

**Response to Editor, bg-2014-100 (30 Jun 2014) by K. K. Yates et al.**

Dear Dr. Kiessling,

We are pleased to submit our final manuscript version for publication in Biogeosciences. We greatly appreciate your assistance through the publication process and for the constructive comments that have helped us greatly improve our paper. We have addressed the last few technical issues as indicated below:

- 1) We have added text introducing the concept of process heterogeneity in the introduction section. We have also included reference to the methods used for analysis of chemical data to examine biological and chemical process heterogeneity in the methods section.
- 2) We have acknowledged our anonymous reviewers for their insightful comments that helped improve our manuscript.

Kind Regards,

Kimberly Yates et al.