

Interactive comment on “Long-term changes in sediment phosphorus below a rural effluent discharge” by B. E. Haggard and R. J. Stoner

B. E. Haggard and R. J. Stoner

Received and published: 9 June 2009

We appreciate your constructive review of this manuscript, and your comments provided.

1) Central to the process of sediments controlling SRP in the overlying stream water is hydraulics, especially during the time of sampling. All samples were collected during base flow conditions throughout the study, and it would be under these hydraulic conditions that sediments would like be factor regulating SRP concentrations. Many studies in this region have shown that SRP concentrations are not related to streamflow during base flow conditions; SRP does show a significant relation when episodic high flow events are included. Furthermore, the effluent discharge has variable P concentrations as noted in the manuscript... this would inhibit comparisons of concentration-discharge relations in the two time periods discussed in this manuscript. The authors can eas-

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ily add text to manuscript to denote that all samples were collected under base flow conditions.

2) Taylor and Kunishi (1971) suggested that one hour incubations were sufficient to estimate EPC, and all sediment samples followed the same methods throughout the study. We followed our standard methods for the analyses of water and wastewater samples, given that the samples could not be analyzed in less than 48 hrs. The filtrate from the sediment incubations were acidified to pH less than two, and then analyzed using the modified ascorbic acid reductin technique. As the reviewer points out, it is likely that any dissolved organic-P that would be hydroloyzed would have been during the analytical method any ways. The authors can add text to the methods describing why acidification was done, and why implication this might have on the analysis of SRP.

Again, we greatly appreciate this reviewer comments and we feel that these comments can be addressed in our revised manuscript.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 6, 767, 2009.

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