

Response from authors to the Editor regarding the reviewers' comments

[Minerals] Manuscript ID: minerals-2791314 - Major Revisions

The temporal distribution of the host rocks to gold, the Archean Witwatersrand Basin, South Africa

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**Reviewer 1** recommend publishing after taking account of comments on the text. This is done with track changes. We believe that reviewer 1's summary in which they said "...novel, interesting and well-written" will be representative of many readers who do not have a heavy investment in the placer model.

### Responses to Reviewers' itemised comments

(line numbers refer to the marked PDF versions provided by each reviewer)

Reviews 1 and 2

- ✓ 18: replace *processes* with *source and sorting*
- ✓ 27: Reference inserted one sentence later.
- ✓ 29: Changed to resource.
- ✓ 35: comma inserted
- ✓ 36: strikethrough adopted
- ✓ 36: s added
- ✓ 56: Fox 2002 reference is added
- ✓ 59: No change, we believe that we have followed the Minerals journal preferred outline.
- ✓ 60: no change; our use of the present tense is appropriate as the period is still going
- ✓ 61 and 61 and 61: Changed to read ... *the placer model upon...*
- ✓ 75: reference to Fig. 1 inserted
- ✓ 78: - Caption rewritten to be clearer
- ✓ 79: See our response to ln 59. Our approach has been to write an introduction to the research paper which is slightly different to an introduction to the Witwatersrand geology.

- ✓ 121: this section has been reworded with additions to demonstrate the importance of the examples that we are talking about. This is necessary because the South African literature does not cover this aspect well and is, not surprisingly, over-awed by the Central Rand Group.
- ✓ 125: the scale of Fig. 1 is not appropriate for this, but the locations are plotted on Figure 4.
- ✓ 126: - this has been reworded, and see also in 121 adjustment
- ✓ 127: sentence split into two; importance justified in comments to lines 121, 126 and 127.
- ✓ 127: we are following the industry / science standard here as used by Pretorius (1981), and as the mines were already closed when he wrote then there is little anybody can add today to make old numbers more accurate. This is a worldwide issue for gold mines closed a century or more ago.
- ✓ 132: - addressed in lines 121, 126 and 127
- ✓ 143: - the word 'unusual' is removed to avoid this distraction
- ✓ 156: Our sentence is removed as it was slightly off topic and unnecessary
- ✓ 159: Substantially strengthened by drawing upon Craw et al.
- ✓ 168: Generally, this is not graphite but instead includes various forms of reduced carbon. Wits carbon is a large and well documented field that we do not need to summarise for the current story
- ✓ 175: We will try to intersperse the figures throughout the text
- ✓ 253: changed to 300 oz
- ✓ 367: No, the deformation features have not been mapped for the Wits and it is the absence of detailed structural work (such as in Frimmel et al. 2005) that makes us question many assertions of the placer model
- ✓ 382: Sentence is reworded to become clearer
- ✓ 414: this is reworded for clarity
- ✓ 421: corrected to Pilgrim's

- ✓ 421: inserted ... *being so far away*..
- ✓ 453: addressed around ln 414 for clarity
- ✓ 468: this is a great suggestion but is the topic of over 100 published papers and outside to topic of this current paper; we have made no change as some of the earlier references in this paper address this issue and have fuller reference lists themselves
- ✓ 471: reference added
- ✓ 471: the issue of sourcing detrital gold from the erosion of older reefs is not really an answer at all, and we have added a sentence to explain this
- ✓ 483: We stress here the deformation. The question is more relevant to placerists who have not answered it either.
- ✓ 485: more detail of the various host rocks for gold has been added
- ✓ 498: reworded to clarify what we had meant by super-sensitive
- ✓ 524: reference to Fox is inserted
- ✓ 528: reworded
- ✓ 530: we have been unable to find this structural information in placer-based reviews such as Frimmel et al. 2005
- ✓ 547: sentence added
- ✓ 566: idea adopted