Title
Reply to Comments by Veling on “A Semi-Analytical Solution for Large-Scale Injection-Induced Pressure Perturbation and Leakage in a Laterally Bounded Aquifer–Aquitard System” by Zhou, Birkholzer, and Tsang

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Veling (2010) pointed to "a serious mistake" and "mathematical inconsistency" in Zhou et al. (2009) because the dimensionless flow equations in Equation 4 (in terms of dimensionless hydraulic head rise in the aquifer and the aquitard) would give rise to additional terms when back converting to the groundwater flow equations, in the case that initial conditions for hydraulic head were spatially variable. He added, however, that the conclusions of the paper remain valid when uniform initial conditions are assumed.

We accept this comment because we have indeed assumed uniform initial conditions in the system but failed to state this explicitly in the publication, partially because this assumption is very common in groundwater hydrology when deriving analytical and semi-analytical solutions. The same assumption was employed, for example, by Veling in Veling and Maas (2009), as stated "For the ease of presentation we assume from here on that ϕ_{i0} (r, z) … are all equal to zero. An arbitrary initial function …will complicate the solution, but not essentially". We shall emphasize that with this assumption, our semi-analytical solutions and their derivations are correct.

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