

Amador Regional Sanitation Authority

"Servicing Amador City, Martell, & Sutter Creek"

STAFF REPORT

TO: GENERAL MANAGER, TOM DUBOIS
MEETING DATE: SEPTEMBER 18, 2025
FROM: DAN LAFONTAINE
SUBJECT: HENDERSON UNDERDRAIN REPAIR UPDATE

BACKGROUND:

The Henderson underdrain project began on August 11, 2025. During the lowering of the Henderson Reservoir, significant sludge levels were encountered which necessitated a change in the contractor's temporary bypass pumping plan. The contractor (Campbell Construction) built a rip-rap berm consisting of (18-inch minus, 12-inch minus and 6-inch minus) approximately 6 to 8 feet tall and 10 to 12 feet wide prior to the outlet structure. The rip-rap berm will be left in place to hold back sludge from the underdrain vault and waterman valve. It was also discovered that outlet weir boards consisting of 4x4 posts and 2x4 lumber had previously been installed. The pump around has been installed to produce between 50 and 400 gallons per minute to keep the downstream piping wet.

On August 27, 2025, NorCal pipe mobilized to clean and perform CCTV of the underdrain pipe. Upon performing the camera work, it became apparent that the underdrain pipe (while severely deteriorated), is 20-inch OD cement mortar lined ductile iron pipe (DIP) encased in concrete that varies from 1.5 feet to 2 feet in thickness. During the cleaning, large chunks of the DIP became loose and delaminated creating an inconsistent ID of the pipeline for slip lining. The DIP also had large sections break free and traveled downstream which were collected by the contractor. The camera footage was sent to the Division of Safety of Dams (DSOD) who concluded that more cleaning/removal of the DIP was necessary prior to the next step in the repair.

CURRENT PROGRESS:

The Cement mortar lining has deteriorated along with significant portions of the DIP wall at various lengths along the alignment, creating an inconsistent ID of the pipeline for slip lining. The DIP is also a smaller ID than expected from the record drawings. The varying pipe wall materials and diameters, and the smaller ID than expected have significantly decreased the tolerance for any error during installation of the casing spacers and slip line pipe. The casing spacer plastic guides were already planned to be shaved down when the pipe was assumed to be 20-inch concrete pipe and another 1-inch decrease in the ID would prevent any conventional casing spacing product from fitting within the annular space between the slip lining and host pipe. This fact along with the underdrain pipe being fully encased in concrete leads the contractor and staff to the conclusion that the repair process should be changed from slip lining to cure in place pipe (CIPP). The concrete wall of the encasement appears to remain intact and would provide adequate structural section for the CIPP.

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HydroSciences submitted a tentative Field Directive (not stamped) to DSOD outlining the change in design and other minor changes. In a field visit with DSOD on September 10, 2025, the concept of CIPP as well as other minor changes to the project was approved, but DSOD requires a formal submittal of the field directive prepared by the Contractor's engineer with a stamp of approval from the Engineer of Record (Stantec) for the Design Change Request. Campbell construction (along with HydroSciences) are working to deliver the field directive to Stantec the week of September 15th. Stantec will likely be able to review and stamp the Field Directive by September 19th for submittal to DSOD.

NorCal pipe will be onsite on September 15, 2025, to perform additional cleaning and removal of the deteriorated pipe and will CCTV after the cleaning to submit to DSOD. It is anticipated that the CCTV footage and the Field Directive review by DSOD will take approximately one week to obtain approval.

Based on the changes to the design and approvals necessary (DSOD) the schedule has slipped. CIPP will be much faster to implement in the field (anticipate 2 days of work) so time may be able to be gained during the actual work, but staff feel that the work will not be completed until the middle of October. Formal notice will be sent to the contractor that work will be extended within the Reservoir until October 10th.

FUTURE ITEMS:

During the underdrain project staff met with the Waterman valve rep and discussed the status of the valve. The rep believes that the valve is not properly aligned and once that occurs the valve should operate as designed. To facilitate the proper alignment of the valve, reinforcement of the pier is necessary. Staff have contacted a local metal shop to refabricate the supports to the pier and plan to change all deteriorating supports to the pier.

Based on water rights produced by the landowner, DSOD has delayed the grouting of the outlet pipe which staff believes comes from a naturally occurring spring. DSOD has requested that while the dam is at a low level that ARSA perform exploratory digging on the inside face of the dam wall to try and locate the inlet to the pipe. ARSA is discussing with the contractor the best location to perform this work based on historical information.

A new staff gauge has also been obtained and will be installed to aid the operator in taking level measurements at Henderson in the future.