

CAP Category: Uncertainty Reduction Studies

Baseline Activity: CB-18(3) – Determine Cu-L1 and L2 complex concentrations (copper speciation)

CB-17(5) – Assess feasibility of phytoplankton bioassays to measure toxicity

Region of Applicability: Bay-wide

Linkage to Copper Reduction: Ambient free ionic copper (not complexed with organic ligands) is form toxic to phytoplankton

Performance Measure(s): Bruland speciation work schedule. Ambient free ionic copper concentrations.

Lead Party	Report/Source	Actions	Effectiveness Evaluation	Future Actions
FY 2004 – 2005		PROPOSED WORKPLAN TASKS		
RWQCB		Determine if there is a need for additional speciation monitoring. If so, develop schedule, sampling plan and funding source.	Consider as a phase I action if ambient Cu trigger is exceeded.	
FY 2003 – 2004		Actions Accomplished in Period		
RWQCB	July 2003 draft Bruland Reports April 2001 Final	Draft report on copper speciation with results of January and March 2003 sampling released. Similar results to 2001 sampling. Ambient free ionic copper levels 100 times lower than toxic threshold. Final report released April 2004.	Results appear to indicate no need to further developing toxicity bioassay methodologies (CB-17 (5)).	
FY 2003 – 2004		PROPOSED WORKPLAN TASKS		
RWQCB		Obtain final Bruland report		

Lead Party	Report/Source	Actions	Effectiveness Evaluation	Future Actions
FY 2002-2003		Actions Accomplished in Period		
RWQCB Track and encourage (funder)	May 2002 interim report Annual report until completed	RWQCB contracted with Ken Bruland during 2001 to evaluate copper speciation at seven sites from Dumbarton Bridge to Grizzly Bay. Samples were collected in June 2001 and during July – August 2001. Results in draft report distributed by RWQCB staff in May 2002 showed that over 99.99% of total copper concentrations were complexed by L1 (strong) ligands at all locations and on both cruises. Maximum free ionic copper concentration was 10^{-13} M.	Program staff will coordinate with RWQCB staff to determine what additional monitoring is proposed and when the results to be reported. IAR 5.3.1 cited literature threshold concentration of 10^{-11} M (100 times that measured in Bay).	Secure funding to collect results from total of 4 – 6 sample events.
RWQCB CB-17(5)	Pending	RWQCB staff to prepare an issue paper on the feasibility and cost of conducting phytoplankton bioassays to directly measure copper toxicity.	Availability of appropriate methodology uncertain.	Copper speciation results may make this unnecessary.