



**SVCHEM<sup>GE</sup>**

1D / 2D / 3D FINITE ELEMENT  
CONTAMINANT TRANSPORT MODELING



Advanced Saturated / Unsaturated  
Fate and Transport Modeling



**SOILVISION<sup>®</sup>**  
INNOVATIVE GEO-MODELING SOFTWARE

*SVCHEM™GE is able to model contaminant transport through the saturated and unsaturated soil and rock zones. Simple particle tracking may be performed as well as modeling the processes of advection, diffusion, adsorption, decay and density dependencies. SVCHEM™GE is also able to refine the solution mesh based on any problem variable. It can perform fully coupled advective analysis when combined with SVFLUX™GE. SVCHEM™GE is applicable to geotechnical, geoenvironmental, mining and hydrogeological-related projects.*

## POWERFUL, YET SIMPLE FATE & TRANSPORT MODELING AND ANALYSIS

**The SVOFFICE™5/GE release of SVCHEM™ software contains the following specific improvements...**

- **NEW High-Performance Graphics Engine:** the new 3D CAD graphics engine provides measurably faster overall operation, with the biggest performance increases in the areas of...
  - creation and manipulation of larger, more complex models
  - quicker rotation and translation of objects
  - high quality / print-ready client visuals
  - improved CAD editing controls and responsiveness.
- **NEW SVDESIGNER™ Conceptual Modeling Software Package:** This brand new software program is tightly integrated with SVOFFICE™5/GE and allows for the representation and manipulation of complex 3D geometry and takes 3D modeling to a whole new level.
- **Improved Charting:** High quality, exportable charts.
- **Re-organized Menu:** the menu system within the software has been reorganized to be more clear. Primary functions are organized in a left to right format along the menu.

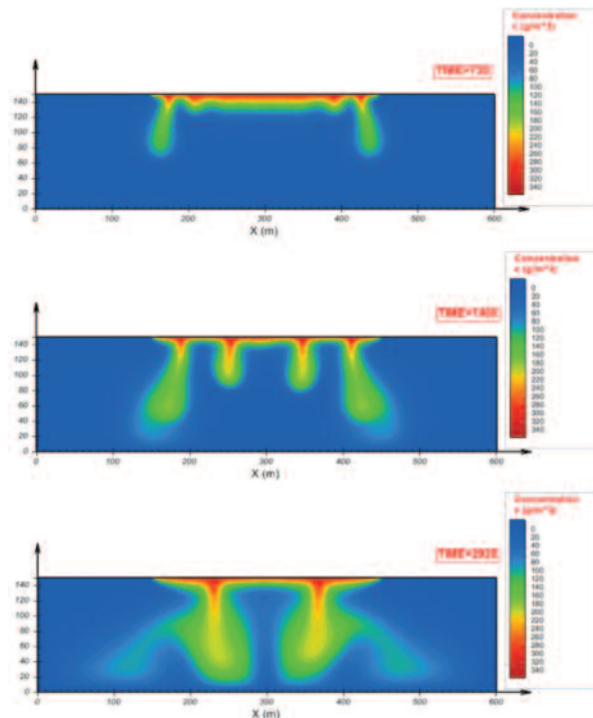
- **New SVOFFICE™5/GE Manager:** the project manager dialog has been redesigned to greatly simplify its usage. Models can easily be grouped by project and stored anywhere on the user's disk drive.

SVCHEM™GE can perform fully coupled advective analysis when combined with SVFLUX™GE. This package is applicable to geotechnical, geoenvironmental, mining and hydrological-related projects.

Our SVCHEM™GE software package continues to offer advanced analysis utilizing full coupling with the SVFLUX™GE software as well as automatic mesh refinement in order to offer increased stability in the area of numerical modeling of contaminant fronts. The software also offers 1D, 2D and 3D analysis.

The software can be utilized for geotechnical, civil, or mining engineering projects.

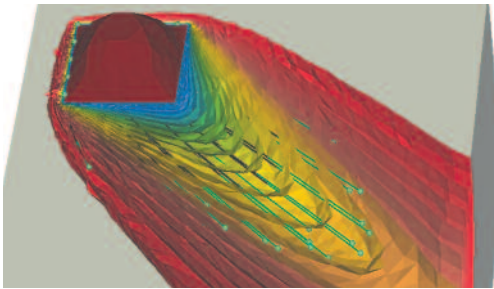
SVCHEM™GE is currently being used by universities and consultants around the world. Feel free to contact us for more information.



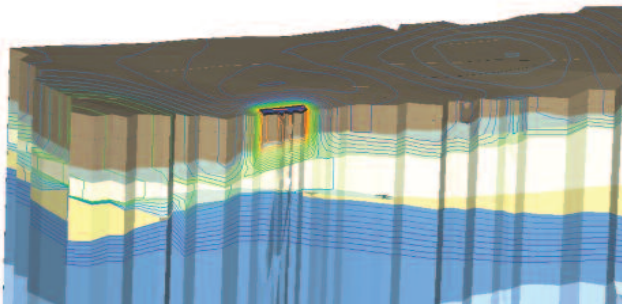
Coupling SVFLUX™ / SVCHEM™ and density-dependant flow with the Elder problem.

## Key features and capabilities of SVCHEM™GE:

- **Easy to Use:** Featuring a familiar user interface with easy to understand icons and functions. The software tools behave exactly how you would expect with a short learning curve. You will be able to start modeling right away.
- **Fully-integrated 1D / 2D / 3D geotechnical suite:** 1D, 2D, Plan, Axisymmetric and 3D solutions handle any type of modeling problem.
- **Fully automatic mesh generation and mesh refinement.**
- **Full coupling** with SVFLUX™GE
- **Modeling of density-dependent flow**
- **Model advection, diffusion, absorption and decay** in saturated and unsaturated soil conditions.
- **Climatic interface:** brings the power of climatic seepage modeling to contaminant transport problems when coupled with SVFLUX™GE.
- **Simple and powerful user interface** allows rapid creation of effective models.
- **Easily generate 3D models** from 2D cross-sections, or slice 3D models into 2D cross-sections.
- **Extensive QAQC program**



Borrow pit heads cutaway.



Borrow pit heads cutaway.

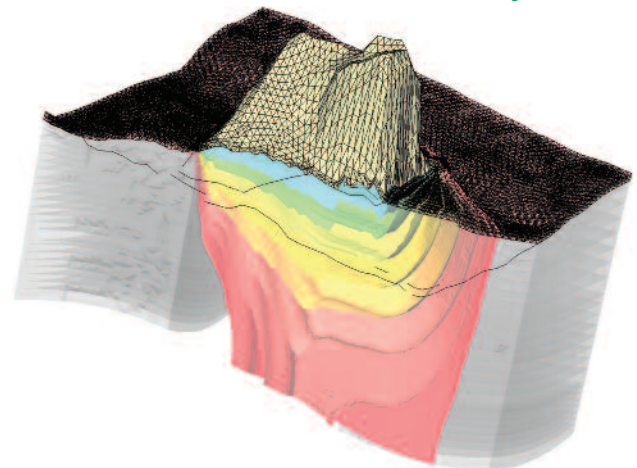
## Common Applications:

The following list is a collection of the most common applications for SVCHEM™GE. Most of these are included as downloadable sample models from the cloud.

- Model contaminant transport in environmental engineering
- Model solute transport in agriculture
- Model the coupled effects of fate and transport and climatic groundwater flows
- Model groundwater aquifers in hydrology
- Analyze sea salt flow or intrusion by density-dependent flow
- Model CO<sub>2</sub> storage for the oil industry
- Model contaminant movement out of storage facilities
- Model waste contaminant movement through a variety of structures
- Model contaminant movement out of underground tanks
- Model contaminant movement in the ground surrounding canals

“As an engineering tool, no other software on the market can match the ability of SVFLUX and SVCHEM to explore creative solutions for seepage and contaminant hydrogeology problems.”

**Robert Donahue, Ph.D., P.Eng.**  
**Professor**  
**University of Alberta**



Contaminant movement beneath tailings.



THE MOST VERSATILE SUITE OF GEOTECHNICAL AND HYDROGEOLOGICAL MULTI-DIMENSIONAL ANALYSIS TOOLS WE HAVE EVER DEVELOPED.

WE HAVE REDEFINED THE "NEW" STANDARD... AGAIN.

### EXCITING NEW FEATURES!

SVOFFICE™5 introduces new features, speed, precision and functionality that have not been available in any other geotechnical analysis software until now.

SVOFFICE™5 boasts a completely new Manager with "Learning" and "Expert" user modes to get you up and running even faster; a completely reimagined and modern Soil Properties database application; a new user friendly 3D model geometry builder and visualizer... SVDESIGNER™; improved user interface for a more intuitive streamlined workflow; an entirely new graphics subsystem to handle more complex geometry, speed up workflows and allow for high resolution output of visuals.

What we haven't changed is our commitment to keep developing leading-edge software at a breakneck pace, exceptional technical support and user training.



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