

Interactive comment on “Effects of pumice mining on soil quality” by A. Cruz-Ruíz et al.

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Response to anonymous referee No. 1 The corrections to be applied and all observations are in the manuscript are corrected. Page (P) 1379 Line (L) 23. Add “.” It was corrected P 138 L 13 How many soil samples?. It was added some lines. P 1380 L 16. Add “and”. It was corrected. P 1381 L 23. Add the phrase (Table 1). It was added P 1382 L 2 Delete the first sentence. It was corrected L 4. Add the phrase (Table 2). It was added P 1384 L 2-4. Delete. It was corrected L 17 Delete the phrase “soil organic matter”. It was corrected P 1385 L 4. Delete “or soil water”. It was corrected.

Response to anonymous referee No. 2 The corrections to be applied and all observations are in the manuscript are corrected. The manuscript must be revised by a Proficient in English. The manuscript was reviewed. I do not understand the history of the study area and the reclamation strategy developed. You have to correctly and

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explicitly explain the reclamation carried out. You have to include dates, timing about reclamation, the tasks developed, the thickness of the overburden applied, if the overburden soil was mixed with mining materials. It was added some lines in the materials and methods over this comment. Page 5 Line 12-26. It is important to understand your work. Was agricultural use established immediately after reclamation? I do not understand the expression “new mined soil”: do you mean an area where mining extractions started? And old mine soil? What is that? It was added some lines in the materials and methods over this comment. It is not clear the explanation of treatments. Sampling procedure must be explained. How many samples per site were taken? How the location of samples was selected? Indicate as well the distance between the different sites and the area of each site. Page 5 Lines 28-30 and Page 6 Line 1-5. In page 1380/L 6 you say that sites were chosen on the basis of similarity of aspect. You must be more explicit. I do not understand what you mean. Provide actual data: similar slope (indicate %), similar topography, orientation (indicate), same thickness of the overburden (indicate), etc. Page 5 Line 14-16 and 17-21. Data must be supported by statistics, which are missing. Authors cannot visually compare data from different treatments (samplings) and conclude that one treatment shows higher values in one property than the other, overall when values are quite close. You have to indicate if there are or not significant differences. So, I miss a comparison of means using for example ANOVA and post-hoc, or a twoway ANOVA if you want to assess the effects of long-term reclamation and season. You have to make sure that you can carry out ANOVA, since residual for example must follow a normal distribution. A sample size of three with six groups to compare is not considered sufficient for the purpose of this work. If we want to have high confidence level to detect significant differences we need at least six samples for each group. The objective was to measure multiple variables and use multivariate statistical to detect the most important variables in the system. The second step will be to have a great sample size, measure those variables and use inferential statistical like ANOVA and Tukey test. For the writing of the results, use the abbreviations explained in section 2.2 for treatments (although you must to

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improve it), so that it is better understood. You have to use the past tense, since you use indistinctly present and past. You write in the entire document “mined soil” and I do not really understand what you mean with this expression. Do you mean all soils where previously mining extraction took place and are formed by overburdened soil? Please explain better. With regard to discussion, I miss a discussion about the effect of season, just to know if the variability owing to sampling date is lower/higher/non significant compared to the long-term samplings after reclamation. I do not understand the conclusion. Rephrase it totally, focusing on the points you want to show, based on your objectives and supported by your results. The abbreviations were corrected. The conclusions were rewriting. In the manuscript. Page (P) 1377 Lines (L) 4-9. Delete. It was corrected. P 1377 L 12. Reference was added. L 15. It was corrected. P 1379 L 21. It was added the reference of WRB and the reference of GEM. L 23-24. It was added. P 1380 L 7-9. It was corrected. L 18. It was corrected. P 1381 L 5. It was corrected. L 14. It was added. L 21. It was added more information. P 1382 . It suggested corrected throughout the section of microbial properties. P 1383 L 4, 6 and 9. It was corrected. P 1384 L1-3. Delete 3 lines. It was corrected. L 10, 12, 21 and 26 It was corrected.

Please also note the supplement to this comment:

<http://www.solid-earth-discuss.net/7/C817/2015/sed-7-C817-2015-supplement.pdf>

Interactive comment on Solid Earth Discuss., 7, 1375, 2015.