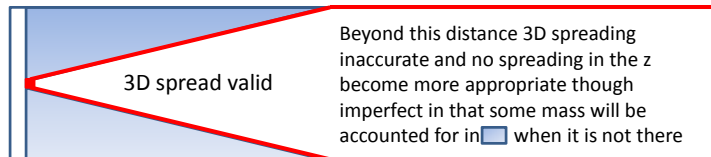


ANALYTICAL MODELING ISSUES

When 3D spreading is appropriate for a problem, use that rather than 1D

1D spreading is rarely appropriate for field problems, it is appropriate when
The constant concentration source fills the entire face of a system
in such a case there is no room to spread laterally or vertically

3D spreading may be limited with distance in the system, if so point this out



NUMERICAL MODELING ISSUES

THINK IN TERMS OF THE PHYSICAL SYSTEM

A common issue and one that a few projects had this week

Concentration was added to recharge and simulated for a short time, say 100days
Ending Concentration in the cell was low
Why?

Think in terms of the physical system

Perhaps the Cell is large 5280ft x 5280ft x 300ft with 0.3 porosity

Then the Pore volume is 2509056000 ft³

If the Recharge rate is 0.01 in/day = 8.333×10^{-4} ft/day

Recharge volume for 100 days = rate*area = 2323107 ft³

So even if none of the source water flowed out of the cell only 9% of the fresh water has been replaced by contaminated water so the average concentration for the cell is < 1/10 of the source concentration.