

# Water treatment may be answer to tainted drainage

By Mark Grossi

Fresno Bee

February 13, 2013

**FIREBAUGH** – A \$30 million water treatment plant rises slowly over this quiet prairie on the San Joaquin Valley's west side where nature has both blessed and cursed farmers.

It's a federal experiment amid 97,000 acres where annual farm production adds nearly a half-billion dollars to the economy.

Irrigating this fertile land leaves farmers with a nasty flush of drainage – natural salts and metals from a long-gone inland sea. Water treatment might be the final step in putting an end to a problem that has threatened the area for decades.

In the past, the drainage was discharged through a sensitive marshland on its way to the San Joaquin River, tainting plants and animal life along the way. But in the 1990s, farmers started the Grassland Bypass Project, funneling water away from the marshland but still sending it to the river. They also began reducing drainage with conservation and by reusing water on salt-tolerant plants.

They achieved more than 80 percent reduction in the bad water and 90 percent reduction of a long-time villain, selenium. It is a naturally occurring element that made national headlines in the 1980s for causing a wildlife disaster on the west side.

The farmers on the 97,000 acres were not connected to the selenium disaster, but they have been living in its shadow for nearly 30 years, working to eliminate the contaminant. Now, it's time to finish the job, says Dennis Falaschi, general manager of the Panoche Drainage District, one of the local agencies involved in the work. "We're going to take it to zero," he said.

Environmentalists and activists are split over the Grassland Bypass Project. The Environmental Defense Fund likes the idea of reducing the tainted water and protecting the marshland. But fishing groups filed suit to stop it in 2011.

Bill Jennings of the California Sportfishing Protection Alliance, one of the plaintiffs, said the project is impressive, but fish and habitat are being affected downstream. The project has had its chance, he said. The drainage should have been stopped long ago, he said.

"Bottom line, discharges are still going into the river," he said. "And I'm not sure there is any solution. Maybe some lands should never have been irrigated."

The land here has shallow clay layers below the ground, and the salty irrigation drainage can't penetrate them. So the bad water collects, rising to the root zones of plants and eventually poisoning the land.

The U.S. Bureau of Reclamation is funding the treatment plant project. If it is successful, a larger plant could be built to serve the area and perhaps become part of the bureau's answer to the wider selenium problem.

The bureau has long been at the center of the controversy surrounding the 1980s selenium disaster at Kesterson Reservoir in Merced County. The agency directed selenium-laced irrigation drainage from Westlands Water District – which is different from the Grassland group – to evaporation ponds at Kesterson. High concentrations of selenium killed and maimed vast numbers shorebirds and other wildlife.

Bureau engineers said the new water treatment will begin with reverse osmosis – forcing the flow of bad water through a membrane that traps selenium, salts and other contaminants. The treatment cleans up half the water, which can be reused in irrigation. The other half becomes even more concentrated with selenium. It goes into massive tanks where bacteria will scavenge contaminants, resulting in roughly the same quality as the water cleaned up by reverse osmosis.

In the end, a concentrated selenium sludge remains, engineers said. Classified as hazardous waste, it must be taken to a special landfill.

Read more here: [http://www.modbee.com/2013/02/13/2575743\\_water-treatment-may-be-answer.html#storylink=cpy](http://www.modbee.com/2013/02/13/2575743_water-treatment-may-be-answer.html#storylink=cpy)