SUMMARY INFORMATION ON THE STATUS OF THE

PROPOSED PROJECT TO USE THE SAN LUIS DRAIN TO MANAGE DRAINAGE IN THE GRASSLANDS AREA OF CALIFORNIA

JUNE 15, 1994

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PANOCHE WATER AND DRAINAGE DISTRICT
52027 W. Althea Ave.
Firebaugh, CA. 93622

August 5, 1994
REV. 5/5/95

"Capital Investments Toward Improved Irrigation Practices"

- ON FARM IRRIGATION SYSTEMS

SEE MAP "INVESTMENT IN IMPROVED IRRIGATION"

SPRINKLER SYSTEMS:	23,329 ACRES @ $400.00 / ACRE=	$ 9,331,600.00
DRIP SYSTEMS:	2,970 ACRES @ $850.00 / ACRE =	$ 2,524,500.00
GATED PIPE SYSTEMS:	1,200 ACRES @ $200.00 / ACRE =	$ 240,000.00
	TOTAL	$ 12,096,100.00

- DISTRICT IMPROVEMENTS

GRAVITY TURNOUT FROM THE CALIFORNIA AQUEDUCT Mile Post 97.51L 250 C.F.S. CAPACITY

FOR A BREAKDOWN SEE:
" CONSTRUCTION IN PROGRESS SLC TURNOUT ACCT. NUMBER 11263 "

TOTAL $ 4,615,761.42

- DRAINAGE IMPROVEMENTS

TILE SUMPS METERED SEE MAP "DISTRIBUTION AND DRAINAGE MAP"

35 SITES W/METERS @ $ 880.00 EA TOTAL	$ 30,800.00
YEARLY MAINTENANCE $125.00 EACH	$ 4,375.00
TOTAL	$ 35,175.00

SELENIUM REMOVAL PROJECTS

HARZA ENGINEERING PHASE I 1985 - 1987	$ 76,110.00
HARZA ENGINEERING PHASE I I 1990 - 1991	$ 136,489.25
MMRV ION EXCHANGE PROJECT 1991 - 1992	$ 31,536.54
BOYLE ENGINEERING ION EXCHANGE - 1994	$ 55,551.75
ALGAL-BACTERIAL L.B.LAB./UC DAVIS -1994 ON GOING	$ 30,000.00
TOTAL	$ 329,687.54

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PROPOSED PROJECT TO USE THE SAN LUIS DRAIN
TO MANAGE DRAINAGE IN THE GRASSLAND AREA OF CALIFORNIA

June 15, 1994

An alternate transfer system through the Grassland Water District and adjacent grasslands is required for conveyance of agricultural drainage waters (both surface runoff and subsurface discharge) to the San Joaquin River. The alternate route is needed because the present system limits and restricts flexibility in providing freshwater to manage wetlands and refuges.

The drainage water comes from all or portions of Panoche Drainage District (including Panoche Water District), Broadview Water District, Pacheco Water District and Charleston Drainage District (a portion of San Luis Water District). The area encompasses approximately 60,000 acres of which approximately 31,000 acres have subsurface drainage systems (see attached map).

The drainage water presently is discharged to the San Joaquin River through canal conveyance systems in the Grassland Water District and adjacent areas. These canals are also used as fresh water delivery systems to Grassland Water District and state and federal wetlands. Historically the drainage waters were used for wetland purposes including the flood up for the fall and winter waterfowl season. When these waters were discovered to have elevated selenium concentrations, the U. S. Fish and Wildlife Service recommended that drainage waters above 2 ppb selenium not be used for wetlands flooding.

The proposed project would remove the drainage water entirely out of the channels in the Grassland Water District and discharge it into the San Luis Drain at a point near Russell Avenue (Milepost 105.72, Check 19) as shown on the attached map. The drain water would then be conveyed approximately 28 miles in the San Luis Drain to its northerly terminus at Mud Slough (North, at Milepost 78.65). A short channel would then be enlarged to convey the waters to Mud Slough (North). The drain waters would then continue six miles to the San Joaquin River and three miles to the confluence with the Merced River.

The benefits of the proposal are significant to Grassland Water District and to the adjacent state and federal refuges. Some of the benefits are as follows:

- Conveyance systems will be freed up for delivery of fresh water to the wetland areas through existing supplies and those made available by the Central Valley Project Improvement Act. Drainage water would be removed from conveyance channels totaling 93 miles as follows:

Salt Slough at the San Joaquin River to Mud Slough (South) at Santa Fe Grade	23 Miles
San Luis Canal	15 Miles
Santa Fe Canal	17 Miles
Fremont Canal	9 Miles
Eagle Ditch	4 Miles
Kesterson Ditch	2 Miles
Mud Slough (South)	1 Mile
Agatha Canal	7 Miles
Camp 13 Ditch	6 Miles
Gadwall Canal	5 Miles
Mallard Ditch	3 Miles
Sorsky Ditch	1 Mile
TOTAL	**93 Miles**

- Good quality water from areas upslope of the Grassland area could be collected and put to use in the Grassland Water District and in the state and

federal refuges. Currently this water is mixed with drainage water and is not usable.

- The existing San Luis Drain would be beneficially used and not allowed to deteriorate.

- The beneficial uses and habitat along Salt Slough and other channels as noted above would improve.

The project has met CEQA and NEPA requirements. Mitigation measures included the formation of an Oversight Committee and Technical Advisory Committee to provide oversight of the project. An extensive monitoring program has been approved and is being implemented. Various permits required for the project have been issued.

Three main issues remain to be resolved to proceed with the project.

1. ALL USERS NEED TO BE SIGNATORIES TO THE AGREEMENT WITH THE U.S. BUREAU OF RECLAMATION.

   The plan has been modified so that the drainage water from the Federal Districts can be separated and only drainage water from the Federal Districts will be discharged into the San Luis Drain. This will allow for all those parties discharging into the Drain to sign the proposed agreement. This will entail the construction of a facility around the South Grasslands which will allow drainage water to enter the San Luis Drain at a point easterly of Grassland Water District as described above.

2. SELENIUM LOAD REDUCTION MILESTONES.

   A subcommittee of the Technical Advisory Committee including the Regional Water Quality Control Board, Environmental Defense Fund, the Grassland Drainers and the Bureau of Reclamation are developing selenium load reduction goals that would be a part of the agreement for the Use of the San Luis Drain. Load reduction milestones need to be developed so that there are assurances that use of the project will not increase concentrations of selenium and other constituents above what would occur without the project and to allow for the discharge to meet proposed water quality objectives.

3. IDENTIFICATION OF THE LONG TERM PLAN.

The long term plan will be identified in the agreement with the Bureau of Reclamation. The first phase of the long term plan, which would be conveyance of water around the South Grasslands, would be implemented initially as a part of the project. The long term plan to extend the San Luis Drain to a point downstream of the Merced River would be studied during the five-year interim use of the project.

Significant drainage reduction has occurred since the discovery of selenium in 1985 at Kesterson Reservoir. The graph on page 6 shows the volume of drainage water and pounds of selenium discharged by the Federal Districts since 1985. The reductions have occurred due to on-farm water conservation practices and reduction in water supplies caused by drought conditions.

Additional conservation measures will be required to meet proposed target reductions in pounds of selenium to be discharged. The graph on page 7 indicates an estimate of these reductions. The graph shows the current levels of discharge of selenium for water year 1992-93. Proposed reductions include source control, which would include better irrigation practices thereby reducing the drainage discharge. Significant acreage within the Federal Districts has been converted to efficient irrigation systems, such as drip irrigation and sprinkler irrigation, to improve water management practices. A reduction has also been included for recirculation, which would require the construction of pipeline systems to convey drainage waters to the irrigation supply points and mixing this water with the irrigation supply. The deficits that remain would be met through storage of water with regulating ponds and/or restricting drainage discharge.

It is anticipated that a final agreement will be negotiated by September 1994, with drainage being discharged into the San Luis Drain in the fall of 1995.

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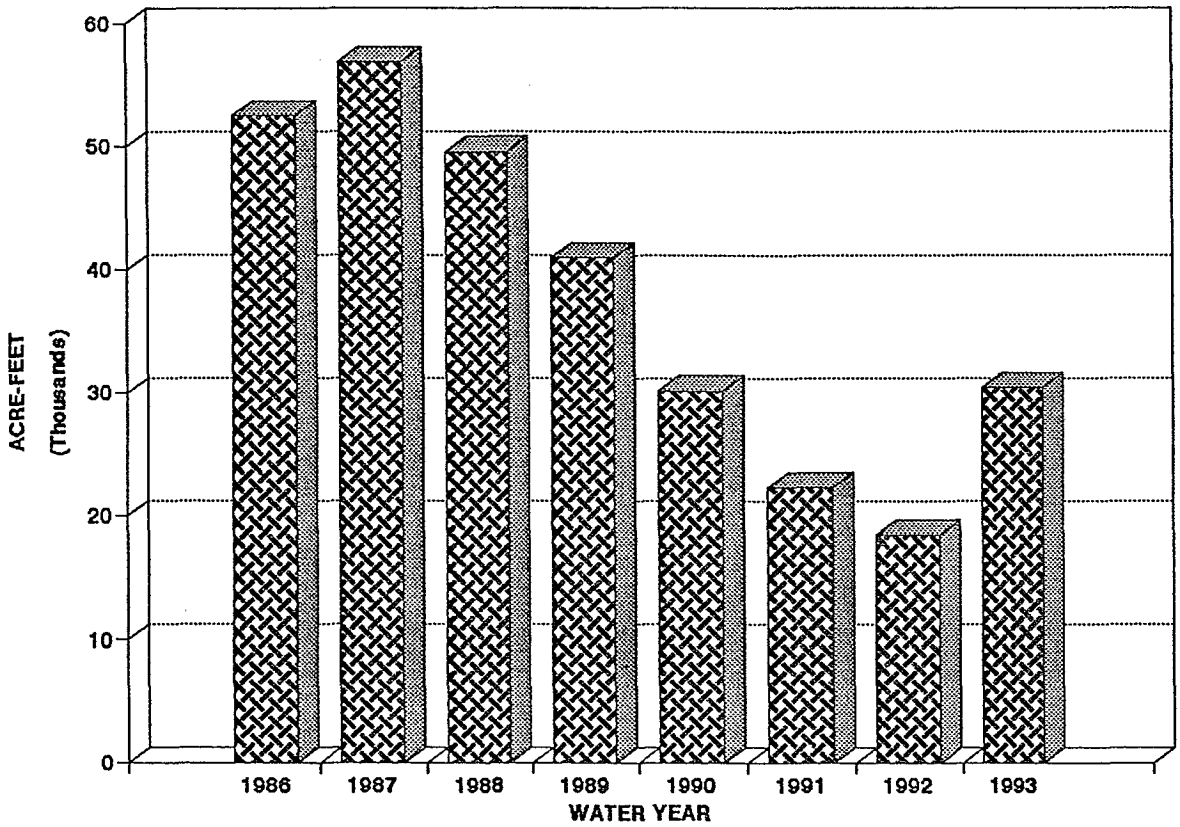
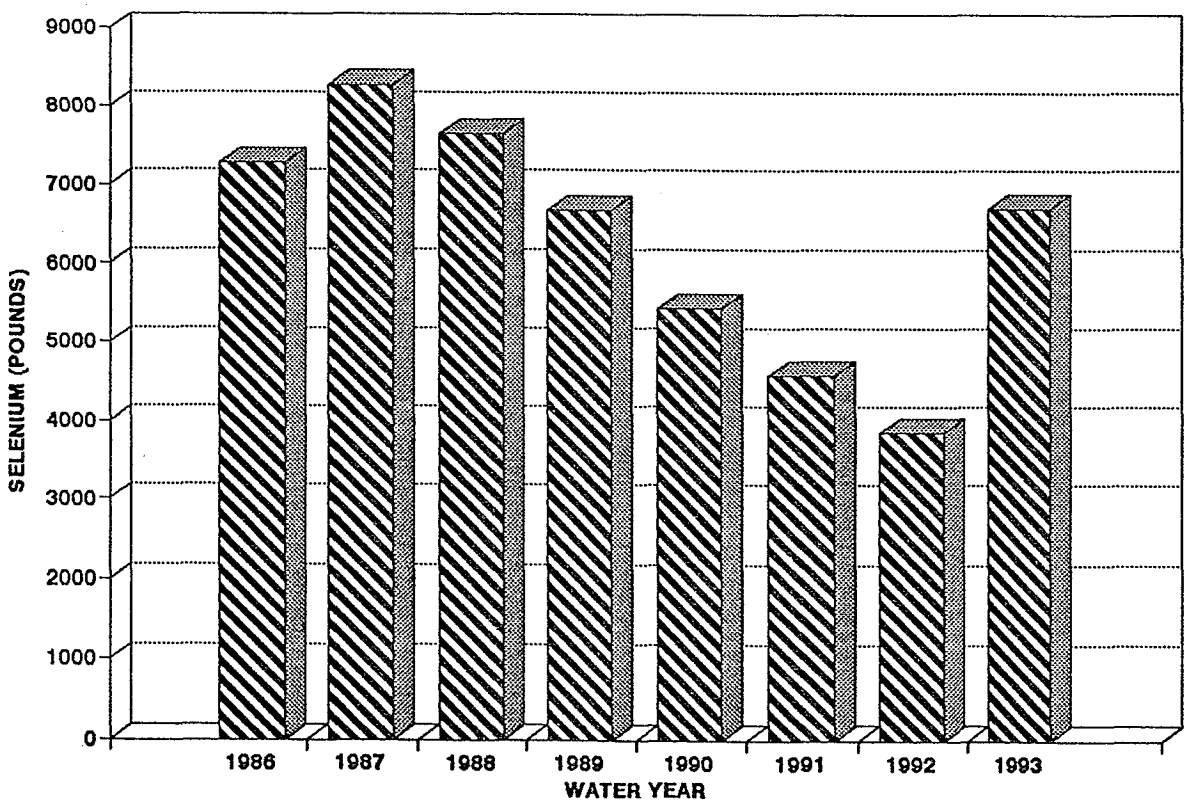
DRAINAGE DISCHARGE FROM FEDERAL CONTRACTORS

ACRE -FEET

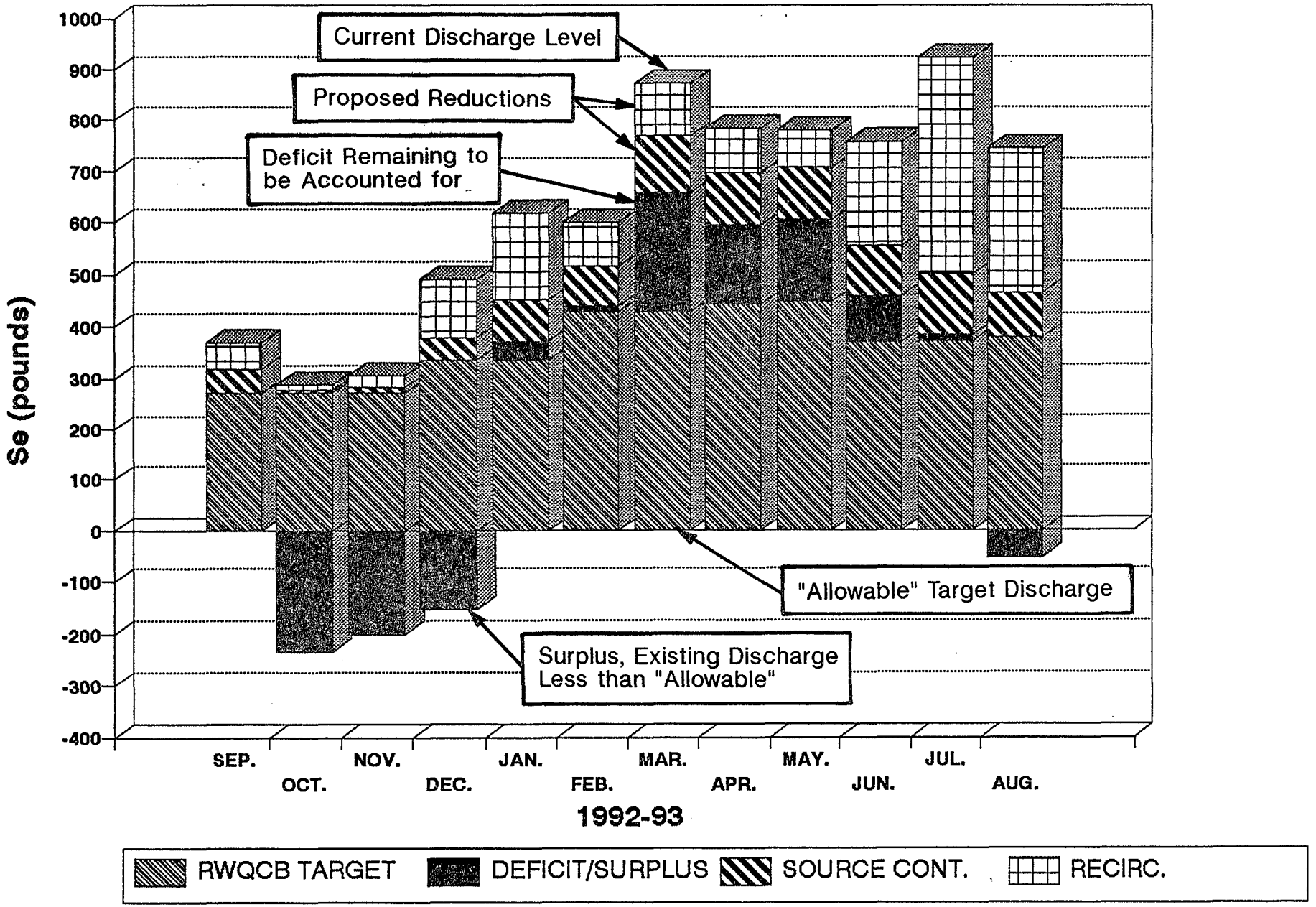


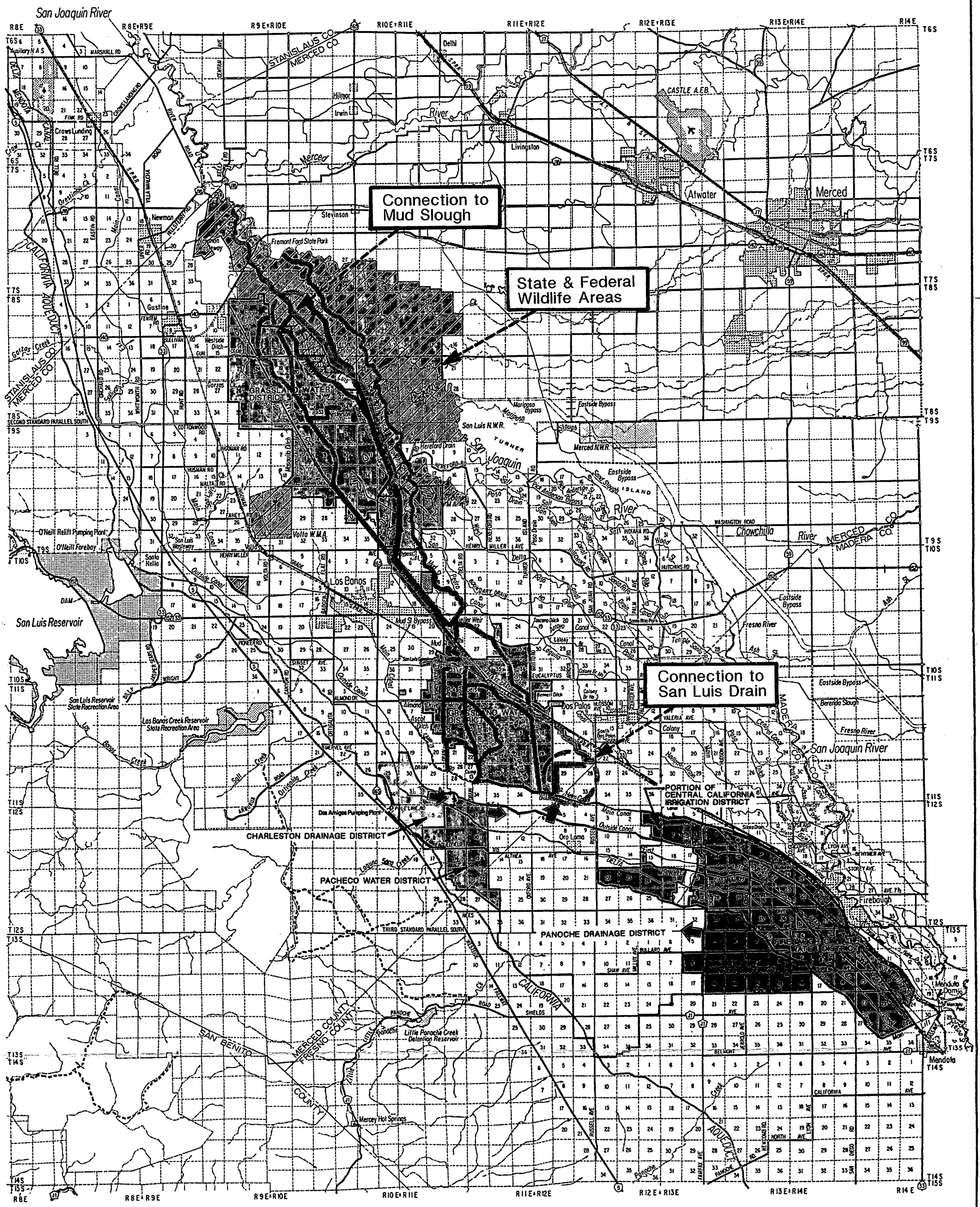
POUNDS OF SELENIUM



LOAD ALLOCATION FOR FEDERAL CONTRACTORS IN ABOVE NORMAL/WET YEARS

More Violations Allowed in Summer Months





LEGEND

- County Line
- Grant Boundary
- River
- Creek, Slough, Canal, Ditch (as noted)
- Drain
- Interstate Highway
- State Highway
- County Sign Route
- Major County Road or City Street
- Other Roads
- Railroad
- City, Town

ABBREVIATIONS

National Wildlife Refuge	N.W.R.
Waterfowl Management Area	W.M.A.
Creek	Ck
Slough	Sl
Avenue	AVE
Road	RD
Drive	DR
County	CO.
Southern Pacific Railway	S.P.R.R.
Atchison Topeka and Santa Fe Railway	A.T.&S.F.R.R.

SCALE OF MILES 0 1 2 3 4 5 6

Proposed Action :

- Channels that will no longer have unusable drain water.
- Channels with drain water.
- Conveyance of drain water in San Luis Drain.
- Location of project features.

SUMMERS ENGINEERING, INC.
CONSULTING ENGINEERS
HANFORD CALIFORNIA
DECEMBER 1989

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