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Subject: DCC gate operations and Delta conditions for DAT call

Decwq99.wpd

December 1999 Delta Cross Channel Gate Operations

The Bureau of Reclamation and the Department of Water Resources have a State Water Resources Control Board water quality requirement to meet a chloride standard of not more than 250 mg/l at export locations, including Contra Costa Pumping Plant #1. Typically, the projects operate to meet this water quality standard by 1) operation of the Delta cross channel gates, 2) adjusting exports, and 3) adjusting Delta inflow. The cross channel gates were closed for fish protection actions on November 26, 1999, and we have seen a steady increase in salinity in the interior Delta water since that time.

Project operators typically monitor water quality stations from Martinez to Bacon with emphasis on Jersey Point, Holland, Bacon, and Bethel for protection of the CCC pp#1 chloride standard. The objective is to prevent excess salinity from entering the interior Delta and Rock Slough. Conditions though 12/12/99 are as follows:

Station	Profile EC mS/cm mS/cm	12/12/99 mS/cm	12/11/99 mS/cm (Daily avg.)	12/10/99
Jersey Point	1.8	1.59	1.68	1.88
Bethel	1.0	1.10	1.12	1.12
Holland	0.8	1.07	1.1	1.11
Bacon	0.7	1.03	1.04	1.02

Typically, if the EC readings exceed the profile points, we would expect to see chlorides at Rock Slough approach 250 mg/l. There is a lag from when salinity shows up at Jersey to when it is observed at Bethel and Rock Slough. Under normal export operations at Tracy, Banks, and Contra Costa at Rock Slough, an increase in salinity at Jersey Point would take 1 to 2 weeks to show up at Rock Slough.

The most effective way to reduce the salinity in the interior Delta for the chloride standard is by opening the cross channel gates. This allows about a third of the Freeport flow to enter the interior Delta as opposed to about 15% of the Freeport flow with the gates closed. In order to achieve the best "flush" in the interior Delta, opening the gates in conjunction with continued exports on the neap tidal cycle provide the greatest benefit. Reduced exports with the gates open may provide some benefit at a reduced rate, and export reductions with the gates closed may provide a marginal benefit, but effects are largely unknown.

The release from Oroville has been increased to maintain Delta inflow, but the water quality benefit is very limited with the gates closed. The current forecast is for dry conditions over the next week and Shasta and Folsom Reservoir releases may be reduced as flood control storage levels are reached.

The Delta is expected to begin a spring tidal cycle by mid week and we expect to see a return to increasing interior Delta salinity. In order to not exceed 250 mg/l at CCC pp#1, we are targeting Jersey at 1.3 to 1.4 mS/cm, Bethel at 0.6 to 0.7, Holland at 0.5 to 0.6, and Bacon at 0.4 to 0.5. It has become clear that these targets will not be met with the gates closed.