

Dye Test Made At Matilija

3-8-48

LEADERS of the Matilija dam project today are awaiting results of a dye test performed Saturday to determine whether or not fresh water from the Matilija reservoir is seeping under the dam. So far, although it is too soon after the test to draw any definite conclusions, there has been no visual evidence of leakage.

The test was started Saturday by Dr. Thomas Bailey, geological consultant, and Walter Loban, resident engineer on the dam, by their dumping of blueing and potassium permanganate into the approximate 70 acre feet of water behind the dam. The next step is to see if the treated water shows up on the downstream side of the dam around the base of the center blocks, G to J.

TO CHECK COLOR

If there is seepage, it will be noticeable in the color of the water (from the blueing) or in water samples showing potassium and manganese which are not found in appreciable quantities in the dam water. Water samples were taken and analyzed prior to the dye test and are being taken now and analyzed by Fruit Growers Laboratory, Inc., of Santa Paula. So far, Dr. Bailey reports, water samples taken since Saturday have not shown any visual evidence of leakage. He explained, however, that he and other experts who have been studying the dam's foundation believe that if there is much seepage it may take considerable time to show up.

MORE GROUTING

If the test shows there is a large amount of seepage, more grouting and core drilling work will have to be undertaken to give assurance that the dam's foundation will be tight and that leakage (all dams leak some) will be at a minimum. If the test proves there is not much leakage it will mean that Matilija dam has a p... at least for



(Star-Free Press Photo)

'NAVY PUTS TO SEA'—Dr. Thomas Bailey, geological consultant, and Walter Loban, the county's resident engineer, (at the oars) "put to sea" on the reservoir behind Matilija dam Saturday to start a dye test which will give information on whether there is a water leakage under the dam. Here they are shown making one of several trips across the reservoir to add potassium permanganate to the water.

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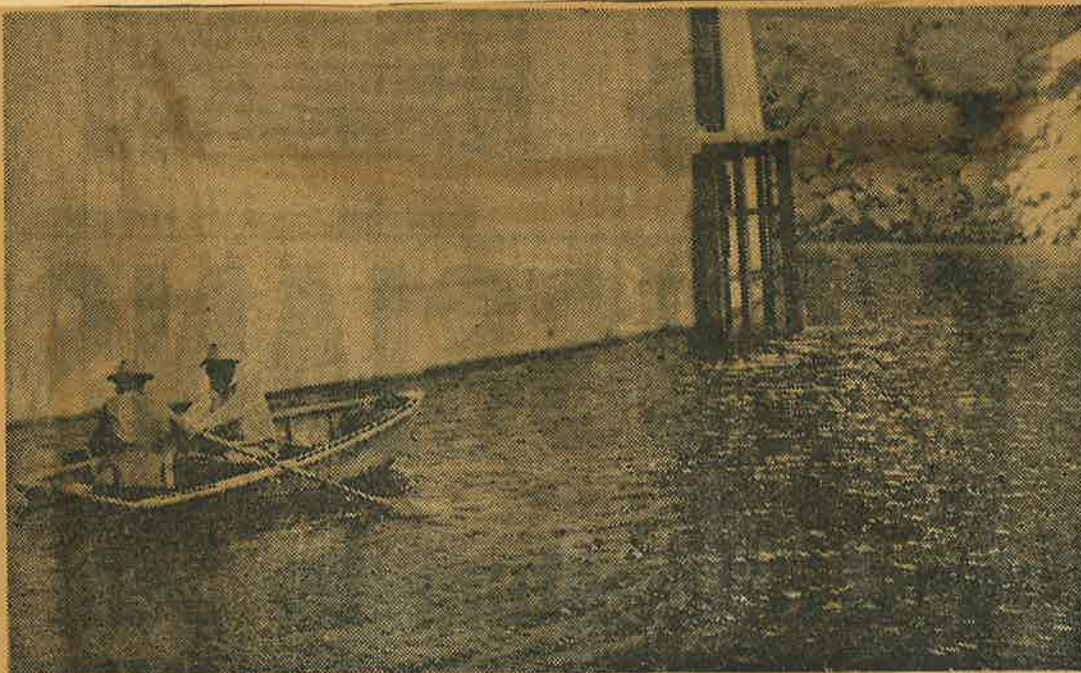
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(Star-Free Press Photo)

AN INKING FOR MATILIJA'S WATERS—As part of the check-the-leakage dye test Saturday, waters behind Matilija dam were inked with highly concentrated fluid blueing, that, without injuring the water supply nevertheless cast a deep blue tinge upon the dam's lake as soon as the blueing hit the water. That's Dr. Thomas Bailey, geological consultant, shown to the left giving the dam water its blue bath. At the oars as pilot-navigator is Walter Loban, the county's resident engineer on the dam project.

MATILIJA NAVY PUTS OUT TO SEE DAM LAKE

By MIDGE MOSSBERG

Matilija dam's two-man navy put to sea Saturday, casting dye upon the water to see what would come back.

"Manning the ship" for the voyage was Walter Loban, whose many experiences with the real navy amply qualified him for the not-too-arduous task of rowing a skiff across the waters that have gathered behind Matilija dam. In the prow of the skiff sat a barefooted man whose more dignified circumstances is usually referred to as Dr. Thomas Bailey, consulting geologist for Matilija dam.

Piled into the skiff with them was a bottle of concentrated carbon blue zanzibar that would have kept a housewife supplied in wash day blueing for many a month. Also heaped into the skiff were gunny sacks filled with potassium permanganate. Back and forth across Matilija's small lake they rowed, dragging in the water a potassium permanganate loaded sack. Matilija's long planned dye test for possible leakage under the dam was underway.

ROW AND DRAG

While Loban, resident engineer at the dam since the county took over, rowed, Doc Bailey dragged. After circling the lake close to the dam structure a couple of times with their dragging sack the "navy men" pulled close to the concrete structure of the dam. Traveling at a snail's pace, they dumped overboard nine sacks of potassium permanganate — about 50 pounds. As they rowed, they left behind them a red-purple trail on the water.

When the sacks had been dispersed behind blocks C to J (the center blocks) at the dam, they diligently made their way back and forth, back and forth over becoming-tinted water. This time, the bottle of blueing came into play. Slowly, Doc Bailey slopped into the waters of Matilija 12 pounds of fluid blueing. Quickly, the water took on a deep blue tint.

The "navy" was able to go into operation because grout drilling operations, for the first time since Dec. 4, were shut down over the weekend. The small but precious water behind the dam had been needed exclusively for drilling purposes.

HALF DONE

It was noon by the time the Matilija navy had completed the first half of its mission, rowed ashore, and placed the skiff in safe keeping (away from kids who have developed a penchant to go boating behind the dam). Loban and Doc Bailey were ready to wait—with less aquatic persons who are leaders in the Matilija dam program—for results of the dye test. The waiting period may be as long as a week or more.

If fresh water from the lake is seeping under Matilija dam, it will be discerned by the dye test. Samples of the water coming out by the apron at blocks H, G, I and J will show if there is under-the-dam seepage. If there is, blueing-colored water will appear and potassium and manganese, not present in any appreciable quantities before the dam water was treated, will show up.

So right now it's a waiting game for Matilija's navy, but while the "navy men" wait, they'll have some scrubbing to do. For when Loban and Doc Bailey departed from the dam Saturday afternoon they were slightly the worse for wear. To Loban's hands had been added the coloring of blueing. The geologist's feet, which had dangled in potassium permanganate-treated water that seeped into the skiff, were dyed so well he'll have no need to worry about getting athlete's foot.

Still Some Leakage:

Dam Problems Not All Solved Yet--

Matilija dam's problems are not cleared up; tests indicate there is leakage in the reservoir under at least several of the concrete blocks. More tests are to be made to establish just how extensive the leakage is and to determine what corrective steps will have to be taken.

That was the news solemnly presented and quietly accepted at yesterday afternoon's meeting of county flood control district supervisors. Part of the information came in a written report from Dr. Thomas L. Bailey, geological consultant, and the rest was filled in by Robert L. Ryan, flood control district engineer.

Core holes and compressed air tests indicate there is leakage in the earth foundation over which concrete blocks J, K and L rise on the left abutment—these blocks extend from M and N blocks, from which faulty material was mined last spring after concrete had been poured.

Ryan told supervisors he has notified state division of dams officials about the leakage and has asked the state men to come immediately to the dam to evaluate the trouble and determine whether excavation under the blocks will be necessary. He informed supervisors the leakage was noticed in the area about which the resident engineer of Donald R. Warren company, ousted dam engineer, had shown concern. Ryan said that, according to papers filed with the state, Warren's representative had written, in speaking of adjacent block N, "we passed something up about as bad."

Dr. Bailey wrote that a compressed air test was conceived and tried by Walter Loban, the county's resident engineer on the dam, after fresh water flowed from core hole 15-K—first at a rate of three gallons per minute and later at 10 gallons a minute. He said compressed air (at 40 pounds pressure) was passed into the core hole under the dam. Less than a minute afterwards, Dr. Bailey and

Ryan observed air bubbles rising from the floor of the reservoir.

AIR BUBBLES

"In a minute or less an area of the reservoir water about 15 feet long and 5 feet wide began to surge and foam like a small geyser as the air reached the surface of the water in large volume," Dr. Bailey wrote. "Another air bubble vent lay a few feet north, indicating an intersecting fracture."

When a similar test was made in a grout hole in block J, a churned up area developed about 40 feet northeast of the dam and west of the leaking fracture tapped by 15-K, Dr. Bailey said. He also pointed out that there were cave-ins of core holes at blocks K and L, and that fractured zones were evident. It's his opinion that weak shattered and crushed sandstone found in a core hole under block K "constitutes a dangerous zone, subject to piping and erosion or channeling of water around the northeast end of the dam."

MORE EXPERIMENTS

Dr. Bailey said similar compressed air experiments are to be made in grout holes under other blocks, particularly under H, G, F and D, to test for leakage. It was at these blocks that water samples were taken before and after a dye test was made March 6. Preliminary reports from the Fruit Growers laboratory of Santa Paula show evidence of fresh water leakage around these blocks.

During the dye test, reservoir waters behind the dam were colored with potassium permanganate to see if either potassium or manganese, hardly present in the dam water, could be discerned. According to first reports made by Fruit Growers laboratory, samples of water taken after the dye was spread indicate there is manganese in the water, particularly under block F and vicinity. "This clearly proves leakage from the reservoir through the open grout holes where water samples were collected," Dr. Bailey declared.

START THURSDAY

Ryan told the board that the consultants suggested bentonite treatment is expected to start on Thursday if the weather is fair. Bentonite, a soupy clay material that swells under water, is to be dumped into the dam's reservoir. Forced by compressed air, the material is expected to sink to the bottom of the reservoir, enter cracks and crevices and seal them up.

Civil Engineers Urged To Probe Matilija Dam Job

The American Society of Civil Engineers has been urged to conduct a thorough investigation of much-muddled Matilija dam "in the interest of protecting the integrity of the (engineering) profession."

Suggestion for the investigation comes from officials of the Western Construction News in the March issue of the construction magazine. The article urging the investigation points out that the dam is standing today on what may be an unsafe foundation, that water storage to top level isn't permitted at the present time, that the costs have far exceeded original estimates and that eminent engineers and geologists who have visited the damsite have contended that risks can not be taken of letting leakage develop—that there must be improvement.

The magazine article makes no charges that the dam is unsafe or that any one person or group should be blamed. It does suggest, however, there should be an ASCE investigation as a means of bringing to light whether any persons who had a principal part in the job are guilty of negligence or misrepresentation or whether they should be completely cleared of any blame.

Matilija Doesn't Need Tender Yet

AFTER considerable discussion, county flood control district supervisors yesterday afternoon decided to shelve appointment of a dam tender for Matilija dam for the time being.

They agreed that since construction work still is underway on Matilija dam that no dam tender is needed now and should not be hired until the need arises. The decision was made after Zone One Manager Neil Stiver recommended that John P. O'Neill of Ojai, who placed highest in recent competitive examinations, be hired immediately.

Stiver felt that O'Neill, experienced in pipe fitting, electrical and carpentry work, could learn the duties of a dam tender while construction is underway and could fill in by working on the now-county-owned Matilija hot springs resort.

NO NEED NOW

Questioned by supervisors, County Flood Control District Engineer Robert Ryan said he saw no need for a dam tender now but added that he would be glad to instruct such an official about procedure in caring for operation of dam valves when the time arises. He was backed by Supervisor Robert Lefever who agreed now isn't the time to hire a dam tender "since we're not going to have any water this year."

Lefever told Stiver if he needs help in getting the resort fixed so that it can be put out to lease that the board will see that he can hire help. He and other board members ordered Stiver to review the resort with Russell Cook, Dr. Frank Gallison, county health officer, and Jay McNabb, building inspector, and then come before the board next week with a report on the minimum requirements that must be met to put the resort in order for leasing in May.

ESTIMATED COST

Stiver estimated it would cost \$7,000 to fix the resort, its swimming pool and buildings; supervisors, however, don't want to spend that much unless it is absolutely necessary.

Carroll Lind of Mound once again appeared before the supervisors and asked that work be undertaken on the storm ditch at 118 and 101 highways. Pointing out that the March 24 flash storm had caused plenty of trouble and that water, from various sources, overflowed the ditch and deluged his property, Lind said he'd fight and continue to fight to get county action on fixing the ditch.

Ryan told the board that a policy would have to be set on what ditches and check dams the county is to take over as flood control work. He also pointed out that Lind and other property owners have not decided a county right-of-way for the ditch area. Supervisors took no action.

Common sense *See file 3-26-41*
ANXIETY HAS COMPANY

The citizens of Santa Barbara have a water problem, but they're not alone. This article is devoted to the water problem in a neighboring county.

The Ventura County Supervisors have ousted the Donald R. Warren Company, from its job of engineering on the Matilija Dam project. At the same time the engineering firm's suit for \$77,000 in the Ventura County Superior Court was dismissed without prejudice, upon motion of plaintiff's attorney. That "without prejudice" stipulation means the case can and probably will be re-filed against the county.

Oftentimes when kids pull a worse than usual prank which ends in trouble, one is singled out as the bad one, and the others gang up on their erstwhile playmate, with apologies to each other and the public for ever having associated with such a bad actor. That has been the prevailing spirit around the Ventura Courthouse during the last few days, with all eyes on the Warren Company as the culprit.

Trebled Cost Estimate

The people were promised that 7000 acre feet of water would be stored behind Matilija Dam and that the project cost would be kept within three fourths of a million dollars. The estimated cost now stands at three times that amount—\$2,250,000. The writer cannot see how the Ventura County Supervisors can be exonerated of blame in that additional cost of a million and a half dollars. Their guess was 200 percent off—and that is much too much.

Now let's study briefly the measure of reformation experienced by the Supervisors to the south—just how clearly they saw the path of right—on ousting the Warren Company. For this study we are using a concurrent action.

At the time the Warren Company was ousted Ventura County settled out of court with Contractors Atkinson et al. The contracting firm had filed fabulous claims totalling more than \$200,000 and the settlement was for slightly less than \$100,000. That appears pretty sharp on first glance, but the appearance of sharpness doesn't hold up on analysis.

Outside Specialist On Job

The services of an outside attorney, supposedly an expert "settler-out-of-courter," were obtained. This legal specialist is reliably reported to have said just prior to the settlement that he and Ventura County's District Attorney agreed the only claim of the contracting firm with possible merit was one for \$51,000. Nevertheless, the settlement

was made for \$40,000 in excess of that amount.

It is also reliably reported that the District Attorney was tipped off prior to the settlement that the contracting firm would probably settle for less than \$40,000. Instead of pressing for such a settlement, however, with effort and reasonable delay, the informant was "put on the spot" by the outside legal specialist, and settlement was made forthwith for between ninety and a hundred thousand dollars.

Defended In Advance

Robert Ryan, Ventura County's Engineer, is now in charge of the Matilija Dam project, and he is hereby defended in advance for the trouble in which he is likely to find himself. Indeed the Supervisors of Ventura County have a great deal more to account for in the over all mishandling of their water problem than merely playing with a bad boy engineer.

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