

Year 2000 and 2001 Priority Actions

Selenium Integrated Farm Management - 10

1. General Description of the Action.

Among the most promising or popular methods for selenium control, two stand out; Integrated farm management of selenium and salinity, and modified irrigation practices coupled with real-time management. Our goal is to eliminate adverse selenium effects on fish and wildlife while preserving farming in the Grasslands area. These activities are our first steps.

Selenium is a naturally occurring salt in the western hills of the San Joaquin Valley. Selenium is a reproductive toxin at moderate concentrations and is an essential mineral in lower concentrations.

Selenium is leached from the soil in the Grasslands area because of salt build up and normal irrigation practices. There are several control techniques for selenium in the agricultural drain water. Most have good value in the short term and a few have good sustainable operating levels. Many are combined to form Integrated farm management of selenium.

Another method to control selenium concentrations is through assimilative capacity of the river. Two sloughs in the Grasslands area contribute the majority of selenium to the San Joaquin River. The theory here is to avoid exceeding a in-stream ambient water quality standard for selenium, while still allowing some discharge of selenium laden water. This discharge technique is called real-time management of selenium.

It is thought that there is no one perfect solution to the selenium issue and that several corrective measures will have to be employed to solve the situation.

Selenium reduction is being proposed to benefit the Bay-Delta ecosystem.

2. Cost Estimates

This large scale project will cost about \$0.5 million for changes in operation and initiating use of Integrated farm irrigation and drain control techniques in the first year. Subsequent years may have similar costs for further testing or higher costs for basin wide implementation. Full scale implementation costs could be shared by affected parties and other interested groups.

About two months of staff time should be dedicated to program development and synthesis of the results into the water quality program actions. The results of studies like these will dictate the future of selenium control in the Central Valley.

3. Program Administration and Governance

The CALFED Water Quality Program should oversee the scope of the project and preparation of the final reports. DWR or the US Bureau of Reclamation should be the contract agency.

4. Program Coordination

The Department of Water Resources, Department of Food and Agriculture, US Bureau of Reclamation, and US Geological Survey have staff that have worked on each of these programs. DWR has agricultural engineers in the San Joaquin District that have worked on test plots of the Integrated farm management methods, contracts should be let through this office. (Vashek Cervinka, Nigel Quinn)

The Department of Water Resources' Bryte Chemical Laboratories could provide necessary laboratory testing.

The Grasslands Bypass project headed up by California Resources Agency and The Department of the Interior deals with selenium issues in the area and will be consulted as necessary during the studies. The goals of each agency's projects are to reduce selenium loading, CALFED agrees with that goal.

5. Schedule

Selection of a large test section could be accomplished by late summer 1999. Implementation of changes could be accomplished during the early fall months and the official change of operation happens during the next growing season. Since there are gradual changes using this method, the operational changes must remain in place for several years.