Appendix D

NPDES Discharge Monitoring Data

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To assess the effects of hatchery discharges on receiving water quality and resultant water quality effects on beneficial uses, a list of potential chemical constituents of concern was identified for assessment purposes. The list of potential constituents of concern was determined from available discharger monitoring reports (DMRs) prepared by the California Department of Fish and Game (DFG) fish hatcheries pursuant to the individual National Pollutant Discharge Elimination System (NPDES) permits for each facility.

The water quality impact assessment for this environmental impact report/environmental impact statement (EIR/EIS) was conducted for those constituents having potential for impacts on designated beneficial uses. The assessment evaluates compliance with existing NPDES permit limits and water quality objectives established for the protection of designated beneficial uses. Hatchery discharge and receiving data were compiled, and maximum constituent concentrations were identified. Concentrations were compared with applicable federal water quality criteria (e.g., the California Toxics Rule) and state water quality objectives contained in water quality control plans (basin plans). For pollutants of concern with no federal or state adopted criteria, the NPDES permits, U.S. Environmental Protection Agency (EPA) 304(a) recommended water quality criteria, and scientific literature were reviewed to identify appropriate water quality thresholds. Constituents detected above an applicable water quality standard or other relevant guidance values where no standard exists (e.g., U.S. EPA recommended criteria), at least once, were evaluated further in this EIR/EIS.

Table D-1 summarizes water quality data for parameters that are routinely monitored in the hatchery discharges.

References Cited

Ayers, R. S., and D. W. Westcot. 1985. *Water Quality for Agriculture. Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1*. p. 173. Rome, Italy.

Table D-1. Summary of Conventional and Routine Parameters Monitored in Hatchery Discharge Water and Receiving Water

Hatchery	Period of Record	Number of Monitoring Reports [a]	Net Total Suspended Solids [b]	Net Turbidity [c]	pH [d]	Dissolved Oxygen [e]	Electrical Conductivity [f]	Total Dissolved Solids [f]
Objective			<5 [g]	<1 [h]	>6.5, <8.5 [i]	>7.0 [j]	700 [k]	450 [k]
Units			mg/L	NTU	–	mg/L	µS/cm	mg/L
Salmon/Steelhead Hatcheries								
Coyote Valley Fish Facility[q]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Feather River Hatchery	January 2004–November 2008	46	3.1	–	7.1	8.3	136	43
Feather River Hatchery Thermalito Annex	January 2004–December 2008	51	5.1	0.5	8.7	8.1	960	–
Iron Gate Hatchery	January 2008–December 2008	12	5	1.6	7.5	6.3	–	125 [l]
Mad River Hatchery	April 2007–November 2008	18	3.7	1.9	7.1 [m]		–	–
Merced River Hatchery	January 2004-December 2008	54	10.7	3.2	6.5 –	7.9	88	–
Mokelumne River Hatchery	January 2004–March 2008	51	25.6	0.81	6.1	6.7	398	95
Nimbus Hatchery	January 2004–November 2008	65	17.2	1.85	6.6	5.2	2,310	1,220
Trinity River Hatchery	January 2004– December 2008	24	2.8	0.8	7.1	8.0	–	–
Warm Springs Hatchery	January 2004–December 2008	59	8.6	1.8	6.7	7.9[n]		–
Trout Hatcheries								
American River Hatchery	See Nimbus Hatchery					–		
Black Rock Rearing Ponds	January 2004–September 2008	18	14 [n]	–	7.2	4.2	253	182
Crystal Lake Hatchery	January 2004–November 2008	57	4.7	0.4	5.8 [n]	5.9	146	–
Darrah Springs Hatchery	August 2007–November 2008	58	5.4	1.6	7.0	7.0	542	–
Fillmore Hatchery	No data	–	–	–	–	–	–	–
Fish Springs Hatchery	January 2004–October	26	4.0 [n]	1.1 [o]	7.1	5.3 [p]	321	256

Table D-1. Continued

Hatchery	Period of Record	Number of Monitoring Reports [a]	Net Total Suspended Solids [b]	Net Turbidity [c]	pH [d]	Dissolved Oxygen [e]	Electrical Conductivity [f]	Total Dissolved Solids [f]
	2008							
Hot Creek Hatchery	January 2004–November 2008	33	10.4	-0.3	6.8	7.9	–	–
Kern River Planting Base	No data	–	–	–	–	–	–	–
Moccasin Creek Hatchery	January 2004–December 2008	33	3.1 [n]	2.8	5.5	7.0	–	–
Mojave River Hatchery	January 2004–September 2008	23	6.2 [n]	4.9 [n]	[n]	3.3 [n]		–
Mount Shasta Hatchery	January 2004–November 2008	45	20.0	0.3 9	6.6	8.1 –	109	–
Mount Whitney Hatchery	February 2004–June 2008	13	0.7	–	7.0	9.5	114	–
San Joaquin Hatchery	January 2006–July 2008	28	1.6	0.5	6.6	6.4	65.4	–
Silverado Fisheries Base	No data	–	–	–	–	–	–	–

Notes:

Mg/L = milligrams per liter.

NTU = nephelometric turbidity unit.

µS/cm = microsiemens per centimeter.

N/A = not applicable.

[a] Number of monitoring reports within the period of record; number of samples varies depending on monitoring frequency.

[b] Net total suspended solids (TSS) calculated as hatchery discharge concentration minus hatchery source water concentration, with maximum value in the period of record displayed.

[c] Net turbidity calculated as downstream (R2) minus upstream (R1) receiving water concentration, with maximum value in the period of record displayed.

[d] Values shown as minimum pH at downstream (R2) site; if a sample exceeded one of the objectives (i.e., minimum <6.5 or maximum >8.5), the reported largest exceedance is displayed.

[e] Values shown as minimum downstream (R2) dissolved oxygen (DO) concentration; R2-R1 difference in parentheses for hatcheries with R2 <7.0 mg/L guidance value.

[f] Maximum hatchery discharge concentration.

[g] Lowest effluent limitation in NPDES permits for DFG hatcheries expressed as an average monthly effluent limitation (AMEL).

[h] Screening value based on lowest applicable basin plan objective expressed as the allowable increase downstream of a discharge.

[i] Basin plan objective.

[j] Screening based on most restrictive basin plan dissolved oxygen (DO) objective for Cold Freshwater Habitat (COLD) designated use; data also reviewed for more restrictive objectives for applicable spawning (SPWN) beneficial uses and applicable seasonal conditions.

[k] Agricultural goal used by Central Valley Regional Water Quality Control Board for interpretation of chemical narrative water quality objective; expressed as a long-term annual average in NPDES permits. Based on *Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29 Rev. 1* (Ayers and Westcot 1985).

[l] Hatchery total dissolved solids (TDS) not measured on a routine basis; maximum hatchery discharge concentration in two samples from November 2007 and May 2008.

[m] Value measured at downstream receiving water (R2) site; no data available for the hatchery discharge.

[n] Value measured in hatchery discharge only.

[o] Value measured at downstream receiving water (R2) site only; effluent concentration not apparently contributing to reduction (i.e., higher concentration).

[p] Value measured at downstream receiving water (R2) site; no data available for the upstream site.

[q] Coyote Valley Fish Facility has no discharge water or receiving water.