Managing Riverside Canal Spills to Improve Water Quality in the Boise and Snake Rivers

Jack Harrison Ph.D.

1337 E. Fall Ct.

Boise, ID 83706

208-861-1654

hyqual@cableone.net

This presentation summarizes results and preliminary recommendations from the recently completed 2011 Riverside Irrigation District (RID) water quality study conducted by HyQual and SPF Water Engineering. The primary objective of the water quality monitoring effort was to measure phosphorus concentrations and estimate nonpoint source loads discharging into and out of the Riverside Canal. The results of the study will be used to support water management decisions by Riverside Irrigation District (RID) and demonstrate how the canal water, which carries sizeable loads of nutrient and sediment from upstream creeks and drains, could be managed to improve water quality in the Boise and Snake Rivers.

Riverside Irrigation District (RID) is located at the lower end of the Boise River watershed. The Riverside Canal, operated by RID, diverts water from the Boise River near Caldwell and provides irrigation water to over 12,500 acres of crop land. RID has initiated a water management improvement program, funded by RID, USBR and IPC , that includes automation of diversion and spill gates to allow more efficient control and selective management of source waters used for irrigation.

The 2011 monitoring results are being used to develop operational strategies for canal water management directed toward watershed water quality improvements. Preliminary recommendations for the future canal water management include minimizing diversion of the Boise River (average phosphorus less than 0.2 mg/L), while maximizing diversion (and subsequent agricultural use) of Indian Creek (average phosphorus 0.68 mg/L) and other tributary drains located along the upper and mid reaches of the canal. Current and future (projected) water quality analyses will show the benefits of using the automated canal control systems to convey more of the tributary and drain water to agricultural land, as compared to historical discharge (i.e., spill or bypass) of these upstream point and nonpoint source loads to the Boise and Snake Rivers.