



Figure 9. An appropriately calibrated ground-water-flow model can accurately and realistically account for the interaction of discharging wells with each other and simulate contributing areas to these wells that are consistent with the system-wide flow field. This **process-based method** can address effects of partially penetrating wells and the concern that a contributing area for any one well depends on the interactions with other processes (e.g. pumping and recharge) that occur over the entire system. For example, if the pumping rate of one well changes, it may affect the contributing area of another well that is maintaining a constant pumping rate. The additional analysis of ground-water particle tracking is a powerful tool to **objectively** assess advective transport processes and intrinsic susceptibility while accounting for the effects of discharging wells and other factors. Figure modified from Masterson and Walter (2000).