

Interactive comment on “Technical Note: Field experiences using UV/VIS sensors for high-resolution monitoring of nitrate in groundwater” by M. Huebsch et al.

Anonymous Referee #2

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The manuscript includes some new and very interesting scientific results regarding practical field and laboratory experience on how well UV-sensors are functioning when monitoring groundwater emerging in springs. The manuscript is in general well written with a suitable number of Tables and Illustrations. The results are although not highly innovative scientifically speaking of high practical importance for users of sensor equipment with very many good and informative advises. I have a few minor general and specific comments that the authors need to clarify before publication.

General comments: I am missing some information on the statistics applied in the Method section and a description of the method applied in Fig. 3b. The authors should

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give an advice on how often you will need to take conventional water samples for nitrate analysis as mentioned on page 12300, line 28. The way the sensor is installed in the water column is somewhat confusing as you mention both vertical and horizontal installations. It might be good to have a drawing of this installation principle together with Fig. 1.

Specific comments: Page 12294, line 18-20: This sentence should be elaborated a little more by the authors as the reader do not have a chance to understand the use of the two methods mentioned without having to read the cited literature. Page 12296, line 12: It seems strange to use a sensor that has a range lower than the one measured in the spring as 12-15 mg NO₃ on the page before? An explanation is given later under the results but should be given maybe better in this section. Page 12296, line 27-28: The authors need to elaborate and give a little more details on these two functions for calibration for the readers to understand what is e.g. normally used. Page 12297, line 12: Please give information on the name and number of the advanced and comparable versions used for costing. Page 12297, line 20-22: This sentence seems to explain Fig. 2 but suddenly Fig. 3a is also referred – please clarify this as it is not obvious for the reader. Page 12298, line 24: Please clarify what is meant by the word “trueness”. Page 12299, line 9-11: This sentence seems to be a repetition from the Materials and Method section so please avoid here. Page 12299, line 11-20: These sentences referring to Fig. 3 is not really clear for the reader – why these four types are used and they seems to be used for both types of sensors even though taken in respectively, Jordan and Ireland? Page 12299, line 20: What is meant with Isobestic – please explain more about this for the reader. Page 12300, line 1: The first derivative should be explained in the Materials and Method section and also in the Fig. 3b on the y-axis text. Figure 2: The equation in Fig 2a cannot be right as the slope is > 1 and the line is under 1:1 line. Also the legend text should be improved and be more easy to read as it is very long and difficult to follow – what is meant by error bars were calculated after the manufacturers specifications? Please give details on statistics in the Materials and Methods section. Figure 3: Also here the legend text is difficult to understand (e.g.

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isobestic) for the reader and please define the y-axis in Fig 3b.

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