plastic tarps, sandbags, and broken concrete would continue and be removed and installed annually until the dam is replaced, this temporary work would require permitting. Two holes in the dam apron leaking a large quantity of water were plugged with pre-mixed Sakrete concrete and sandbags placed over the curing concrete in the stream channel. Flowing water was not present during the inspection; however, residual moisture was present on the apron and around the cured concrete. Applying wet concrete to the Santa Rosa streambed represents an unpermitted discharge and threat to water quality because of very high pH concerns caused by curing concrete. Typically, work performed on a dam and apron requires a Clean Water Act section 401

Permit from our office. If actions directly or indirectly impact waters of the state, a permit must be obtained.

To address the continued temporary use of tarp(s), sandbags, and broken concrete to address the leaking flashboard dam and proposed replacement of the flashboard dam and cutoff wall, I recommend the following:

1. Issue a Notice of Violation (NOV) to Valley of the Moon Club.
2. Removal of the plastic sheeting and sandbags from the flashboard dam prior to the wet weather season.
3. The inspection only involved the leaking flashboard dam. Mr. Wayman said there were other water features on the Valley of the Moon Club golf course within our region but he did not indicate if they were experiencing similar problems. Request information on additional water hazard/irrigation ponds on the Valley of the Moon Club golf course within our region to determine if they need maintenance/repair/upgrades and give the applicant the opportunity to include these features in their permit application.
4. Submittal of 401 Water Quality Certification or Waste Discharge Requirement application authorizing the continued temporary installation and removal of tarp(s), sandbags, and broken concrete and proposed replacement of the dam and cutoff wall. If additional ponds on the Property in Santa Rosa Creek or its tributaries are identified as needing work, the 401 application can include those sites as well.