ERRATUM

Quantifying the Effects of Small-scale Heterogeneities on Flow and Transport in Undisturbed Core from the Hanford Formation

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A conversion error was found in the calculation for pore volume in several of the unsaturated transport experiment spreadsheets. Figures 8, 9, and 10 have changed only in the PV axis. The relative concentrations remain the same as in the original paper. Modeling results have also changed. These changes are presented in the revised Table 5. The results now show no preferential flow in the unsaturated vertical core, but still significant tracer separation due to matrix diffusion. Preferential flow is observed in the horizontal core, just not as much as in the original manuscript. The effect of matrix diffusion is the same as in the original manuscript. The MIM model was used to fit the data from the horizontal core with a retardation factor of 1 for the nonreactive tracers. The CDE was used for the vertical core. The corrected model fit information is in Table 5. The original conclusions are still valid. The only major difference is that no preferential flow was observed in the vertical core under a range of moisture contents whereas preferential flow does occur in the horizontal core. Again, these differences are due to the heterogeneity present in the cores. The observations suggest the preference for flow along bedding versus flow across bedding in the Hanford formation.

(a) Horizontal Core

(b) Vertical Core