

**Order Approving U.S. Fish and Wildlife Service's Request**

BEFORE THE ENVIRONMENTAL QUALITY COMMISSION

In the matter of the U.S. Fish and Wildlife Service's request to spill water to assist out-migrating Spring Creek Hatchery salmon smolts ( ( ORDER ( (

WHEREAS the Department of Environmental Quality received a request from the U.S. Fish and Wildlife Service dated October 2, 2003, to adjust the Total Dissolved Gas Standard as necessary to spill water over Bonneville Dam on the Columbia River to assist out-migrating Spring Creek Hatchery tule fall Chinook smolts, for a ten-day period in March 2004;

WHEREAS the public was notified of the request on October 31, 2003, and given the opportunity to provide testimony at 10:00 p.m. on December 1, 2003, and the opportunity to provide written comments until 5:00 p.m. on December 3, 2003; and

WHEREAS the Environmental Quality Commission met on February 6, 2004 and considered the request, justification and public comment.

THEREFORE the Environmental Quality Commission orders as follows:

1. Acting under OAR 340-41-205(2)(n)(B), the Commission finds:
  - (i) failure to act will result in more salmonid passage via hydroelectric dam turbines. Estimated mortalities from fish passing through turbines is between 11 and 15 percent. Fish passing over spillways as a result of spill experience two to three percent mortality;
  - (ii) the balance of risk of impairment to migrating salmonids, resident fish, and other aquatic life due to elevated dissolved gas levels needs to be balanced against migrating juvenile salmonid mortality from turbine passage. Resident fish and aquatic invertebrates in the Columbia River downstream of Bonneville Dam have

been monitored for signs of gas bubble disease since 1993. A total of 225 fish were examined in 2002. Of these 0.3 percent (one fish) showed signs of gas bubble disease. This fish exhibited signs of the lowest rank. No signs were observed in aquatic macroinvertebrates. Low incidences, as reported above, were detected in migrating juveniles and returning adults when total dissolved gas levels were within waiver limits. Higher levels of total dissolved gas saturation resulting from involuntary spill have resulted in increased incidence of gas bubble disease detected. Given data from past monitoring, at the levels requested, there appears to be a reasonable balance between increased survival due to avoidance of turbine and bypass system mortalities;

- (iii) the U.S. Fish and Wildlife Service has submitted a physical monitoring plan. The U.S. Geological Survey will conduct physical monitoring at the Bonneville Dam forebay, and at Camas/Washougal. Hourly data will be posted electronically on the U.S. Army Corps of Engineers' Internet World Wide Web pages. Implementation of the physical monitoring plan will ensure that data will exist to determine compliance with the standards for the voluntary spill program; and
  - (iv) the U.S. Fish and Wildlife Service has not submitted a biological monitoring plan. In order to satisfy this finding, the U.S. Fish and Wildlife service should collect Juvenile salmonids and resident fish with a beach seine downstream from Bonneville Dam and examine them for signs of gas bubble disease on non-paired fins and lateral lines. Based on evidence from previous years, few signs of gas bubble disease are expected. The sampling will, therefore be confined to two non-successive days during the ten-day spill period. No examinations of gill lamellae will occur this year due to the variability of results and increased risk to fish to due handling for this examination.
2. The Environmental Quality Commission approves a modification to the Total Dissolved Gas standard for spill over Bonneville Dam subject to the following conditions:
- (i) a revised total dissolved gas standard for Bonneville Dam on the Columbia River for a continuous ten-day period in March 2004, 2005, 2006 and 2007;
  - (ii) a total dissolved gas standard for Bonneville Dam of a daily (12 highest hours) average of 115 percent as measured at the Camas/Washougal monitoring station;

- (iii) a further modification of the total dissolved gas standard at Bonneville Dam to allow for a daily (12 highest hours) average of 120 percent as measured at tailrace monitors below the dam;
- (iv) a cap on total dissolved gas for Bonneville Dam during the spill program of 125 percent, based on the highest two hours during the 12 highest hourly measurements per calendar day;
- (v) if *either* 15 percent of the fish examined show signs of gas bubble disease in their non-paired fins, *or* five percent of the fish examined show signs of gas bubble trauma in their non-paired fins where more than 25 percent of the surface area of the fin is occluded by gas bubbles, whichever is less, the Director will halt the spill program; and
- (vi) the U.S. Fish and Wildlife Service is to incorporate the following conditions into its program:
  - a) incorporation of a biological monitoring program to be performed on not less than two non-successive days during the spill program. Resident and migrating fish shall be collected by beach seining, and be examined in their fins and lateral; lines for signs of gas bubble trauma;
  - b) written notice must be furnished to the Department within 24 hours of a violation of the conditions of this waiver as it relates to voluntary spill. Such notice will include an explanation of the reasons for the violation, actions taken to resolve the situation, or if no action is taken, the reasons for no action;
  - c) provision of a written report of the each year's spill program for the Spring Creek National Fish Hatchery release. Such report is to be received by the Department no later than December 31 of each year; and
  - d) application for any waiver beyond 2007 should be coordinated with the U.S. Army Corps of Engineers and should be submitted as a single application on behalf of the federal government.

Dated: \_\_\_\_\_

ON BEHALF OF THE COMMISSION

Agenda Item E, Informational Item: Columbia River 2005 Spill Season Total Dissolved Gas  
Waiver Report, June 22, 2006, EQC Meeting  
Attachment B  
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Director