



STATE OF IDAHO  
DEPARTMENT OF  
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, ID 83706 • (208) 373-0502  
[www.deq.idaho.gov](http://www.deq.idaho.gov)

C. L. "Butch" Otter, Governor  
Curt Fransen, Director

To: Model-Techno-Policy Workgroup  
Lower Boise River TP TMDL

From: D. Sharp, Idaho DEQ

Date: June 11, 2014

RE: AQUATOX model scenarios

As I begin modeling potential management and phosphorus allocation scenarios for the lower Boise River TMDL, one of my first priorities will be to account for all of the components of organic enrichment throughout the river and throughout the year. Even though it is common practice to simulate a reduction of only one component of organic enrichment, such as total phosphorus, I will research and apply appropriate methods to simulate a reduction of all of the components of organic enrichment. During this investigation of nutrient reduction scenarios, I will work to answer the following:

- How are the components of organic enrichment characterized and controlled in nonpoint source watershed improvement projects?
- How are the components of organic enrichment characterized and controlled in point source wastewater facility improvement projects?

Much of the work to answer these questions has already been done, but I need help from operators of municipal wastewater systems to answer the second question. I have included a table of the constituents for which I need help understanding how phosphorus treatment operations affect the proportions of nitrogen, phosphorus, carbon, and BOD that are in the current effluent and why it differs from facility to facility, both currently and under potential management scenarios.

I respectfully request that you fill-in and return Table 1 by June 23, which will help me accurately characterize and quantify the anticipated effluent loadings under current potential future phosphorus management scenarios at your facility for our modeling efforts and the TMDL development.

Table 1. Current average and projected constituent values related to phosphorus management scenarios.

Facility Name:												
		Potential Total Phosphorus Management Scenario (mg/L)										
		May - September Average Values					October - April Average Values					
Constituent	Current	TP = 1	TP = 0.5	TP = 0.3	TP = 0.1	TP = 0.07	Current	TP = 1	TP = 0.5	TP = 0.3	TP = 0.1	TP = 0.07
TP (mg/L)		1	0.5	0.3	0.1	0.07		1	0.5	0.3	0.1	0.07
PO <sub>4</sub> (mg/L)												
NH <sub>4</sub> (mg/L)												
NO <sub>3</sub> (mg/L)												
O <sub>2</sub> (mg/L)												
BOD												
Current Facility Discharge (MGD)												
Design Facility Discharge (MGD)												