Appreciation of comments from:

B. Scharnagl (Referee)

Thanks for your constructive and critical contributions and all shall be considered in improving this paper. Your concern about language, grammar and abbreviations was also expressed by anonymous Referee # 1 and that is being addressed without delay. As a new comer in the field of soil physics I also admired the depth and richness of your comments.

I was advised not to make changes on the manuscript until this interactive comment stage is completed but I would like respond to some of your comments.

Firstly, the aim of this paper was to evaluated internal drainage of the three soils. This was carried out in the background of infield rainwater harvesting (IRWH), an in-situ conservation strategy proposed for clay and layered soils of the Free State province. The internal drainage function once established it was to be later used to estimate the deep drainage component of the soil water balance from experiments field plots developed for IRWH. The overall goal to evaluate the suitability of the three soils for IRWH is beyond the scope of this paper.

Other papers did address hydrological processes of importance including evaporation and re-distribution from the different soils.

There is ample literature explaining the strength and weakness of using the concepts of 'drainage upper limit (DUL)' over that of 'field capacity' or 'water holding capacity' for that matter. In this paper the DUL was used for its convenience in quantifying the profile available water (PAW) and soil water deficit in soil water balance calculations. The relevant definitions shall be included in the revised manuscript.

Concerning comment number 3, I agree the exponential function is outdated but to some extent still provide some reasonable estimates.

The linear regression function that described the θ-h relationship in Figure 4 was presented in Table 2. For simplicity the emptying of structural and intermediate pores under gravitational influence was presumed to follow a linear relationship. Although the coefficient of determination was within the acceptable range extrapolating linearity beyond the 1000 mm or 10 kPa would undermine the physical nature of flow in soils.

The gradient reflected by the relationships in Figure 4 and 5 are determined differently. The former is determined from experimental data of discrete columns while the former was the result of the ratio of flux over the hydraulic gradient operating between two horizons.

Proper sealing of the monoliths especially on the side walls was a concern and could have led to further decrease in soil water storage.

According to Figure 7 drainage approached a negligible rate when the flux rate was approximately 0.001 mm $hour^{-1}$. The soil water content at this negligible drainage rate would

be equivalent to drainage upper limit (DUL) according to Ratliff et al., (1983). In this paper the negligible level of drainage was expressed in terms of rainfall, hence rainwater conservation was the subject of interest. Given a drainage rate of 0.001 mm $hour^{-1}$ to be sustained during the months when key rainfalls occur (October to March), total drainage would be about 5.04 mm. This is equivalent to 1% of the 550 mm annual average rainfall and reasonable low to be regarded as negligible.