

# Review of: "Groundwater Potential Zone Assessment Using Remote Sensing, Geographical Information System (GIS), and Analytical Hierarchy Process (AHP) Techniques in Fogera Woreda, South Gondar Zone, Ethiopia"

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Potential competing interests: No potential competing interests to declare.

In order to enhance the manuscript readability, the following comments and suggestions should be considered:

1. Can you provide specific examples or case studies where the distinction between plateau basalt and alkaline basalt impacted groundwater assessment?
2. Slope has a direct relationship with groundwater velocity (as  $Q=AV$ ), where  $Q$  is discharge,  $A$  is the cross-sectional area, and  $V$  is the velocity. So it is better to express it that way using the following unit: m/km. Can you provide specific examples or case studies where the distinction between plateau basalt and alkaline basalt impacted groundwater assessment?
  - Could you elaborate on how the authors might quantitatively relate drainage density to runoff volume, perhaps suggesting a methodology or formula?
3. Review the calculated drainage density, as it should be the total length of streams of different orders/total area. As per, I hav'nt seen any stream ordering of the Hortonian method or any other method applied, e.g., 1st order or 2nd order or 3rd order streams.
4. You can establish a quantitative relationship between drainage density and runoff volume in the study area, e.g.,

## Runoff volume

**$=750(D_i/D)(P_s-8)*A$ , where  $D_i$  is the drainage density for a specific area and  $D$  is the drainage density for the total area/basin.  $P_s$  is the mean annual rainfall over the basin area, and  $A$  is the basin area.**

5. Rainfall intervals in the study area are not interesting at all, e.g., 860.1–866.2 mm, 866.3–872.5 mm, and 872.6–878.7 mm. Try to find out what the mean annual rainfall over the basin area is.

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