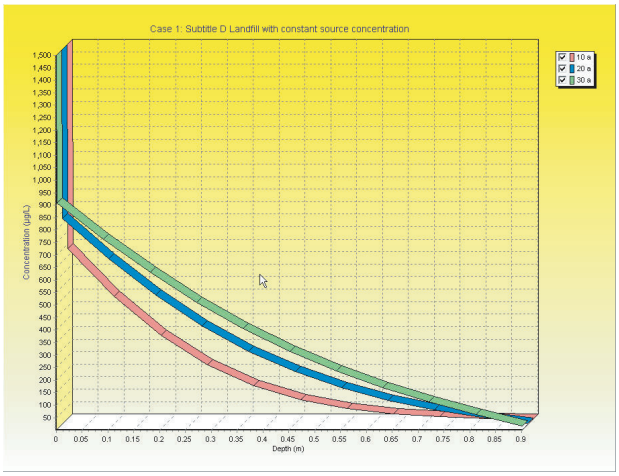
POLLUTEv7

Quick Facts

Models are used to represent the subsurface lithology, containment systems, and contaminant source to be studied. These models can be used to study the effects of landfills, buried waste, spills, lagoons, barrier systems, etc. Each study area should be grouped into one or more projects.

In addition to advective-dispersive transport, POLLUTEv7 can consider:

- ★Linear and non-linear sorption
- ★An initial concentration profile
- ★Radioactive and biological decay
- ★Transport through fractures
- ★Passive sinks
- ★Phase changes
- ★Time-varying properties



The POLLUTEv7 program provides fast, accurate, and comprehensive contaminant migration analysis capabilities. This program implements a one and a half dimensional solution to the advection-dispersion equation. Unlike finite element and finite difference formulations, POLLUTEv7 does not require a time-marching procedure, and thus involves relatively little computational effort while also avoiding the numerical problems of alternate approaches.

With more then fifteen years utilization in industry, POLLUTEv7 is a well tested contaminant migration analysis program which is widely used in landfill design and remediation. Landfill designs that can be considered range from simple systems on a natural clayey aquitard to composite liners, multiple barriers and multiple aquifers.

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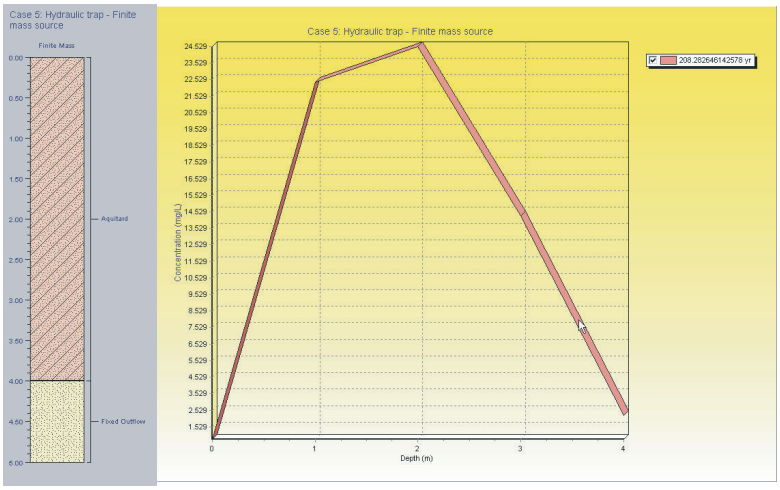
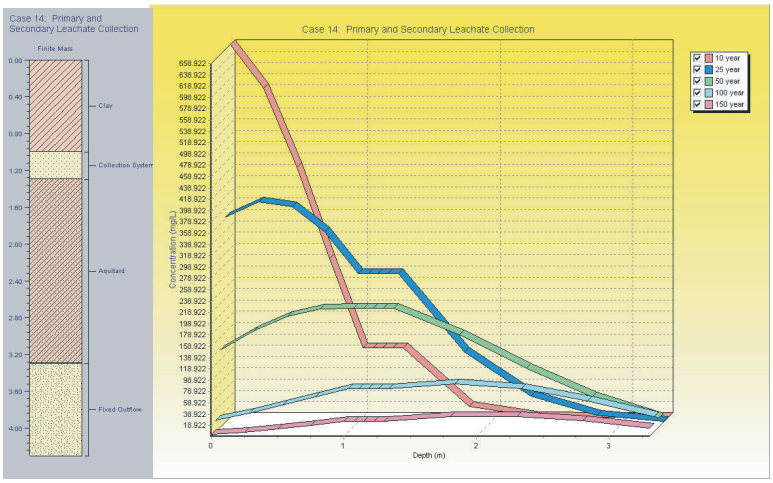
Features

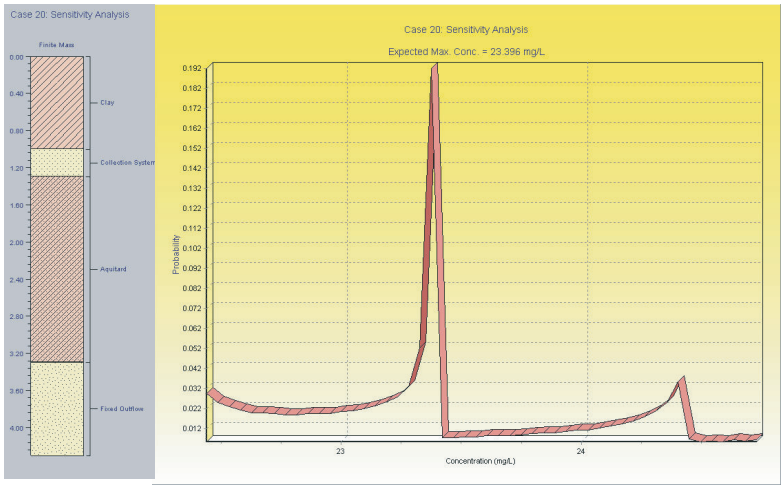
- ★ New models can be easily created using either a blank model, the wizard, or a quick entry model.
- ★ There are four quick entry models: Primary Liner Landfill, Primary and Secondary Liner Landfill, Vertical Migration, and Horizontal Migration.
- ★ A graphical diagram of the model is displayed as it is created.
- ★ Models can contain up to 200 layers.
- ★ The graphical symbol and color for a layer can be assigned and shown of the model diagram.
- ★ Layers can contain 1, 2, or 3 dimensional fractures.





- ★ The diffusion coefficient, distribution coefficient, and phase change parameter can be specified for each layer.
- ★ The top boundary condition can be zero flux, constant concentration, or finite mass.
- ★ The bottom boundary condition can be zero flux, constant concentration, fixed outflow, or infinite thickness.
- ★ The subsurface concentrations can be calculated at specified times or the time of the maximum concentration can be automatically found by the program.
- ★ Radioactive or biological decay of the contaminant can be modeled.
- ★ An initial concentration profile at specified depths can be specified.

- ★ Freundlich and Langmuir non-linear sorption can be modeled.
- ★ Source, velocities, and layer properties can be varied with time (can be used model changes in the source, barriers, or flow patterns).
- ★ One or more passive sinks can be specified to model horizontal velocities in layers and the removal of contaminants.
- ★ Monte Carlo simulation can be used to evaluate the effects of uncertainty of model parameters.
- ★ Sensitivity analysis can be used to predict the expected range of concentration when parameter values are not known accurately.



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